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PURPOSE AND SCOPE

The *African Journal of Drug & Alcohol Studies* is an international scientific and 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, tobacco or 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 and over-the-counter medications, and traditional substances used in different parts of Africa (e.g., kola nuts and khat).

EDITORIAL AND MANAGEMENT TEAM

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SELF-EFFICACY AS A PREDICTOR OF ALCOHOL USE AMONG STUDENTS AT A UNIVERSITY IN BOTSWANA

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ABSTRACT

Worldwide, harmful alcohol use by college or university students is a public health concern. Many students in colleges and universities indulge in excessive alcohol use, which, in turn, adversely impacts on their health and diminishes opportunities to realise their full potentials. This study assessed the influence of self-efficacy on alcohol use among students at a university in Botswana. The study utilised data from a cross-sectional survey of 266 young adults (age=20.40; SD=20.10; 18-25) enrolled at a university in Botswana. Descriptive statistics, t-tests and regression analyses were performed to assess socio-demographic characteristics, sub-population differences, and the extent to which self-efficacy predicted alcohol use. Forty-six per cent of respondents (n=124) use alcohol, 40 per cent (n=49) of whom were hazardous users. Female students were younger, used less alcohol, and were more self-efficacious than their male peers. The female gender [**β** = 0.15, 95% (CI: 0.01, 0.28)] and the social [**β** = -0.24, 95% (CI: -0.45, -0.09)] and substance use [**β** = -0.35, 95% (CI: -0.45, -0.09)] domains of self-efficacy significantly and uniquely predicted alcohol use. University management and healthcare providers should target self-efficacy as a potential strategy to reduce alcohol abuse and enhance self-care among young adults. Self-efficacy as a strategy empowers young adults to manage their alcohol use better than an authoritarian model of managing alcohol abuse by employed by university authorities. The empowerment model shifts power to the young adults, thus enabling them to think critically, take control of their lives, creates awareness and allows them to make their own decisions based on health literacy and self-care behaviours.

Keywords: self-efficacy, alcohol use, students, Botswana

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INTRODUCTION

Worldwide, alcohol abuse among university or college students is a public health concern (Karam, Kypri, & Salamoun, 2007). Many students in colleges and universities indulge in excessive alcohol use, which, in turn, adversely impacts on their lives. The adverse effects of excessive alcohol use on students' lives include poor academic performance or drop out (O'Malley, & Johnston, 2002), poor social and emotional functioning (Villarosa-Hurlocker, Madson, Mohn, Zeigler-Hill, & Nicholson, 2018), risky sexual behaviours and violence (Gilmore, Lewis, George, 2015; Tsai, Leiter, Heisler, et al., 2011), unintentional injuries or even deaths (Woolsey, Williams Jr, Housman, Barry, Jacobson, & Evans Jr, 2015), and a plethora of physical and mental health problems (Global Status Report on Alcohol and Health, 2018).

Previous studies have demonstrated that individuals with certain socio-demographic, personality and behavioural characteristics are particularly vulnerable to alcohol abuse. For example, it is generally recognised that boys are more likely to indulge in excessive alcohol use than their female counterparts (Erol, & Karpyak, 2015; Pedrelli, Borsari, Lipson, Heinze, & Eisenberg, 2016). Similarly, individuals with certain temperamental dispositions such as novelty seeking are more likely to abuse alcohol than harm avoiders (Ludick & Amone-P'Olak, 2016). Besides, people who suffer from social anxiety (Villarosa-Hurlocker, Madson, Mohn, Zeigler-Hill, & Nicholson, 2018), have low self-esteem with poor self-control (Morutwa & Plattner, 2014; Gareikitse & Plattner, 2016), poor social skills (Kully-Martens, Denys, Treit, Tamana, & Rasmussen, 2012), and a high density of stressful life events (Moitlakgola & Amone-P'Olak, 2015), are more prone to abuse alcohol than those who are not. While it is difficult to modify emotional and personality characteristics, behavioural factors such as self-control, social skills, and self-efficacy are modifiable characteristics that can form the basis for interventions to reduce alcohol abuse. Identifying the modifiable factors that predict alcohol abuse are helpful in health literacy and behavioural interventions.

According to the Social Learning Theory (SLT), self-efficacy is critical to the sustenance of behaviour (Bandura, 1977, 1982). The present study will be anchored on the concept of self-efficacy, which is defined as an individual's belief in their capacity to successfully or unsuccessfully regulate their behaviour (Bandura, 1982, 2006). Despite the possibility that self-efficacy might be related to alcohol use, little research has been conducted on self-efficacy and alcohol use, especially among young adults pursuing a university education in low- and middle-income countries such as Botswana. Previous studies showed that behavioural or self-regulatory strategies such as self-efficacy could be useful in encouraging responsible drinking or, altogether, reducing alcohol use (Barnett et al. 2007; Larimer et al. 2007; Murphy et al. 2012).

Self-efficacy is the foundation of human motivation, actions, and behavioural and psychological well-being (Bandura, 1997, 2006). Central to the theory of self-efficacy is the notion that individuals with high self-efficacy believe in their ability to initiate, pursue, persist and accomplish a set of activities to achieve a behavioural goal (Lee, Arthur, & Avis, 2008). On the contrary, those with low self-efficacy put

in less effort and make few attempts to achieve a target behaviour (Bandura & Cervone, 1983). In postulating the concept of self-efficacy, Bandura (2006) recognised human agency and higher-order cognition as pivotal mechanisms of behavioural course. For example, the determination and efforts to use or not to use alcohol, may depend on an individual's choice and cognition, which are critical to self-efficacy.

Previous studies have linked self-efficacy to several negative health outcomes including alcohol (Glozah, Komesuor, Adu, & Aggrey, 2017; Oei & Jardim, 2007; Young et al., 2006). Indeed, the influence of self-efficacy on alcohol use among young adults may be mediated and moderated by social anxiety (Kushner & Sher, 1993) and alcohol expectancies (Christiansen, Smith, Roehling, & Goldman, 1989; Smith, Goldman, Greenbaum, & Christiansen, 1995). Past studies show that the common reasons university students give for drinking alcohol are to: meet new people, including members of the opposite sex, be sociable, fit in with others and reduce shyness (Goodwin, 1990; Kairouz, Gliksman, Demers, & Adlaf, 2002). Young adults who regularly use alcohol to reduce social anxiety may be at risk for developing abuse or dependency problems (Abrams et al., 2001, 2002; Gilles, Turk & Fresco, 2006). Besides social anxiety, another potentially influential factor that may moderate self-efficacy among students is alcohol expectancies (Gilles, Turk & Fresco, 2006). Alcohol expectances are views that individuals hold about alcohol as social facilitation where alcohol is believed to produce positive social effects. In a study with college students, Burke and Stephens (1997) found that those who were socially anxious held expectancies that alcohol would reduce their levels of social anxiety. Students who indulge in alcohol abuse often demonstrate higher levels of social anxiety and expect that alcohol would reduce their levels of social anxiety. Altogether, more self-efficacious individuals are known to be low on both social anxiety and alcohol expectancy, thus, social anxiety and alcohol expectancy may be key drivers of self-efficacy in young adults.

With a population of about 2.3 million, Botswana is a vast country with one of the strongest economies in Africa (World Economic Outlook Database, 2018). Currently, Botswana is an upper-middle-income country with a Gross Domestic Product (GDP) of US $ 7,877.00 (World Economic Outlook Database, 2018). Contrary to the spectacular economic performance owing to the abundance of diamond resources, Botswana is currently facing substantial health challenges of HIV/AIDS and alcohol and drug abuse. The prevalence of HIV/AIDS is very high among the adult population (15-49 years) estimated at 21.9% (Global AIDS Monitoring, 2017). Besides the HIV/AIDS pandemic, the per capita consumption of pure alcohol in adults (15+ years) is 8.4 litres, higher than the WHO Africa regional average of 6.3 litres (Global Status Report on Alcohol and Health, 2018). Harmful use of alcohol (Alcohol Use Disorders - AUD) is reported to be 7.1%, almost double the WHO Africa regional average of 3.7% (Global Status Report on Alcohol and Health, 2018). Heavy episodic drinking (i.e., consuming 60 grams or more of pure alcohol in one sitting in the past 30 days: Global Status Report on Alcohol, 2018) is estimated at 19% in the general population and 59.4% among users aged 15 years or older (Global Status Report on Alcohol and Health, 2018). Besides the health risks,

hazardous alcohol use accounts for 55% of liver cirrhosis and 35% of road traffic accidents (Global Status Report on Alcohol and Health, 2018).

Among young people at universities, the social environment at campuses such as house or weekend parties and proms (dances), peer influences, and the developmental stage where students are seeking friends or partners of the opposite sex, all serve as catalysts to promote excessive alcohol use on many college and university campuses. Consequently, at one of the public universities in Botswana, the governing council of the university decided to close the student bar on campus to reduce alcohol abuse among students in 2012.

The aims of this study were four-fold: first, to assess alcohol use among students, second, to measure self-efficacy among students, third, to determine if the degree of self-efficacy depended on whether one uses alcohol or not, and finally, to assess whether socio-demographic characteristics (e.g., age, gender, and parental alcohol use) and different domains of self-efficacy (academic self-efficacy, social self-efficacy and substance use self-efficacy) would univariably and independently predict alcohol use among the students pursuing a university education. Based on the literature, it is hypothesised that those with low self-efficacy will use more alcohol compared to those with high self-efficacy.

METHOD

Design and sample

The current study utilised a cross-sectional survey design. A quota sampling strategy was used to recruit students enrolled in various study programmes at a university in Botswana. The use of quota sampling was meant to ensure that the sample was representative of the students from different faculties of the university. Altogether, data were collected from 287 students. Data from 21 students were excluded due to incomplete or invalid responses. In the end, data from 266 students (56% female, n=148) with a mean age of 20.40 (SD= 1.99, range=18-25) were used in the analyses.

Procedures

Data were collected using a questionnaire with items on socio-demographic characteristics, alcohol use, and self-efficacy. Questionnaires were distributed to students in various lecture rooms with permission from lecturers after the purpose of the study was explained to the students. Besides describing the purpose of the study, participants were guaranteed anonymity and confidentiality and were informed of their right to voluntary participation and to withdraw from the study at any time. After the students signed consent forms, they were further asked not to put any identifying information on their questionnaires in order to remain anonymous. The questionnaire took about 10 minutes to complete. Research assistants were present to answer any question that the students might have. Immediately after collecting the questionnaires, the respondents were debriefed, and contact information on where they could get psychological support was provided. The Psychology Clinic and the Student Counselling Centre provide free psychological support to students on campus. Permission to conduct the research was granted by the Institutional Review Board (IRB) of the University of Botswana.

Measures

Three different types of measures were used in the study: first, a self-made socio-demographic characteristics measure (e.g., gender, age, place of upbringing, parental educational attainment, parental alcohol use, etc.), second, the Alcohol Use Disorder Identification Test (AUDIT) (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) was used to assess alcohol use, and the University Academic Self-Regulated Learning Questionnaire (Torre, 2006) was used to measure self-efficacy.

Socio-demographic characteristics: Participants reported on their gender, age, year of study, place of upbringing, maternal and paternal educational attainment, mother's or female guardian's alcohol use, and father's or male guardian's alcohol use.

Self-efficacy: The University Academic Self-Regulated Learning Questionnaire is a 20-item self-report measure of Self-efficacy for university students. The questionnaire, adapted by Torre in 2006, measures perceived self-efficacy on three subscales: academic self-efficacy, social self-efficacy and substance use self-efficacy. The scales reliability, in general, has been within a Cronbach's Alpha score of between α=0.76 and α=0.90. Total scores on the University Academic Self-Regulated Learning Questionnaire ranges from 20-80 with a higher score indicating higher levels of self-efficacy. Items are scored on a scale of (1) =not at all true, (2) = hardly true, (3) = moderately true, and (4) =exactly true of me. Examples of items on this scale include questions such as "I can stand up for myself when I feel I am being treated unfairly". The Cronbach alpha reliability of the total self-efficacy scale in this study was α =.87. For the subscales, it was α =.82 for academic self-efficacy, α =.79 for social self-efficacy, and α =.78 for substance use self-efficacy.

Alcohol use: The Alcohol Use Disorder Identification (AUDIT) Scale is a 10-item self-report measure developed for use in primary health care to screen for hazardous alcohol use in the adult population (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). The AUDIT assesses three basic types of alcohol use: 1) amount and frequency of alcohol use (items 1-3), 2) alcohol dependence symptoms (items 4-6) and problems related to alcohol consumption (items 7-10). The items on the AUDIT scale are scored from 0 to 4, with the total scores ranging from 0 to 40. Scores of 8 and above are indicative of hazardous, harmful or likely alcohol dependence (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The internal consistency of the AUDIT scale for this study was acceptable (α=.87).

Data Analysis

Descriptive statistics (frequency, mean, and standard deviation) were used to compute socio-demographic characteristics, assess levels of alcohol use and measure self-efficacy. A t-test was used to assess whether participants' scores on different domains of self-efficacy differed with or without alcohol use. Univariable regression models were fitted to determine the extent to which different socio-demographic characteristics and areas of self-efficacy predicted alcohol use. Finally, a multivariable regression model was fitted to assess the independent effects of

socio-demographic characteristics and the three domains of self-efficacy (i.e., academic, social and substance use self-efficacy). Only variables that significantly predicted alcohol use in the univariable regression model were simultaneously included in the multivariable regression model. The total score on self-efficacy was omitted from the multivariable regression model. All statistical analyses were computed using the IBM SPSS software version 25.0 (IBM Corp Released 2017). A *p*-value of less than 0.05 was considered statistically significant.

RESULTS

The socio-demographic characteristics of the study participants were computed and presented in Table 1. The average age of the respondents was 20.40 (SD= 2.10, minimum=18 and maximum=25). Overall, male respondents were significantly older than their female peers (Table 1). About 46 per cent (n=124) of the respondents reported that they use alcohol, the majority of whom were males (n=76, 61%). Out of those who reported using alcohol, 40 per cent (n=49) indulge in hazardous alcohol use; again, the majority were males (see Table 1). There were significant gender differences in self-efficacy scores on all domains except the social subscale. Generally, female respondents scored higher on all self-efficacy domains.

Table 2 presents the results of bivariate correlations between variables in the study. Generally, alcohol use significantly correlated with gender and all the domains of self-efficacy (see Table 2). Besides, all the subscales of self-efficacy markedly correlated among themselves.

Non-alcohol users scored higher than users on all domains of self-efficacy. Notably, statistically significant differences were observed for total scores on self-efficacy and academic and substance use domains but not on the social domain of self-efficacy (see Table 3).

Alcohol use was regressed on each of the socio-demographic factors (e.g., age,

Table 1. Socio-demographic characteristics of the participants in the study

Variables	Total (N=266, 100%) (M, SD, n, %)	Male (n=114, 43%) (M, SD, n, %)	Female (n=152, 57%) (M, SD, n, %)	t-test
Age (M, SD)	20.40 (2.10)	20.760 (2.19)	20.10 (1.79)	t (264) = 2.61, $p < 0.05$
Alcohol use				t (264) = 3.33, $p < 0.01$
Yes (n, %)	124 (46%)	76 (61%)	48 (39%)	
No (n, %)	142 (54%)	47 (33%)	95 (67%)	
Total score on AUDIT (M, SD)	3.87 (5.95)	4.70 (6.15)	3.08 (5.53)	t (264) = 2.23, $p < 0.05$
Hazardous use (AUDIT score ≥ 8)	49 (40%)	28 (57%)	21 (43%)	
Non-hazardous use (AUDIT score < 8)	73 (60%)	42 (58%)	31 (42%)	
Self-efficacy (total score) (M, SD)	3.10 (0.54)	3.02 (0.49)	3.21 (0.52)	t (264) = -3.02, $p < 0.05$
Self-efficacy (social subscale) (M, SD)	2.95 (0.61)	3.63 (0.69)	3.75 (0.71)	t (264) = -1.37, ns
Self-efficacy (academic subscale) (M, SD)	3.67 (0.74)	2.82 (0.61)	3.06 (0.59)	t (264) = -3.25, $p < 0.01$
Self-efficacy (substance use subscale) (M, SD)	3.54 (0.74)	3.40 (0.78)	3.66 (0.68)	t (264) = -2.93, $p < 0.01$

Key: N=total sample, n=subpopulation, M=mean, SD=Standard Deviation, %=per cent, AUDIT=Alcohol Use Disorder Identification Test

Table 2. Bivariate correlation among variables in the study

S/No	Variables	1	2	3	4	5	6	7	8	9	10
1	Age	-	-0.16**	-0.19**	0.19**	-0.13	0.06	-0.14*	-0.10	-0.10	-0.17**
2	Sex		-	0.20**	-0.14*	0.14*	0.06	0.19**	0.09	0.20**	0.18**
3	Alcohol use			-	-0.64**	0.12	0.09	0.24**	0.09	0.20**	0.37**
4	Total score on AUDIT				-	0.01	-0.03	-0.25**	-0.13*	-0.19**	-0.41**
5	Maternal alcohol use					-	0.39**	0.20**	0.13*	0.18**	0.15*
6	Paternal alcohol use						-	0.16*	0.07	0.20**	0.05
7	Self-efficacy (total score)							-	0.82**	0.84**	0.64**
8	Self-efficacy (social subscale)								-	0.47**	0.40**
9	Self-efficacy (academic subscale)									-	0.42**
10	Self-efficacy (substance use subscale)										-

Key * $p < 0.05$, ** $p < 0.01$, AUDIT = Alcohol Use Disorder Identification Test

gender) and the subscales of the self-efficacy questionnaire each at a time in univariable regression analyses. In the end, gender, age, and all the domains of self-efficacy significantly predicted alcohol use (Table 4). The proportion of explained variance for the univariable regression models including ranged from $R^2 = 0.13$ ($F_{(1,244)} = 23.69$, $p < .01$ for social domain of self-efficacy to $R^2 = 0.41$ ($F_{(1,244)} = 123.87$, $p < .001$ for the substance use domain of self-efficacy. When all the socio-demographic characteristics and the subscales of self-efficacy were included in a multivariable regression model simultaneously, only gender and the social and substance use domains of self-efficacy independently and significantly predicted alcohol use (Table 4). The proportion of explained variance for the multivariable regression model including gender and the three domains of self-efficacy was $R^2 = 0.31$ ($F_{(5,242)} = 81.32$, $p < .001$, helping to explain 31% of the variance in alcohol use.

DISCUSSION

The present study aimed to assess the vital role that behavioural characteristics such as self-efficacy play in alcohol use among young adults. All the three domains of self-efficacy (academic, social and substance use) significantly predicted alcohol use. The findings of the study supported the hypotheses that self-efficacy was indeed associated with alcohol. These results agree with previous studies that demonstrated a strong relations

Table 3. Differences between alcohol users and non-users on domains of self-efficacy

Variables	Users (M, SD, min-max)	Non-users (M, SD, min-max)	t-test
Self-efficacy (total score)	2.99 (0.56, 1 - 5)	3.24 (0.44, 1 - 5)	t (265) = -3.99, $p < 0.05$
Self-efficacy (social subscale)	3.63 (0.77, 1 - 5)	3.75 (0.63, 1 - 5)	t (265) = -1.41, *ns*
Self-efficacy (academic subscale)	2.82 (0.67, 1 - 5)	3.07 (0.53, 1 - 5)	t (265) = -3.32, $p < 0.05$
Self-efficacy (substance use subscale)	3.24 (0.81, 1 - 5)	3.79 (0.55, 1 - 5)	t (265) = -6.51, $p < 0.05$

Key: M=mean. SD=standard deviation, min=minimum score, max=maximum score

Table 4. Results of univariable and multivariable regression analyses

Variables	β	95% (CI)
† gender	0.20	(0.08, 0.32)
† Age	0.20	(0.08, 0.32)
† Self-efficacy (total score)	-0.25	(-0.39, -0.14)
† Self-efficacy (academic domain)	-0.19	(-0.31, -0.07)
† Self-efficacy (social domain)	-0.13	(-0.27, -0.01)
† Self-efficacy (substance use domain)	-0.41	(-0.52, -0.29)
†† Gender	0.15	(0.01, 0.28)
†† Self-efficacy (academic domain)	0.12	(-0.04, 0.29)
†† Self-efficacy (social domain)	-0.24	(-0.45, -0.09)
†† Self-efficacy (substance use domain)	-0.35	(-0.45, -0.09)

Key: † Univariable regression analyses, †† Multivariable regression analysis, **β**= beta, Confidence interval

between self-efficacy and alcohol use (Bandura, 1982; 2006; Barnett et al. 2007; Glozah, Komesuor, Adu, & Aggrey, 2017; Larimer et al. 2007; Murphy et al. 2012; Oei & Jardim, 2007; Young et al., 2006). For example, Glozah and colleagues (2017) showed that self-efficacy was significantly associated with abstaining from drinking alcohol in a sample of Ghanaian university students. These results are in line with the possible cognitive processes that compels self-efficacious individuals to pursue desired goals and have confidence in their capability to achieve their target goals and behaviours. Bandura and Cervone (1983) showed that individuals with low self-efficacy put in less effort and make a few attempts to achieve a target behaviour. Similarly, Bandura (2006) postulated that the human agency and higher-order cognition are critical pathways to achieving a behavioural outcome. Conceivably, young adults with higher self-efficacy, may also control the negative consequences of any negative impacts of alcohol abuse. Because more self-efficacious individuals are known to be low on factors such as social anxiety and alcohol expectancy, these factors may be key drivers of self-efficacy in young adults that may inform interventions to reduce alcohol abuse among young adults.

Although gender was not initially included in the objectives, it was found to be significantly related to alcohol use. For long, gender differences have been implicated in alcohol use with the male gender indulging in more alcohol use, binge drinking, and excessive use relative to females (Foster, Neighbors, & Young, 2013; Grant et al., 2004; Seo & Li, 2009; Slutske, 2005; Wells, Kelly, Golub, Grov, & Parsons, 2010). The literature not only implicates males in excessive alcohol intake but also shows that males self-identify with alcohol more than their female counterparts (Kadden & Litt, 2011). For example, for a long time, gender theorists have argued that gender roles such as masculine norms and the views that heavy drinking is synonymous with masculinity make males more susceptible to alcohol abuse (Capraro, 2000; Courtenay, 2000; Kadden & Litt, 2011; Mahalik, Good, & Englar-Carlson, 2003). Furthermore, consistent with previous findings (Ehret, Ghaidarov, & Labrie, 2013), males scored lower than females on all domains of self-efficacy

used in this study and males consumed more alcohol, indulge in excessive and hazardous alcohol use, in general. One possible explanation could be due to socialisation where females are assigned more responsibilities running domestic chores and organisation, which, in turn, may make them more self-efficacious, self-caring and responsible unlike their male peers. No wonder, females scored higher on all domains of self-efficacy than their male peers. Consequently, it is imperative to consider gender in designing interventions to reduce alcohol abuse.

Previous studies have recognised self-efficacy as a significant predictor and mediator in interventions with substance use disorders. As a mediator, numerous studies have demonstrated that self-efficacy mediated treatment outcomes in substance use disorders (Glozah, Komesuor, Adu, & Aggrey, 2017; Litt, Kadden, & Stephens, 2005). In a study with cannabis abusers, improvement of self-efficacy led to a marked decrease in use during follow-ups (Litt, Kadden, & Stephens, 2005). Therefore, the results of the current study add to the literature on the factors that may influence alcohol use, especially among young adults. This indicates that enhancing self-efficacy might be an essential step in reducing harmful alcohol use among young adults.

Moreover, it may also indicate that excessive alcohol use among students may be due to lack of strategies and skills to resist or regulate social, emotional and behavioural pressures to drink rather than the availability of opportunities for drinking. Even when an opportunity lends itself, those who are more self-efficacious are more likely to resist social pressures to drink alcohol that make less self-efficacious individuals defenceless. Social forces are recognised as the main push-factor for college students' alcohol abuse (Litt, Lewis, Stahlbrandt, Firth, & Neighbors, 2012). Similarly, regulating negative affect (Neighbors, Larimer, Geisner, & Knee, 2004) and ability to control oneself (Morutwa & Plattner, 2014) are known to play essential roles in alcohol behaviours among young adults. Altogether, the findings in this study signify that targeting self-efficacy is a potential intervention that can empower young people to believe in themselves and to resist alcohol abuse. Therefore, it is possible that training opportunities based on enhancing self-efficacy may benefit young adults, especially those that are less self-efficacious.

The results of the current study are limited in many ways. First, using cross-sectional survey design reduced causal inferences. It is therefore impossible to determine whether self-efficacy is the cause or effect of excessive alcohol use based on the design of the present study. Future studies should consider longitudinal designs with larger sample sizes that can identify changes that might have occurred over time and to reduce causal ambiguity. Second, the data used in the present study were based on self-report. Respondents who use alcohol excessively might have underreported their use due to social desirability. Objective measures such as observing drinking in social situations are recommended. Third, although quota sampling was used to ensure representation of all students from various faculties where they are enrolled, data were gathered from only one institution, thus limiting generalizability to young adults in other settings. Also, the young adults in this study were university students. It is possible that university students have unique alcohol use culture that may be different from other out-of-school

youth or those without university education (Amone-P'Olak, Chilunga, Omech, & Opondo, 2019). Finally, this study examined only self-efficacy as a predictor of alcohol use yet factors such as drinking norms (Ham & Hope, 2005), mental health problems, family dysfunction, and violence are known to predict drinking behaviours (Kgatitswe & Amone-P'Olak, 2017; Moitlakgola & Amone-P'Olak, 2015; Phillip & Amone-P'Olak, 2018; Mongale, & Amone-P'Olak, 2019). Nevertheless, drinking norms are related to self-efficacy. Self-efficacious individuals are more likely to resist norms that predispose them to drinking alcohol.

Aside from the limitations, the results of this study have implications for practice, policy, research and theory. This study contributed to the literature by emphasising self-efficacy as a predictor of alcohol abuse among young adults in Botswana where alcohol abuse is rampant (Global Status Report on Alcohol and Health, 2018; Pitso & Obot, 2011; Republic of Botswana: Control of goods regulations, 2008; Moitlakgola & Amone-P'Olak 2015). University authorities and health workers can apply the findings of this study to manage students with alcohol abuse and dependence challenges. Self-efficacy directly influences self-care behaviours associated with alcohol use. To improve self-care behaviours, university authorities and health workers should aim to improve self-efficacy and enhance health literacy and knowledge of alcohol-disease links among university students (Amone-P'Olak, Chilunga, Omech, & Opondo, 2019) and train university students to use alcohol in moderation and responsibly. To increase the health literacy and knowledge of alcohol-disease link among students, university authorities and healthcare workers could provide an empowerment approach of training students to be more self-efficacious rather than using draconian approaches such as banning alcohol on campus. Therefore, self-efficacy remains an important theory for explaining behavioural capability and processes in alcohol abuse among young adults.

In Botswana alcohol abuse is reported to be the catalyst for the spread of HIV/AIDS through risky sexual behaviours and sexual violence (Tsai, Leiter, Heisler, et al., 2011). Thus, the policy implication of the findings of this study is to enhance self-efficacy as a potential strategy of reducing alcohol abuse by young adults instead of authoritarian policies that have been adopted by the government of Botswana in the past decades. For example, upon the realisation that alcohol abuse was rampant and a public health concern, especially among young adults, the government of Botswana introduced a 70% levy on alcohol products in 2008, which was later reduced to 30% (Pitso & Obot, 2011; Republic of Botswana: Control of goods regulations, 2008). The goal of the alcohol levy was to reduce alcohol use, excessive drinking, underage drinking and intoxication, and to restrict the availability of alcohol (Pitso & Obot, 2011; Republic of Botswana: Control of goods regulations, 2008). In 2012, the governing council of the University of Botswana banned alcohol on campus to reduce alcohol abuse by the students. Instead of adopting such draconian measures, self-efficacy training can be used an empowerment model to shift power and responsibility to the young adults to think critically, take control of their lives, create awareness and allow young adults to make their own decisions through health literacy and self-care behaviours. Similarly, university

authorities and healthcare workers should create awareness among young adults about their psychological and behavioural problems, seek help when needed, and get tips on regulating their vulnerability (Van Breda 2013; 2017).

CONCLUSIONS

University management and healthcare providers should target self-efficacy as potential strategy to reduce alcohol abuse and enhance self-care among young adults. Self-efficacy as a strategy empowers young adults to manage their alcohol use better than authoritarian models of managing alcohol abuse employed by university authorities such as banning alcohol on campus. For example, individuals who are more self-efficacious are known to be low on both social anxiety and alcohol expectancy, thus, reducing social anxiety and changing the notions that alcohol expectancy produces the desired behaviours may be critical in enhancing self-efficacy. The empowerment model shifts power to the young adults, thus enabling them to think critically, take control of their lives, creates awareness and allows them to make their own decisions through health literacy and self-care behaviours. University authorities and healthcare workers should create awareness among young adults of their mental health, help-seeking, and emotional regulation around their vulnerability (Van Breda 2013; 2017).

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MT designed the study, drafted the manuscript, conducted literature searches, provided summaries of previous research studies, and drafted the introduction, method, and discussion sections. KAP performed the statistical analyses and wrote the results section and provided feedback to the manuscript. Both authors contributed to and had approved the final manuscript.

CONFLICT OF INTEREST

Both authors declare that they have no conflicts of interest.

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ALCOHOL CONSUMPTION AS A FACTOR IN GUN OR KNIFE CRIMES IN SOUTH AFRICA

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ABSTRACT

South Africa is one of the top ten alcohol-consuming countries in Africa. The South African government has undertaken multifaceted efforts to regulate alcohol consumption to address violent crime. Despite integrated regulation, the link between alcohol consumption and violent crime remains blurred and unclarified. The paper examines the significance of alcohol consumption in relation to violent crime victimization. The study utilized data obtained from the South African National HIV Prevalence, Incidence and Behaviour Survey, 2012. Descriptive, inferential statistics and a factor analysis were used to measure the association between alcohol consumption and violent crime victimization. About 30% of the respondents had been a victim of violent crime where gun or knife was used in the past 12 months. Respondents indicated that 41.1% of the perpetrators were under the influence of alcohol; whereas 20.9% of the victims were under the influence of alcohol. Respondents who had drinking problems were more likely to be a victim of violent crime than those who did not have drinking problem. Furthermore, respondents who were unemployed were two times more likely than those who were employed to be a victim of violent crime. Young people were two times more likely than older people to be a victim of violent crime by gun or knife. Low level of education was a predictor of gun or knife violent crime victimization. Our findings indicate that alcohol consumption was not a strong factor influencing violent crime but having drinking problem underscored violent crime victimization. Furthermore, effort towards education and reducing unemployment would considerably decrease gun or knife violent crime victimization.

Keywords: Alcohol, gun violence, knife violence, South Africa, crime victimization

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INTRODUCTION

South Africa remains one of the top ten countries that consume alcohol in Sub Saharan Africa. South African drinking population aged 15 years and over consumes 26.9 litres of pure alcohol per capita per year (Ferreira-Borges, Dias, Babor, Esser, & Parry, 2015), which translate to daily average 58.1 grams of pure alcohol. In addition, South Africa has appeared as one of the most lethal violent country by either gun or knife violence in African (World Health Organization, 2014). It was documented that 31.1 murders, and 355.6 assaults with intentions to inflict grievous bodily injury, per 100,000 populations was committed in South Africa between 2012 and 2013 (South African Police, 2013). Between 2017 and 2018, 167 352 counts of assault with the intent to inflict grievous bodily harm were reported in South Africa (South African Police Service, 2018) In 2018, it was estimated that 73,3% of all robberies was perpetrated with weapon such as knives and guns in South Africa (Statistics South Africa, 2018). About 46% of adult South Africans were of the view that violent crime increases by 4,5% which translate to over 1,6 million crimes against individuals the previous year (Statistics South Africa, 2018). Both alcohol use disorders and violent crime constitute significant public health concern for burden of diseases and security in South African society. The tangible financial cost related to harmful alcohol use alone was estimated at R37.9 billion, or 1.6% of the 2009 GDP (Matzopoulos, Truen, Bowman, & Corrigall, 2013).

There is evidence that alcohol use was linked to victims of homicide perpetrated by sharp weapons and firearms. National Injury Mortality Surveillance System (NIMSS) of 323 adolescents, (Swart, Seedat, & Nel, 2015) found that use of alcohol was implicated in 39.3% of homicide victims in city of Johannesburg. Another study on intentional injury among 8445 patients, alcohol was recorded in 72% cases in Cape Town (Schuurman et al., 2015). Alcohol was implicated in murders cases in KwaZulu-Natal, North West and Limpopo provinces of South Africa (South African Police, 2018).

Studies elsewhere showed that alcohol was detected in the blood sample of homicide victims, in São Paulo (Andreuccetti et al., 2009) and Udmurt Republica (Pridemore, 2004). Data from two waves of the Brazilian National Alcohol and Drugs Survey, revealed that alcohol has been implicated even when other substances used were not significant predictor of being a victim of IPV (Ally et al., 2016). Alcohol consumption remains the strongest categorical predictor of intentional injury even when controlling for all other selected variables (Dong, Branas, Richmond, Morrison, & Wiebe, 2017).

The prominences of alcohol in violence perpetration and victimization have been observed in empirical studies. However, National surveys have shown weak association between alcohol consumption and violence. In the meta analyses examining the link between alcohol use and violence victimization, the associations between alcohol related violence perpetration and alcohol related violence victimization were not significant (Duke, Smith, Oberleitner, Westphal, & McKee, 2018). According to Branas, Han, & Wiebe, (2016), there exist instances of alcohol consumption with no evidence of firearm violence despite no abstaining in United States. Pérez-diaz & Huré, (2011) on the other hand asserts that even in

alcohol-aggression relationship violence, perpetrators already had a history of peer aggression acts. Studies have shown that in the interplay of addiction and poverty, alcohol has been distinguished to be playing modifying role in firearms violence (Branas et al., 2016; Burnett, 2002; Norman et al., 2007). These studies concluded that alcohol was not a factor in firearms violence occurrence but have been playing a modifying or contributing role in the acts. In South Africa, interpersonal violence ranks higher than alcohol as a contributor to death and disability (Norman et al., 2007). Furthermore, murder cases attributed to alcohol consumption were minimal compared to other violence causes of death in KwaZulu-Natal, North West and Limpopo provinces of South Africa (South African Police, 2018).

South African government has undertaken multifaceted efforts to regulate alcohol consumption. These interventions have been inspired by the evidence that alcohol consumption has a direct link to violent crime perpetration or victimization (Duke et al., 2018; Kuhns, Exum, Clodfelter, & Bottia, 2014). Although much of the violence have been associated with alcohol use, but the link between alcohol consumption and violent crime remains blurred and unclarified in South African society. For instance, it is historical and very common to address service delivery concerns though violence in South Africa. Burnett, (2002) further emphasised that violence is an integral part and a way of life among poverty-stricken people in South African. Pearson & Sale, (2011) noted rightly that putting criminal acts or crowd disorder on mere alcohol consumption is problematic. They contended that complex interactions between alcohol consumption and structural, situational and individual factors which trigger violence has been overlooked by researchers (Pearson & Sale, 2011).

Scientific nexus of alcohol related firearm violence has not been overtly investigated and audited in the context of alcohol as a modifiable risk factor (Branas et al., 2016) because previous studies overlooked key variables (Ostrowsky, 2018). Drinking is not everyday way of life even for most drinkers in South Africa. Ostrowsky rightly posited that sociodemographic variables closely connect alcohol use to violence behaviour. Hence, risk of violence associated with alcohol have shown variations with age, gender, religion, poverty and ethnicity (Ferreira-Borges et al., 2015; Semahegn & Mengistie, 2015). For instance, a peculiar feature of violent crime perpetration and victimization leading to homicide in developing countries is the role of poverty (Burchfield & Silver, 2013; Graif & Matthews, 2017). Other studies have shown differentiation in gender in alcohol use crime victimization (Bunch, Clay-Warner, & Lei, 2015). These studies suggest that alcohol alone cannot account for all acts of violence. While it is accepted to be rowdy or obnoxious when drinking (Ostrowsky, 2018), it can also produce euphoric state of tranquillity.

Despite the plentiful and growing literature in the recent years, the overall relationship between alcohol use violence and victimization remains limited even in developed countries (Duke et al., 2018). For South Africa in particular, it is not easy to link consumption of alcohol and/or drugs to an offender or victim prior to a crime because such information is not always available in the case dockets (South African Police, 2018). South Africa is one of the developing countries where alcohol consumption is very rife. In addition,

studies of violent crime were abundant as compared to studies of alcohol and violent crime victimization by gun or knife in South Africa. The relationship between alcohol consumption and violent crime victimization by gun or knife presents a major gap in knowledge because of dearth of studies in South Africa. Therefore, the study is important to examine the significance of alcohol consumption in relation to gun or knife violent victimization.

METHOD

The study used South African National HIV Prevalence, Incidence and Behaviour Survey (SABSSM) 2012, which was a cross-sectional population-based household survey. A multi-stage stratified cluster sampling approach was employed to select a total of 15,000 households in which all members of the household were eligible to participate. A total of 42,950 individuals in the valid households were eligible to be interviewed and 38,431 were interviewed, resulting in a participation rate of 89.5%. However, the current study focused on Alcohol consumption and violent crime, in the last 12 months before the survey. Also people below the age of 15 years, individuals with missing information on alcohol use and have not been victim or perpetrator of violent crime where gun or knife was used to threaten or harm a person were excluded from the study, thus yielding the sample size of 1836. The full details of sampling and methodology have been presented elsewhere (Shisana et al., 2014).

Variable description dependent variable

The dependent variable was being a victim of violent crime. In the SABSM/SM, 2012 questionnaire used for data collection, individuals were asked if they have been a victim of violent crime where gun or knife was used to threaten or harm you in the past 12 months. The answer was Yes coded as 1 and 0 if the person has never been a victim of gun or knife violent crime.

Independent variables

The major independent variables were drinking problem and alcohol consumption. Respondents were asked six questions which signify signs of abnormal alcohol consumption or abnormal behaviours due to alcohol consumption on a scale from one (never) five (daily). For example, the respondents were asked "how often do you have (for men) five or more and (for women) four or more drinks in a setting" How often during the past 12 months were you not able to stop drinking once you have started; did you fail to do what was normally expected of you because of drinking; did you need a first drink in the morning to get yourself going after a heavy drinking session; did you feel guilt or remorse after drinking and were you unable to remember what happened the night before because of your drinking. Other independent variables include age, sex, education and employment status.

Statistical Analysis

Data were analysed using descriptive and inferential statistics. Sociodemographic profile of the respondents was summarised using frequency and percentages. Associations between the outcome variables of violent crime victimization and sociodemographic variables were analysed using Pearson chi-square tests. The main predictor was drinking problem which was generated using the

six questions which showed reliability of .81 for Cronbach alpha. The six questions were subjected to factor analysis using principal component method. Factors were extracted if the eigenvalue is equal to or greater than one. Factor analysis was used to examine the interrelationships among problem alcohol consumption and violent crime victimization. The assumption of factor analysis is that underlying abnormal alcohol consumption or abnormal behaviour due to alcohol consumption can explain violent crime victimization. Finally, binary logistic regression models were used to examine the effect of the factor analysed alcohol consumption problem and other independent variables on violent crime victimization. The results were presented as odds ratio and confidence intervals.

Ethical considerations

The survey protocol was approved by the HSRC's Research Ethics Committee (REC: 5/17/11/10) as well as by the Associate Director of Science of the National Centre for HIV and AIDS, Viral Hepatitis, STD and TB Prevention at the USA's Center's for Disease Control and Prevention (CDC) in Atlanta. The HSRC's REC has Federal Wide Assurance (FWA) for the Protection of Human Subjects accreditation with the USA's Department of Health and Human Services (DHHS).

RESULTS

Table 1 below presents the demographic profile of the respondents. It shows that slightly over half were males. More than a quarter were of age 20 to 29 years old, followed by nearly one quarter (23.7%) who was aged 50 years and over. A majority had completed grade 12 or less compared to 16.8% who had attained post-grade 12 qualifications. The proportion unemployed were slightly lower than their employed counterparts. Nearly half (48.7%) have never consumed alcohol. Among those who consume alcohol, more than half reported that they consume about 4 drinks or less. In general, 3 in 10 have been a victim of violent crime where gone or knife was used. Over four-fifth reported that no one has been injured as a result of their alcohol consumption. Seventy-eight percent started that no relative, friends, doctor or health worker had ever suggested cutting down on their alcohol consumption. Two-fifth of the victims of violent crime stated that the perpetrator was under the influence of alcohol whereas 58.9% were sober. Furthermore, less than a quarter of the victims of violent crime indicated that they were under the influence of alcohol when they were attacked.

Table 2 below depicts violent crime victims by selected demographic characteristics. Apart from pattern of alcohol consumption, all the examined sociodemographic characteristics showed significant association with reporting being a victim of gun or knife violence. Compared to the females, males were more likely to be victims of violent crime. In terms of age, 36.3% and 21.0% of victims of violent crime was among those of age group 20 to 29 and 30 to 39 respectively. Reporting victims of violent crimes increase with decreasing level of education. Over half of the unemployed respondents have experienced violent crime compared to 42.2% of employed counterparts. Proportion reporting being victims of violent crime was lowest among those who indicated that they consume 7 or more drinks at a

Table 1. Percentage distribution of respondents by selected demographic characteristics

Characteristics	Frequency (N)	Percentage (%)
Sex		
Male	1005	54.7
Female	831	45.3
Total	1836	100.0
Age		
15-19	219	11.9
20-29	499	27.2
30-39	379	20.7
40-49	303	16.5
50+	435	23.7
Total	1835	100.0
Education		
<Grade 12	741	46.4
Grade 12	589	32.1
Post Grade 12	268	14.6
Total	1598	100.0
Employment status		
Unemployment	808	48.0
Employment	876	52.0
Total	1684	100.0
Number of drink		
1 or 2	319	34.0
3 or 4	273	29.1
5 or 6	184	19.6
7+	161	17.2
Total	937	100.0
Drinking Pattern		
Once a month	545	48.7
2-4 times a month	333	29.8
2-3 times a week	145	13.0
4 or more times a week	96	8.6
Total	1119	100.0
Have been a victim of violent crime where gun or knife was used in the past 12 months		
No	1279	69.7
Yes	557	30.3
Total	1836	100.0
Have you or someone else been injured as a result of your drinking?		
No	956	85.7
Yes	160	14.3
Total	1116	100.0
Has a concerned relative, friend, doctor or other health worker ever suggested that you should cut down on your drinking		
No	870	78.3
Yes, but not in the past 12 months	96	8.6
Yes, during the past 12 months	145	13.1
Total	1111	100.0
Was the person who attacked you under the influence of alcohol? Please think about the most recent instance		
No	319	58.9
Yes	223	41.1
Total	542	100.0
Were you under the influence of alcohol at the time? Please think about the most recent instance		
No	434	79.1
Yes	115	20.9
Total	549	100.0

Table 2. Percentage distribution of respondents who have experienced violent crime by selected demographic characteristics

Characteristics	No % (N)	Yes % (N)	X2; p-value
Sex			16.73; p < 0.001
Male	51.6 (660)	61.9 (345)	
Female	48.4 (619)	38.1 (212)	
Total	69.7 (1279)	30.3 (557)	
Age			28.46; p < 0.001
15-19	10.3 (132)	15.6 (87)	
20-29	23.2 (297)	36.3 (202)	
30-39	20.5 (262)	21.0 (117)	
40-49	18.0 (230)	13.1 (73)	
50+	28.0 (358)	13.8 (11)	
Total	69.7 (1279)	30.3 (556)	
Education			43.88; p < 0.001
< Grade 12	41.6 (462)	57.3 (279)	
Grade 12	38.3 (426)	33.5 (163)	
Post Grade 12	20.1 (223)	9.2 (45)	
Total	69.5 (1111)	30.5 (487)	
Employment status			29.50; p < 0.001
Unemployed	43.5 (503)	57.8 (305)	
Employed	56.5 (653)	42.2 (223)	
Total	68.6 (1156)	31.4 (528)	
Number of drink			31.54; p < 0.001
1-2	38.7 (255)	23.0 (64)	
3-4	29.7 (196)	27.7 (77)	
5-6	16.4 (108)	27.3 (76)	
7+	15.2 (100)	21.9 (61)	
Total	70.3 (659)	29.7 (278)	
Drinking Pattern			2.82; p = 0.421
Once a month	15.4 (122)	13.7 (45)	
2-4 times a month	34.5 (273)	32.0 (105)	
2-3 times a week	28.8 (224)	33.2 (109)	
4 or more times a week	21.7 (172)	21.0 (69)	
Total	70.7 (791)	29.3 (328)	
Have you or someone else been injured as a result of your drinking?			27.20; p < 0.001
No	89.2 (707)	77.1 (249)	
Yes	53.8 (86)	46.3 (74)	
Total	71.1 (793)	28.9 (323)	

setting. Over two-third of those who were victims of violent crime stated that their consumption of alcohol has never resulted in injury to them or other people.

The one-dimensional measure of 6 items signifying having problem of alcohol use among respondents is presented in Table 3. The sample adequacy was ascertain based on Kaiser-Meyer-Olkin measure (KMO) value of 0.86 and sufficiency of variables correlations for PCA was confirmed by Bartlett's test of spherity $\chi2$ (15) = 1699.00; p <.001. The result shows that the one-dimensional measure of having problem with alcohol use explained 53.0% of the variance with Cronbach α = 0.81. The items related to respondents having problem of alcohol use ranges from 16.0% of in ability to carry out expected duty to 51.8% of binge drinking.

Table 3. One-dimensional measure of alcohol use problem

Factor loadings and communality values for response on drinking problem				
	Factor	**Communalities**	**%**	**N**
Cronbach á = 0.81				
How often during the past 12 months did you need a first drink in the morning to get yourself going after a heavy drinking session?	.775	.601	17.2	946
How often during the past 12 months did you fail to do what was normally expected of you because of drinking?	.769	.591	16.3	947
How often during the past 12 months were you not able to stop drinking once you have started?	.745	.555	18.9	946
How often during the past 12 months did you feel guilt or remorse after drinking?	.718	.516	25.5	947
How often during the past 12 months were you unable to remember what happened the night before because of your drinking	.706	.499	16.5	947
How often do you have (for men) five or more and (for women) four or more?	.649	.421	51.8	946
Eigen value	3.182			
Variance explained (%)	53.03			
Kaiser-Meyer-Olkin test of sample adequacy	0.856			
Bartlet test of sphericity	$\chi 2$ (15) = 1699.00, $p < 0.001$			

Table 4 presents the unadjusted and adjusted odds ratios of violent crime victimization by selected demographic variables. All the unadjusted ORs were significantly associated with violent crime victimization by gun or knife. Adjusted model shows that age, educational level, employment status, and problem of alcohol use were significantly associated with being victim of violent crime by gun or knife. Compared to age group 50 years and over, the age group 20-29 were 2.5 times more likely be victims of gun or knife violent crime. Educational levels revealed that respondents who had less than grade 12 qualifications were 2.7 times more likely than those with post grade 12 qualification to be victims of violent crime. Having grade 12 qualification weakly predicted the probability of being a victim of violent crime with (OR= 1.7; P= 0.052). Probability of being a victim of crime perpetrated by gun or knife was high among unemployed respondents compared to their employed counterparts. Having problem with alcohol (Factor) was 1.2 times as likely as those who did not have to be a victim of violent crime.

DISCUSSION

The thrust of the paper was to put in perspective alcohol consumption and violent crime victimization by the use of gun or knife. The findings suggest a possible link between alcohol use and victimization by gun or knife. Data revealed that 41.1% of the perpetrators were under the influence of alcohol; whereas 20.9% of the victims were under the influence of alcohol at the time of the assault. The result of the study showed alcohol dose dependency association with being a victim of violent crime which is in consonance with previous findings (Pridemore,

Table 4. Odds ratios between violent crime victimization and selected sociodemographic variables

	Unadjusted model		Adjusted model	
	OR	**95% C.I.**	**OR**	**95% C.I.**
Age				
15-19	3.064***	2.125-4.418	1.873	0.941-3.727
20-29	3.162***	2.333-4.287	2.543**	1.482-4.364
30-39	2.076***	1.494-2.885	1.341	0.738-2.440
40-49	1.476*	1.029-2.116	1.102	0.567-2.141
50+	1.000		1.000	
Sex				
Male	1.526***	1.246-1.870	1.312	0.894-1.924
Female	1.000		1.000	
Educational level				
< Grade 12	2.993***	2.102-4.260	2.771***	1.600-4.799
Grade 12	1.896**	1.313-2.739	1.741	0.995-3.049
Post Grade 12	1.000		1.000	
Employment status				
Unemployed	1.776***	1.442-2.187	1.884***	1.296-2.738
Employment	1.000		1.000	
Number of drinks				
1 or 2	1.000		1.000	
3 or 4	1.565*	1.070-2.289	1.080	0.680-1.716
5 or 6	2.804***	1.877-4.189	1.471	0.864-2.505
7+	2.430***	1.597-3.699	1.113	0.632-1.960
Factor	1.452***	1.266-1.664	1.207*	1.004-1.452

*p < 0.05; **p < 0.01; *** p < 0.001. ref= reference category, CI= confidence interval OR = Odds ratio

2016; Swart et al., 2015). However, this association became weak when other factors are put into consideration. This suggests that alcohol use may be playing a modifying role in the whole gamut of gun or knife violent crime victimization. Our findings concurred with the previous report (Branas et al., 2009) which indicated that moderate alcohol consumption may not be a risk factor for violent crime victimization rather heavy drinking. Although Alcohol has been consumed, but the individual may still retain lucid verdict to avoid being victimized by knife or gun. The highlight of the study was that having problem of alcohol underscored being a victim of violent crime perpetrated with gun or knife. A finding that is consistent with earlier reports (Ferreira-Borges et al., 2015; Pridemore, 2016; Swart et al., 2015).

The result is in agreement with previous studies (Bunch et al., 2015; Ferreira-Borges et al., 2015) that documented that people of age 20-29 were prone to be victims of violent crime by gun or knife. The possible explanation for this age group being victims of violent crime could be as a result of nature of company they keep or differential in routine activities

between old and young adults. Young adults often gather in premises such as clubs, shebeens and bar or place where there is absolutely no supervision. The fact that perpetrators of these violent are mostly unknown to the victims may suggest that young people are insensitive to unsafely state of their environment.

In line with prior findings low education level (Semahegn & Mengistie, 2015) was predictive of violent crime victimization. Low level of education often predisposes to a lot of negative experiences either through poor reasoning and or wrong perception of circumstances that endangers life. South Africa has good educational policy that would ensure acquiring educational qualifications which would evict people from susceptibility of violent crime victimization attributed to low educational status.

Findings that unemployed people were more prone to be victim of violent crime is in agreement with previous studies (Burchfield & Silver, 2013; Ferreira-Borges et al., 2015; Graif & Matthews, 2017). This finding is not unexpected, given that there is a moral decay in which violence is acceptable on the ground of ignorance, poverty, xenophobia and race rather than fact. It was documented elsewhere that society accept crime and rape while blaming victims and excusing the behaviour of the offender (Johnson, 2017). Most of the violence orchestrated be it interpersonal or xenophobic is linked to poor socioeconomic status in South Africa society. Unemployment is synonymous to poor socioeconomic status which may heightens individual risk of crime victimization. South African government alleviates poverty through grants on certain conditions and health reasons. However, unemployed individuals may not be beneficiaries of this government scheme where ill health or disability is not recorded. Given the rising level of unemployment, the vulnerability of being victim to violent crime by gun or knife may increase.

Limitation of the study

One of the major limitations of the study is the use of secondary data which is limited in several sociodemographic variables thus restricted a nuanced investigation in relationship of alcohol use to gun or knife victimization. Further investigation should delve into structural, situational and individual factors that influence gun or knife violence victimization. Evidence based on hospital or police documentation was not included in the study. However, strength of the study is the use of a national representative sample which could guide as future violent crime victim surveillance by use of gun and sharp weapon.

CONCLUSION

The study demonstrated that having problem of alcohol promotes gun or knife violence victimization. These findings imply that any attempt to prevent violence due alcohol use must consider restriction of gun and knife in premises where alcohol are used. This intervention may have impact in preventing both perpetration and victimization through gun or knife violence. Furthermore, poor socioeconomic state of individuals poses as intensifying factor to victim of gun or knife violence. The strength of the relationship between unemployment and being a victim of violence suggests anticipation for more financial burden on the government as unemployment continues to rise. Interventions tailored to ensuring basic income earning

employment and obtaining higher level of education may impact positively on reduction of vulnerability to gun or knife victimization. More importantly, having problem of alcohol consumption may need establishment of rehabilitation programme for the affected individual. Effort should further be channelled to assessment and evaluation of mental health of these victims to ensure that they do not constitute instability in communities because of their experiences.

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PREPARED HERBAL REMEDY USE AMONG ARTISANS IN NSUKKA (NIGERIA) MOTOR-MECHANIC VILLAGE

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ABSTRACT

An indeterminate amount of alcohol is concealed in prepared herbal remedies. This deception requires focused and concerted efforts to address the problem. The present study used a mixed-method design to evaluate two objectives. The first objective was to determine the prevalence of use of some common variants of prepared herbal remedies among artisans in Nsukka motor-mechanic village. The second objective was to determine why artisans use herbal medicines. Data for this study were conducted using unobtrusive observation, interviews, and a structured questionnaire. Participants for study 1 (n = 94) were sampled from about 205 artisans in Nsukka motor-mechanic village. Descriptive statistics showed that there was high prevalence of use of prepared herbal remedies among the sample. Twelve (12) participants (study 2; participants were not part of the 94 in study 1) were interviewed at different spots in the motor-mechanic village. Qualitative data, which were analyzed by relating outstanding points of response to the objectives of the study showed craving for alcohol, belief in the efficacy of herbal remedies, poverty, and poor treatment of artisans by health workers as some of the reasons that sustain the use of prepared herbal remedies among the sample.

Keywords: herbal remedies, alcohol, artisans, Nsukka

INTRODUCTION

The World Health Organization (WHO, 2010), estimates that about 80 per cent of the populations in developing countries, such as Nigeria, depend on prepared herbal remedies for their primary health care needs. Prepared herbal remedy is a concoction of plants parts, such as roots, leaves, bark and trunk boiled in water or soaked in alcohol. The origin of prepared herbal remedies among the Igbo

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people of South-Eastern Nigeria is rooted in the people's cultural belief that herbs are potent remedies for several kinds of ailments. Even before the advent of the white missionaries, the Igbo people have used hundreds of indigenous plants and herbs for the treatment of typhoid fever, malaria, migraine, chronic fatigue, irritable bowel syndrome, arthritis, and many other sicknesses. Chinua Achebe in his book "*Things fall apart*" portrayed the value the Igbo people attached to prepared herbal remedy. Achebe (1958) wrote: "It is *iba* (i.e., fever)," said Okonkwo as he took his matchet and went into the bush to collect the leaves and grasses and barks of trees that went into making the medicine for *iba* (p. 61). In the traditional Igbo society, if one wants to prepare a herbal remedy, the individual must cut a large bundle of grasses and leaves, roots and barks of medicinal trees and shrubs, then the best from the bundle, in their due proportions are cooked with water for a specified length of time. In the distant past, every family prepares its own herbal needs for handling minor ailments. However, they would consult traditional medicine-men, who are famous for their knowledge in herbal medicine, to handle serious medical problems. Today, the traditional way of preparing herbal remedies in families have changed. The process has become commercialized. It is now common sight to see middle aged women carry a basin stacked full of different bottles of herbal remedies on their heads for sale.

Prepared herbal remedy is sold everywhere in Nsukka, but the motor-mechanic village and the Nsukka-motor parks are the usual hot-spots where herbal remedies sell freely. Using herbal remedy for healthcare needs should ordinarily not be a problem. For instance, the World Health Organization supports the use of herbal remedy if they are proven to be safe (Falodun & Imieje, 2013). Although the safety measures of prepared herbal remedy leaves much to be desired (Oluwadiya & Adegoke, 2012), a more worrisome but subtle concern about the use of herbal remedy is the fact that many brands of herbal remedies, especially those sold at the motor-mechanic village in Nsukka are frequently soaked in alcohol or in distilled spirits. This implies that a sizeable proportion of alcohol is inadvertently consumed by people who use prepared herbal remedies. Oluwadiya and Adegoke (2012) argue that herbal remedies contain incredibly high alcohol content. They analyzed the alcohol concentration of some herbal remedies sold around Osogbo, South-Western, Nigeria and found that the samples contained as high as 21% alcohol by volume. A related study (Okafor, Alabi, Oke, Onwuamanam, & Emmanuel, 2019), revealed that some brews can have up to 40% alcohol by volume. Alcohol is poison. Obot (2006) argues that alcohol was responsible for contributing to about 60 disease categories; he asserts that "alcohol in all its forms is a commodity with high potential for negative health and social consequences" (p. 25). Again, if it is recognized that liver cirrhosis, a strong proxy for long-term health damage associated with alcohol is increasing among people who are drinking excessively (Jarl & Gerdtham, 2012), then regulating the use of herbal remedies brewed in alcohol should be a matter of necessity, not of choice.

The more alcoholic beverage taken into the body, the more injurious it becomes. In large quantities over a prolonged period, alcohol could cause insidious and

permanent damage to the brain and liver (Bushmen & Cooper, 1990). Studies on road rage and road accidents in Nigeria have reported that approximately 50 per cent of accidents on Nigerian roads are linked to alcohol use (Mefoh, Ugwu & Eze, 2018; Mefoh, Ugwu, Ugwu & Samuel, 2013; Welcome & Perverzev, 2010). Ejikeme (2004) has argued that even a moderate high intake of alcohol could inevitably lead to problems at workplace, such as luring people away from work and/or resulting in absolute tardiness. Frequent alcohol use leads to several problems like quarrelling, engaging in various risky behaviours and experiencing physical aggression (Tunwesigye & Kasirye, 2005). If alcohol induces such tendencies, herbal remedies brewed in alcohol should not be allowed to proliferate without regulations. The self-determination theory (SDT) (Deci & Ryan, 2012) provides the relevant framework for understanding the relationship between prepared herbal remedy and its use. The model indicates that people tend to have innate psychological needs that when fulfilled, have an effect on personal growth, psychosocial adjustment and wellbeing. It is highly probable therefore that many people who use herbal medicine do so for other reasons beyond the health care needs.

Over a dozen studies have examined the use of prepared herbal remedies in Nigeria (e.g., Akande, Adewoyin, Njoku, & Awosika, 2012; Falodun & Imieje, 2013, Oluwadiya & Adegoke, 2012; Okafor et al. 2019). Most of them stressed how unsafe herbal remedies are to public health, and some relate this to the issues of hygiene and fermentation of plant parts (e.g., Okafor et al. 2019). The present study views alcohol use as a problem, and sees it as the main driver for incessant use of prepared herbal remedies by many adults. The present study has two objectives: first, was to investigate the prevalence of use of common variants of prepared herbal remedies among artisans; and the second was to inquire about the motives for use of prepared herbal remedies.

METHOD

Study 1

Participants

Ninety-four (94) artisans completed a measure used to examine the use of prepared herbal remedies. All the participants were males: 52 of them were single (55.32%), 36 were married (38.30%), 4 were widowed (4.26%) and 2 were divorced (2.13%). With regard to level of education: 33 completed primary school (35.11%), 47 completed secondary school (50.00%), and 14 completed tertiary school (14.89%). Their ages ranged between 17 and 52 years, with a mean age of 32.07 years and a standard deviation of 5.32. The artisans fell into the following distribution: Motor-mechanics 43 (45.74%), Panel-beaters 15 (15.96%), Welders 8 (8.51%), Auto-electricians 11 (11.70%), Nondescript artisans 17 (18.09%).

Measures

The questionnaire used in the study was adapted from the Psychoactive Substance Use Questionnaire (PSUQ) (Eze, 2006). The PSUQ is a 6-item measure of the frequency of psychoactive substance use. The instrument has a content validity and test-retest reliability index of 0.61. The adaptation was done by substituting the psychoactive substances on the PSUQ with seven variants of herbal remedies,

namely herbal remedies: for malaria, for typhoid fever, for clearing impurities, for dysentery, for body pain, for gonorrhea, and for boasting sexual powers. As in the PSUQ, instruction on the adapted questionnaire requires a participant to give a rating between 0 and 4 to each of the herbal remedies according to the degree of their use of the herbal mixture. "never used it" (0), "have not used it more than two times" (1), "uses it less than three times in one week" (2), "uses it more than three times in one week" (3), and "used it frequently in the past" (4). Thus, the adapted questionnaire measures frequency of use of herbal remedies on a scale of four degrees: The questionnaire received an average score of 86% for content validity assessed by three judges and an internal consistency reliability index of 0.67.

Procedure, design and data analysis

Data were collected from artisans in their workshops. The researchers explained the purpose of the study to the workshop-owners; if a shop-owner expressed willingness to participate in the study, he signed the informed consent form. Permission to test an apprentice-artisan was given by both the apprentice's master and the apprentice himself. The researchers were standby to answer any participant's question relating to the questionnaire. The conduct of this research was approved by the Ethics Board, Department of Psychology, University of Nigeria, Nuskka. The design of the study was a cross-sectional research in which data were collected from participants once. Descriptive statistics was used to show prevalence of use of the various kinds of herbal remedies among the sample.

Study 2

Study area

The motor-mechanic village in Nsukka, which is also known as "site" by the inhabitants of the city, was the area covered in the study. The motor-mechanic village is a very expansive area, it is estimated to be occupying a land mass of about seven thousand square meters. Although Nsukka as a town has been described elsewhere as a slow-paced environment that is devoid of the usual hustle and bustle of fast-paced cities (Mefoh, 2007), the Nsukka motor-mechanic village is usually a cesspool of daily activities and noise. Aside the motor mechanic workshops and those of allied occupations, the motor-mechanic village is also where the building materials and the motor spare-parts markets of the town are located. These markets make the Nsukka mechanic village to bubble with activities beginning every Monday morning to Saturday evening. Consequently, the mechanic village has also become a good spot for petty businesses to thrive. Prominent among people who hawk things at the mechanic village are young girls and middle-aged women, who usually balance a bowl of prepared herbal mixtures on their heads and traverse the length and breadth of the mechanic village on daily basis to dispense some quantities of prepared herbal remedies to customers needing them.

Participants and interview

Twelve artisans participated in this qualitative research to examine why artisans use prepared herbal remedies. Because unobtrusive observation of participants is likely to reveal more natural behavior than one in which participants

are aware of being observed (Kantowitz, Roediger, & Elmes, 1994), unobtrusive observation was adopted to recruit only artisans who were observed using herbal mixture and/or seen chatting or exchanging pleasantries with the sellers of the herbal mixtures. Those were the inclusion criteria. Thus, selected artisans were people who have some knowledge about the use of prepared herbal remedies. Participants were interviewed individually, the interview guide was developed to understand participants' points of view on why they use prepared herbal remedies instead of orthodox medicines. The duration of interview was between 15-20 minutes per artisan. Data obtained from the interview were analyzed and summarized to illustrate respondents' perception on the objective of interest.

RESULTS

Study 1

The frequency of use of prepared herbal remedies by artisans in Nsukka motor-mechanic village is shown on Table 1. The herbal remedy for pain is the most widely used herbal mixtures among the seven variants examined in the study. Out of 94 artisans who responded to the questionnaire, 75 participants (i.e., 79.79%) said they had used the herbal remedy for pain. Only 19 participants (20.21%) reported that they never used the herbal mixture. The other six herbal remedies were also in popular use by the artisans. The percentage use of the various herbal remedies (arranged in their order of prevalence) includes: herbal remedy for clearing impurities 77.66%; herbal remedy for malaria 72.34%; herbal remedy for typhoid 67.02%; herbal remedy for boasting sexual power 65.96%; herbal remedy for dysentery 50.00%; and herbal remedy for gonorrhea 34.04%.

Study 2

Personal motivations for use of herbal medicine

Interviewees believe that prepared herbal remedies actually works. They argue that plants were created for man and were put to good use before the white-man's medicine came to the shores of Nigeria. Thus, the efficacy of herbal remedy is one of the major reasons why some artisans make use of herbal medicines. One motor mechanic (54 years old) said:

> "Herbal remedy works better than orthodox medicine. My grandfather never took any 'Oyibo' (white man) medicine when he lived. I recalled as a young boy, when if anyone falls sick in our house, Akunne (that's my grandfather's name) would just cut some herbs from a nearby bush, cook them and gives the herbs to the person to drink. He usually drinks some himself and never falls sick. Akunne was very strong, he died at 96!"

Another artisan (a 43 year old Welder) has this to say:

> "You cannot compare herbal remedy with Oyibo medicine. I hear that some Oyibo medicine for pains cause ulcer. That was the reason I even stopped using them. Before, I use *'diclofenac'* brands, but not anymore. Prepared herbal medicine contains only natural ingredient, which has no artificial chemical and does not cause ulcer".

Table 1. Frequency of use of prepared herbal remedies

S/No	Degree of use of herbal remedies	Frequency	Per cent
1.	Herbal Remedy For Malaria		
	• Never used it	26	27.66
	• Have not used it more than two times	5	5.32
	• Uses it less than three times in one week	52	55.32
	• Uses it less more than 3 times in one week	8	8.51
	• Used it frequently in the past but has stopped	3	3.9
	• **Total**	**94**	**100.0**
2	Herbal Remedy For Typhoid Fever		
	• Never used it	31	32.98
	• Have not used it more than two times	14	14.89
	• Uses it less than 3 times in one week	36	38.30
	• Uses it more than 3 times in one week	3	3.19
	• Use it frequently in the past but has stopped	10	10.64
	• **Total**	**94**	**100.0**
3	Herbal Remedy For Cleaning Impurities (i.e., washing and setting)		
	• Never used it	21	22.34
	• Have not used it more than two times	26	27.66
	• Uses it less than 3 times in one week	15	15.96
	• Uses it more than 3 times in one week	26	27.66
	• Use it frequently in the past but has stopped	6	6.38
	• **Total**	**94**	**100.0**
4	Herbal Remedy For Dysentery		
	• Never used it	47	50.00
	• Have not used it more than two times	8	8.51
	• Uses it less than 3 times in one week	5	5.82
	• Uses it more than 3 times in one week	11	11.70
	• Use it frequently in the past but has stopped	23	24.47
	• **Total**	**94**	**100.0**
5	Herbal Remedy For Body Pain		
	• Have not used it more than two times	19	20.21
	• Uses it less than 3 times in one week	11	11.70
	• Uses it more than 3 times in one week	17	18.09
	• Used it frequently in the past but has stopped	47	50.00
	• **Total**	**94**	**100.0**
6	Herbal Remedy For Gonorrhea		
	• Never used it	62	65.96
	• Have not used it more than two times	19	20.21
	• Uses it more than 3 times in one week	9	9.57
	• Used it frequently in the past but has stooped	4	4.26
	• **Total**	**94**	**100.0**
7	Herbal Remedy To Increase Sexual Potency (i.e., manpower)		
	• Never used it	32	34.04
	• Have not used it not more than two times	15	15.96
	• Uses it less than 3 times in one week	11	11.70
	• Uses it more than 3 times in one week	15	15.96
	• Uses it frequently in the past, but has stopped	21	22.34
	• **Total**	**94**	**100.0**

One Auto electrician (47 year old) who said he could not stop the use of herbal mixtures pointed out that he is entrapped by it. He mentioned, “Washing and

Setting" and "Manpower" as his favourite herbal mixtures because these are soaked in strong alcohol. He said:

> "Do not be deceived by all these testimonials that herbal medicine is this or that it is that. Those are all lies! All of us drink herbal mixtures because of its alcoholic concentration. People who still drink beer are people who are yet to discover the quality of herbal remedies. Beer only intoxicates; but *"agbo"* (street name for prepared herbal remedies) intoxicates, keeps one healthy, and is even cheaper than beer!"

Another Panel-beater (aged 26) added:

> "Herbal medicine is very good, I take it every evening. I do hard work and any day I fail to take herbal medicine in the evening; I would wake up the next morning feeling too weak that I would not be strong for the day's work."

Social/economic motivations for use of herbal remedies

Based on World Bank report, the scores of artisans in Nsukka motor-mechanic village can be regarded as low-and-middle income people (Gindling & Newhouse, 2013). Typically, parts of the social reality that the poor in Nigeria face are poor access to public services and infrastructure, unsanitary environmental surroundings, poor health, insecurity and social exclusion. These features have become worse in this present time of economic downturn, when people's purchasing power has been severely reduced. One respondent (28 years old Auto Electrician) puts it this way:

> "I take herbal medicine once in a while. Although I know that there could be some problems associated with it, but under Buhari's government, who has enough money to feed his family, talk less of making enough money to go to hospital?"

Another respondent (37 year old Vulcanizer) made a similar assertion. He said:

> "Herbal medicine is working for me. I cannot remember the last time I went to see a doctor. I cannot even afford it, even if I want to go. My brother, this country is hard"

The interviewees also see orthodox medicine to be in somewhat of competition with herbal medicine. One 37 year old mechanic said:

> "Herbal medicine is natural and there is no fear for overdose. Look at the Chinese; is it not herbal medicines that they use? Do they not look healthier and stronger than many Nigerians? Doctors in Nigeria usually complain that herbal medicines have no dose and they try to talk people out of its use. Rubbish! They are simply jealous. They know that many people who are patronizing herbal medicine were once their patients, and if care is not taking, they may lose them for good"

Some artisans complained about poor access to Medicare. They frown at certain bureaucracies in the hospitals, which make them pass through several harrowing experiences before a doctor could attend to their needs. One 35 year old panel beater complained that:

> "The way people are treated in the hospital was what pushed me into taking herbal medicines in the first place. If one goes to the hospital, the individual will waste the whole day there. The nurses will attend to their friends and relatives first; thereby disregarding the order that patients come to the hospital. One spends unnecessarily long hours in the hospital! By the time the person returns back to the shed (workshop), all his customers would have gone elsewhere; and as you know, we do not earn salary like the office people."

DISCUSSION

This study examined two objectives: the first was to describe the prevalence of use of prepared herbal remedy among artisans in Nsukka mechanic village; and the second was to determine why artisans use herbal mixtures (instead of orthodox medicines). In view of the first objective, descriptive analysis indicated that there is high use of prepared herbal remedies amongst the sample. More than half of the sample said they were either currently using one herbal remedy or another, or that they have used one sometime in the past. The only exception was the herbal remedy for the treatment of gonorrhea, which sixty-two per cent of the sample claimed they had never used before. The high prevalence or high use of prepared herbal remedy among the sample is consistent with literature, especially local literature (Akande, et al. 2012; Okafor, et al. 2019; Oluwadiya & Akinola, 2012), which maintained that the use of herbal remedy in Nigeria is generally rampant. This finding suggests that too many artisans are predisposed to using prepared herbal remedies. This may also be the trend in the general population, considering the ubiquity of middle-aged women hawking prepared herbal remedies in Nsukka town.

The second objective of the present research sought to determine why artisans use prepared herbal remedies. Data from the qualitative research yielded many varied responses, which were analyzed into themes to make sense of the interviewees' responses. The first theme relates to personal motivation. Many people use herbal remedies because it gives them fulfillment in terms of satisfying their needs for healthcare, while for some it satisfies their craving for alcohol. The other theme relates to social and/or economic motivation, which seems to suggest that artisans are drawn to herbal medicines due to poverty and poor treatment meted to them by hospital staff. The themes emanating from the responses of the respondents can be understood within the realm of the theory of self determination (Deci & Ryan, 2000), which functions on the assumption that individuals are innately motivated towards growth and health.

The present study, like other previous studies (Akande, et al. 2012; Okafor, et al. 2019; Oluwadiya & Akinola, 2012), have shown that the use of prepared herbal remedies is pervasive among artisans, commercial drivers, civil servants and so on. Some notable factors sustaining the use of herbal remedies by artisans, many of whom belonged to the income group World Bank (1996) describes as the 'poorest of the poor', are: they believe that prepared herbal remedies works, that they provide a cheaper means of consuming alcohol, and more importantly,

they believe that prepared herbal remedies are cheaper than orthodox medicines. One important alluring factor which pushes artisans to use herbal remedy is its alcohol content. Most prepared herbal remedies are garnished in alcohol and many artisans drink them as a way to attain some levels of intoxication. Thematic analysis of interviewees responses show that aside alcohol, other factors which have helped prepared herbal remedies to stay in demand include: believe in the efficacy of herbal remedies, poverty, and poor attitude of health workers. The scourge of poverty is real in Nigeria (World Bank, 1996); since the reduction in international oil price, there has been a dramatic increase in the incidence and depth of poverty in the country. The economic situation inevitably influences the choices people make in terms of healthcare needs.

Limitations and suggestions for future research

Although this study makes an important contribution to knowledge, the use of cross-sectional design, which allows data to be collected from participants only once, limits the explanatory power of the findings. Cross-sectional studies are economical with respect to time and resources, but they are also relatively simple (easy too) to provide robust evidence about the direction of cause and effect relationships. The researchers therefore, propose that future research on the use and/or motivation for use of prepared herbal remedies should adopt cross-lagged procedure, in which data are collected from participants over an extended period of time. This would help to establish the direction of cause and effect relationships between variables.

Conclusion and Recommendation

Every day, six days in a week, young-adult girls and middle-aged women hawk herbal remedies at the Nsukka motor-mechanic village. This observation led to the formulation of the two objectives examined in this research. The first objective was to determine the prevalence of use of prepared herbal remedy among Igbo artisans in Nsukka motor-mechanic village. That is, the study investigated whether the use of prepared herbal remedies was widespread among artisans or whether they are restricted to a specific few. The finding in respect to this objective revealed that the use of prepared herbal remedies was pervasive among the sample: all the variants of prepared herbal remedies were used by more than half of the artisans who participated in the study, with exception of the herbal remedy for gonorrhea, which about thirty-four percent of the artisans have used. The second objective of the study was to determine why artisans use prepared herbal remedies instead of the readily available orthodox medicines. Analysis of interviewees' responses showed that craving for alcohol, poverty, believe in the efficacy of herbal remedies and ill-treatment of artisans by health workers were some of the factors why artisans prefer and use prepared herbal remedies.

This study began with the premise that prepared herbal remedies are soaked in alcohol, and like plain alcohol, may damage vital organs in the body and/or cause other psycho-social problems that might affect one's psychological wellbeing. Thus, the finding relating to craving for alcohol content in prepared herbal remedies appears interesting to the purpose of this study. Previous literature have shown that using alcohol encourage users to behave

aggressively and drive less courteously (Mefoh, et al. 2019; Mefoh, et al. 2013), lead to problems at workplace (Ejikeme, 2004), and was associated to engaging in risky behaviours and quarrelling (Tumwesigye & Kasirye, 2005). Following the social problems associated with alcohol use, the researchers recommend or call on public-spirited individuals and non-governmental organizations (NGOs) in and around Nsukka to organize psycho-educational programmes to educate artisans about the possible psycho-medical problems that are associated with frequent use of alcohol. And it really does not matter whether alcohol was taken in plain form or was taken by deception (i.e., mixed in herbal remedies), the toxic effect remains the same.

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TRAMADOL ABUSE AND VALUE FOR LIFE AMONG YOUNG PERSONS: MODERATING EFFECTS OF MORAL IDENTITY

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ABSTRACT

Burgeoning research has begun to question what the actual value for life is among drug using individuals. Why do they engage in acts they know undermine the quality and length of their lives? Can the use of drugs be directly linked to lack of value for their lives? Or does the repeated use of drugs make them value less their lives? What if, regardless of their drug abuse, they had high levels of moral self and integrity? Would the pattern of results still be the same? Interested in finding this out, we employed the snowball technique to recruit young persons (n= 158, 75.95% males, M_{age}= 23 years) with differing levels of tramadol abuse, and obtained data regarding their self-reported value for life and moral identity. Results revealed significant associations between tramadol use, dimensions of moral identity and value for life such that as the level of tramadol abuse increased, value for life decreased; while as moral integrity and moral self increased, value for life also increased. Moderation analysis further showed a buffering effect of moral self and integrity on the relationship of tramadol use and value for life. These findings question our already existing drug use policies, anti-drug use campaigns and intervention strategies. Will our efforts at combatting drug use become more effective if we dwell more on building moral identities in individuals rather than incarcerating them? We suggest in-depth investigation to further explore the roles of morality in the non-medical use of prescription drugs.

Keywords: Criminalization, Morality, Non-medical, Policy, Tramadol, Value for life

INTRODUCTION

Valuing life entails a wide range of actions which are geared towards the preservation of life, at least to the ability of the individual. Specifically, to value one's life means such an individual deliberately and consciously disengages in activities

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that undermine the length and quality of his/her life and at the same time engages in activities that strengthen the length and quality of his or her life (Iorfa, Ifeagwazi & Chukwuorji, 2019). The question of what makes individuals display low value for life by engaging in health risk behaviours (health-related actions which show less or no value for life) has remained an age long one. Asides sexual risk behaviours, the other most researched health risk behaviour is drug use. Researchers have examined this across various disciplines and they all seem to agree that a wide range of correlates of health risk behaviours exist. For instance, a longitudinal research by Ievers-Landis et al. (2015) highlighted older age, male sex, non-Hispanic white race-ethnicity, lower grades, more depressive symptoms, and stressful life events as prominent correlates of health risk behaviours. Hale and Viner (2016) found out that having friends over often, being out with friends often, being bullied, living in single-parent households, not getting along with parents, etc., were significant correlates of health risk behaviours as well. These show that possible reasons and situations which predispose adolescents to the use of drugs and consequently antisocial behaviours may be on a continuum and range from personal to external factors (Nnadozie, Iorfa & Ifebigh, 2018). And therefore may seem to suggest that to wholesomely combat drug abuse, an integrative approach which incorporates personal and external factors needs to be advanced. However, while the individual may have control of the internal factors, external factors are often a challenge and remain outside the reach of the individual. Thus making it an endless cycle from abuse to rehabilitation and relapse.

While the control of external factors may be beyond the reach of the individual, certain factors still revolve around what the individual can control within his/her psychological resources. We opine therefore that value for life may explain some underlying reasons why this may be so. We opine also that it may be a hasty and unproven generalization to conclude that individuals abusing drugs have low value for life and as such we question; do individuals who engage in drug abuse have value for their lives at all? Or is it the other way round that prolonged abuse of drugs has depleted their value for life? Or is there no relationship at all between drug abuse and value for life?

The psychological study of value for life is relatively new and has based its initial empirical investigations on violence and aggression (see Iorfa, Ifeagwazi & Chukwuorji, 2019). However, it is logical to reason that continued and prolonged use of illicit drugs may have associations with the level of value drug users place on their lives and consequently the lives of others, especially when they are aware of the consequences of such drugs. Taking Tramadol for an example, a wide range of studies have shown that prolonged use of tramadol may have adverse effects on adolescents and other users in general such as sexual dysfunctions (Abdel-Hamid, Anderson, Waldinger & Anis, 2015), trauma, seizures and consequent injuries (Farajidana, Hassanian-Moghaddam, Zamani & Sanaei-Zadeh, 2012) which may occur in both overdose and within therapeutic dose range, miosis and a wide range of subjective effects (Zacny, 2005), serotonin syndrome (Beakley, Kaye & Kaye, 2015) and in extreme cases, coma and sometimes death especially in under aged persons (Anderson, 2018; Chukwuorji,

Nweke, Iorfa, Lloyd, Effiong, & Ndukaihe, 2020).

Tramadol is a synthetic analgesic (pain reliever). Researchers and doctors have not reported the exact mechanism of action of tramadol, but it is similar to morphine. Like morphine, tramadol binds to receptors in the brain (narcotic or opioid receptors) that are important for transmitting the sensation of pain from throughout the body to the brain and by so doing, relieves the taker of pain. When adolescents abuse tramadol, they do so for a wide range of reasons which mostly revolve around keeling pain and feeling good. However, it should be noted that the perception of good feeling that leads to abuse and misuse of tramadol can lead to long term consequences such as weakness, sleepiness, insomnia, panic attacks and other symptoms of opioid dependence. In some cases, overdose of tramadol may lead to difficulty in breathing and even death (Elliason, Sandow, Asechaab, Kpangpkari & Asiaktiwen, 2018). Addicts are aware of this, however, continued use of tramadol is on the rise and reasons may not be restricted to theories of addiction alone. We hope that findings from this study will culminate into a more concrete theory of drug use and value for life.

In Nigeria, a report on the National Survey of Drug Use (UNODC, 2019) suggested that approximately 4.6 million people abused pharmaceutical opioids of which tramadol was listed. This number doesn't seem to be decreasing because even though the government has placed sanctions on the importation or production and sale of some of these commonly abused drugs (e.g. codeine and tramadol), the long term effects of exposure to and abuse of these drugs are still evident in the Nigerian society (Iorfa, Ugwu, Ifeagwazi & Chukwuorji, 2018). It is more troubling also because general levels of violence in the country are rising and it is possible that harm to others due to the intake of tramadol (and other psychoactive substances) may be rising as well. The Nigerian Drug Law Enforcement Agency (NDLEA) in November 2019 stated that it had arrested a police man and drug trafficker who were supplying 59kg worth of Tramadol to Boko Haram insurgents in Gwoza, Borno State (Vanguard, 2019). Since these insurgents are known for their notorious lack of value for life, there is reason to believe that the abuse of tramadol may further make engagement in these acts easier for them and that tramadol may be implicated in value for life. Thus, researchers, scientists, the government and policy makers may not have to battle with the effects of tramadol use on the user alone but its adverse effects on ordinary persons (non-abusers) and the society at large.

Because most people who would value life may do so based on their moral inclinations/morality, this study also sought to investigate the levels to which moral thoughts/cognitions (specifically moral identity) may influence people's value for life along their use of tramadol. Thus another important variable of interest which will also serve as a moderator in the present study is moral identity (self and integrity). To understand moral identity, it is important that we first look at the mother construct (moral cognitions) encompassing moral identity. And in defining moral cognitions as well, it is important to first lay a premise with morality. Morality involves right or wrong actions. The study of morality has focused on what one ought to do with reference to a given code of conduct (Casebeer,

2003). For absolutists, there is a single code according to which all people should live. For relativists, there are many different codes relevant to different societies or individuals. In both cases, morality is essentially social and depends upon communication and relationships between individuals. This therefore means that there may be different moralities worldwide.

However, according to Gert (2005), people tend to think of morality as normative, but it is often used as a descriptive term for the distinct standards that different groups of people use to judge behaviour. Thus an action may be seen as moral provided it follows prevailing moral codes of a specific group. Further, an action is good (moral) if more people benefit than are harmed. However, Colby and Kohlberg (1987) stated that the morality of an action is determined by the actor's interpretation and in this context therefore, morality may not be a definition of right and wrong but may however refer to how closely individuals follow their own ethical ideas. From this perspective, over-the-counter/non-medical use of prescription medication such as tramadol may be considered moral by individuals even when there are national laws prohibiting it. At such points, the target of awareness may have to be individuals' moral cognitions and specifically, identity. According to Black (2012), moral cognition refers to all the conscious and unconscious mental processes that determine whether a given action is right or wrong according to the prevailing moral paradigm. The moral paradigm mostly outlined by researchers revolves around the basic precept of avoiding harm to other persons within the community (Graham, Nosek, Haidt, Iyer, Koleva, & Ditto, 2010). Therefore, owing to the argument put forward by Graham et al. (2010), we postulate that individuals, who abuse tramadol but have a high sense of morality may (because they desire to avoid harm to others), value life more highly than those who have a low sense of moral identity.

Black (2012) accordingly opined that moral cognitions are made up of four components; Responsibility, Identity, Cognition, and Community and subsequently developed the Moral Cognitions Inventory which focuses on responsibility and identity as aspects of cognition. In this study, we focus mainly on identity. Moral identity conceptualizes the level of importance individuals give to their moral principles and to acting accordingly. Moral identity has two subdomains of moral self and moral integrity. The moral self simply put, is how important morality is to an individual's self-concept while integrity refers to how important it is to act according to moral principles. Moral behaviour outspans the question of knowing what should be done. Knowing that something is morally right or wrong does not always result in corresponding action, neither does the intention not to do wrong always correspond to right actions. Blasi (1983) suggested that the sense of moral self is a primary motivating force for moral behaviour: once the necessary judgment of what is morally good is made, individuals want to do so in order to maintain self-consistency (Blasi, 1983) and this concurrence of thought (judgment) and action is seen as integrity. And according to Monin and Jordan (2009) integrity is seen as a social virtue. Thus an individual may be seen as having moral integrity when they judge and act in a morally good way. In line with our earlier postulations therefore, even though there is no guarantee

that cognitions may eventually translate into actions, we further hypothesize that persons abusing tramadol, but who have adaptive moral cognitions, may value life more than their counterparts with more maladaptive moral cognitive patterns.

The choice of young persons as the key population for this study is due to the fact that the abuse of tramadol and other substances has been shown to be peak among them (UNODC, 2019). And also that at this stage, issues of morality become a serious matter of conflict where the young persons struggle with identity crisis, knowing and accepting what is wrong or right and either inclining to the warnings of significant authorities or yielding to the persuasions of peers.

METHOD

Participants and procedure

A total of 158 (75.95% males, M_{age}= 23 years) persons who identified as using tramadol were recruited using snowball technique. The first participant, after being told about the study and how confidential their identity and responses would be treated, agreed to identify others whom he had either bought tramadol from/for and whom he knew used the drug quite frequently. These persons then recruited others they also knew into the study. Some whom the researchers could not have access to, responded to the questionnaires, took pictures of them and returned via WhatsApp through the participants who recruited them. For participants whom the researchers had contact with, average response time to the questionnaire was 7 minutes.

Instruments

Moral Cognitions Inventory (Black & Reynolds, 2016).

The Moral Identity domain of the Moral Cognitions Inventory was used in this study to assess and evaluate participants' patterns of moral thoughts and cognitions. The moral identity domain is broken down into two subdomains of moral integrity (MIn) and moral self (MS). A refined version of the moral identity domain (Black & Reynolds, 2016) offers 12 items for the MIn which are responded to on a five point Likert-type scale with response options ranging from strongly agree (1) to strongly disagree (5). Participants are instructed to read through the items (being statements) of how people feel and behave and indicate their level of agreement with each statement as honestly as possible. Sample items include "*It is ok to do something you know is wrong if the rewards for doing it are great*", "*There is no point in going out of my way to do something good if no one is around to appreciate it*", "*If people treat me badly, I will treat them in the same manner*", etc. The MS subdomain as reflected in Black and Reynolds (2016) consists of 8 items responded to on a five-point Likert-type scale. Response options range from strongly disagree (1) to strongly agree (5). Instructions are similar to the MIn subdomain. Sample items include "*I want other people to know they can rely on me*", "*I always act in ways that do the most good and least harm to other people*", "*Once I've made up my mind about what is the right thing to do, I make sure I do it*", etc. The first eight items correspond to the MS subdomain while the other 12 correspond to MI (reverse code to be in direction of greater integrity). In an earlier version of

the scale, Black (2012) reported Chronbach's alpha reliability coefficients for the MIn and MS to be α=.87 and α=.82 respectively. Test retest reliability at 8 to 14 days of r(97) = .90 and .77 for the MIn and MS subdomains respectively. Black and Reynolds (2016) reported Chronbach's alpha reliability coefficients for the MIn and MS to be α=.87 and α=.84 respectively. In the present study, we found Chronbach's alpha reliability coefficients for the MIn and MS to be α=.88 and α=.83 respectively.

Value for Life Scale (Iorfa, Ifeagwazi & Chukwuorji, 2019).

The Value for Life Scale (VfLS) was used to evaluate and assess participants reported levels of value for life. It is a 30-item instrument encompassing five broad domains of value for one's life, value for the life of others, value for the life of plants, value for the life of animals and value for the life after death. Each of the five domains is made up of 6 items and responded to on a five-point Likert type scale ranging from Absolutely true of me (4); Mostly true of me (3); Can't say true or false (2); Mostly untrue (1) and Absolutely untrue of me (0). Participants are instructed to read 30 ordinary statements that may correspond to how they feel and think sometimes and to please respond to them accordingly and based on how true or untrue they are to them. Sample items on the value for one's life domain include "*I think if there is anyone who should be alive then it's me*", "*I can give my life to prove a point or fight for a cause*", "*My life is very important to me*", etc. Sample items on the value for the life of others domain include "*I don't think any individual should be denied the right to life*", "*When I look around me, I can identify people who are better off dead*", "*I don't mind seeing bloodshed*", etc. Sample items on the value for the life of plants domain include "*Plants are important to me*", "*I don't care if trees are all cut down*", "*I plant flowers and take time to nurture them to life*", etc. Sample items on the value for the life of animals domain include "*I feel pity when I see animals in pain*", "*I think laws prohibiting killing of animals should be scrapped*", "*I am concerned about animal species that are going into extinction*", etc. Sample items on the life after death domain include "*I believe there is some form of life after death*", "*Most of my actions are motivated by thoughts of life after death*", "*I ensure not to engage in acts that will jeopardize a happy life for me after death*", etc. Twelve items (4,5,6 ,7,9,12,13,14,15,16,28,30) are negatively worded and therefore reversed scored. Subdomains are summed up individually to obtain an individual's score on each of the dimensions. A total (composite) score is possible and gives the individual's overall value for life. In the present study, the composite scores were used as sum values indicating individual's overall value for life. Iorfa, Ifeagwazi and Chukwuorji (2019) reported significant Cronbach's alpha reliability coefficients for the subscales of the VfLS ranging from .86 to .95. In the present study, we found a Cronbach's alpha reliability coefficients for the composite scale to be .91.

Tramadol Abuse.

To measure tramadol abuse, participants were asked to indicate the frequency of their intake of tramadol within the last 15 days. Response options ranged from 0= never, 1= less than five times, 2= more than 5 times but less than 10 times, 3= more than ten times but less than 15 times, and 4= 15 times and above.

Design/Statistics

Preliminary analyses were carried out using Pearson's correlations, while Hayes' PROCESS macro for SPSS was used to test the study's hypotheses.

RESULTS

Results from Table 1 show that value for life significantly negatively correlated with tramadol use but positively correlated with the dimensions of moral identity (integrity and self). Intercorrelations were also observed between moral integrity and moral self. Tramadol use was negatively correlated with moral integrity and self.

In Table 2, it was found that Tramadol abuse was significantly associated with value for life (B = -11.00, p = .00). This suggests that for every one unit rise in tramadol abuse, value for life decreased by 11 units. It was also found that moral integrity was significantly associated with value for life (B = .92, p = .00), again suggesting that for every one unit rise in moral integrity, value for life increased by .92. Moral self was also significantly associated with value for life (B = .77, p = .00) suggesting that for every unit increase in moral self, value for life young persons increased by .77 units. The interaction of tramadol use and moral integrity was significant (B = -1.24, p = .00), indicating that moral identity moderated the relationship between tramadol use and value for life. Slope of the interaction (see figure 1) indicated that tramadol use was not significantly associated with value for life among young persons with low moral integrity (B = 4.43, p = .10) but was highly negatively related to value for life among young persons with moderate (B = -11.01, p = .000) and high moral integrity (B = -26.45, p = .000). The model explained about 10.7%

Table 1. Means, Standard deviations and intercorrelations between study variables

Variables	M	SD	1	2	3	4	5
1. Age	23.00	3.89	1				
2. Value for Life	41.27	37.86	.12	1			
3. Tramadol use	2.33	.95	-.04	-.51**	1		
4. Moral integrity	22.59	12.50	-.13	.75**	-.46**	1	
5. Moral self	12.37	9.82	-.06	.75**	-.49**	.90**	1

*= *p<.05;* **= *p<.01*

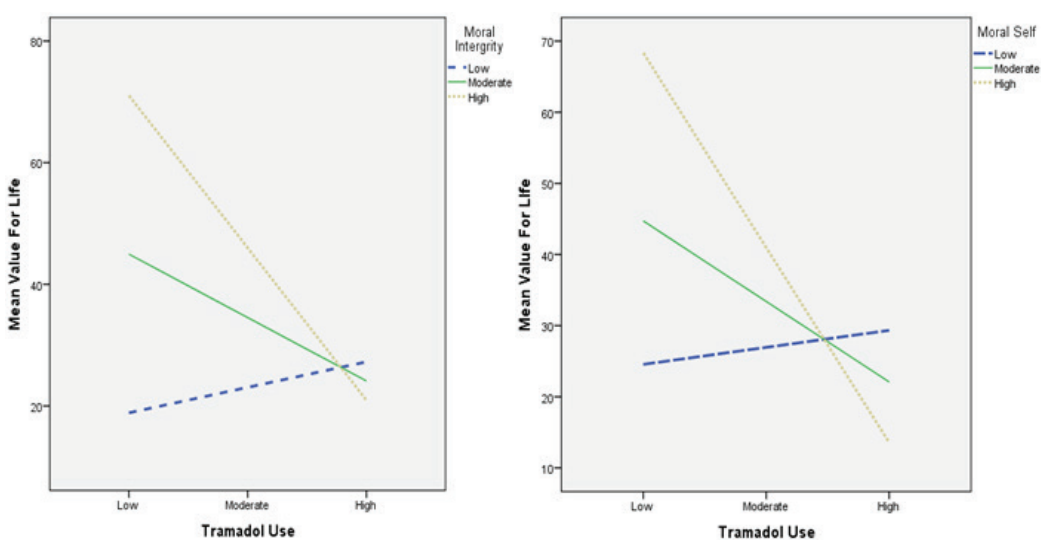
Table 2. Hayes PROCESS macro results for tramadol use predicting value for life with dimensions of moral identity (integrity and self) as moderators

Variable	Value for Life			
	B	t	*p*-level	95%CI
Tramadol Use	-11.00	-5.43	.000	[-15.01, -6.99]
Moral Integrity (MIn)	.92	4.42	.000	[.51, 1.32]
Moral Self (MS)	.77	2.34	.000	[.12, 1.42]
Tramadol Use X MIn	-1.24	-7.37	.000	[-1.10, -.90]
Tramadol Use X MS	-1.73	-6.75	.000	[-2.23, -1.22]

of the variance in value for life of young persons, R^2 = .1070, $F(1, 154)$ = 54.27, p = .000. The interaction of tramadol use and moral self was also significant (B = -1.73, p = .00), indicating that moral self also moderated the relationship between tramadol use and adolescents' value for life. Slope of the interaction (see figure 2) indicated that tramadol use was not significantly associated with value for life among young persons with low moral self (B = 2.53, p = .33) but was negatively related to value for life among young persons with moderate (B = -11.95, p = .000) and high moral self (B = -28.91, p = .000). The model explained about 9.5% of the variance in value for life, R^2 = .095, $F(1, 154)$ = 45.50, p = .000.

DISCUSSION

Our study investigated the moderating effects of moral identity on the relationship of tramadol abuse and value for life among young persons. Already, research has associated substance use in general with suicide ideation and behaviour (Breet, Goldstone & Banjes, 2018; Chukwuorji et al., 2020) which is an index of low value for one's life. Interestingly Zhang and Wu (2014) also established an association between use of specific illicit substances and suicide ideation. Specifically, Esang and Ahmed (2018) stated that opoid-related suicides have doubled in the last 15 years. Our finding that tramadol use is positively associated with low value for life confirms these studies. This finding may also mean that the increasing rate of tramadol abuse in some regions of the country and among some populations like young persons may be significant correlates of the increasing levels of interpersonal violence, crimes and suicides in such regions and among such populations. It would therefore go a long way to help, if the trajectories of substance (tramadol) abuse and its link to value for life are understood and interventions designed, specifically tailored to address



Figures 1&2. Interaction slopes showing the moderating effects of moral integrity and moral self on tramadol use and value for life

the effects of substance use (tramadol) on value for life. Thus, campaigns aimed at preventing drug use might employ the promotion of value for life among tramadol abusing persons. These campaigns may also help people avoid (or delay the initiation) of the use of psychoactive substances by laying emphasis on the effects of drug use on value for life. Among persons who have already initiated the use of substances, campaigns may be tailored to forestall the development of harmful use and or dependence also by emphasizing value for life.

More interestingly, our study found out that moral cognitions, specifically moral identity (self and integrity) moderated the relationship between tramadol use and value for life suggesting that among tramadol abusers, value for life was highest when moral integrity was high. This pattern of finding was replicated also for the moral self, albeit a bit lower. These findings agree with those of Abide, Richards and Ramsay (2001) who suggested that morality influences substance use and may form attitudes towards the use of substances. Put together, our findings also suggest the fact that independently, moral identity is associated with higher value for life among persons abusing tramadol and at the same time buffers the effect of tramadol abuse on value for life. These suggest that a high moral identity may mean that even in the presence of tramadol abuse, abusers may still value life. And if this is true, then it may become pertinent to revisit long existing theories and policies around drug use and abuse; and question how person-centered they have been. In other words, have these theories, laws and policies in any way taken into consideration the actual dynamics of the persons abusing drugs or are they put forward for the good of society at large, and often neglecting the situations of the persons engaging in the non-medical use of prescription drugs? Already, there are debates on the issues of drug use and morality and consequently, the criminalization of drug use and these must be taken into consideration in further actions on drug use in Nigeria.

The high and negative significant associations between tramadol use and value for life may mean that tramadol abusers are prone to suicidal ideations and inter-personal violence. However, this may not be interpreted without consideration of other dynamics peculiar to the drug abusing individual. As was seen, tramadol use may have a negative association with value for life but this association could be moderated and buffered in the presence of other factors. The integration of moral cognition into the drug use debate and literature will help researchers and policy makers understand why despite the many information available on the side effects of drug abuse, young persons still initiate and sustain it. Again, since conventions for health behaviours are often age-dependent, early health-risk behaviour, i.e. initiation of drug use may often come as a means of demonstrating maturity and independence and repudiating conventionality and the norm among young persons. The targets of authorities and campaigns/intervention strategies at this points should be geared towards the building and development of more adaptive moral cognitive patterns. At the long run, in the presence of more adaptive moral cognition over and above maladaptive patterns of moral cognition, drug users may reduce or completely withdraw from the use of illicit substances.

Hale and Vinder (2016) drawing on Jessor's "Problem Behaviour theory"

suggest that behaviours which are socially-defined as problematic or unconventional (not moral) are endorsed by young persons as a manifestation of disregard for such social conventions and that the tendency for problem behaviour arises based on psychosocial protective and risk factors, with protective factors decreasing the likelihood of problem behaviour and risk factors increasing the likelihood. Drawing from this theory also, we opine that if morality in the form of adaptive moral cognitions become recognized as valuable options (protective factor) in the battle against illicit drug use, perhaps better outcomes may be achieved; and if it will be, then more emphasis need to be placed on building more moral individuals than criminalizing drug use.

This research has its limitations. It is a cross-sectional survey and therefore cause and effects relationships may not be easily drawn. It also has focused only on the non-medical use of tramadol. However, the findings may serve to inform further and more detailed experimental studies in the area of drug use, morality and value for life. Since tramadol is a synthetic analgesic and operating like morphine and other narcotics, these findings may be generalizable across morphine and other similar narcotics. Most importantly, notwithstanding the limitations of this study, the links established between tramadol use and value for life serve to inform that higher levels of tramadol use are likely to be associated with low levels of value for life among persons abusing tramadol.

CONCLUSIONS

In summary, our findings agree with previous research. UNODC report had suggested that efforts to support the prevention and treatment of drug use also include providing people who use drugs with the necessary knowledge and skills to prevent overdoses (UNODC, 2019) and possibly stop the use. One necessary knowledge could be the awareness of the effects of tramadol use on value for life. A necessary skill would be teaching and training individuals on more adaptive forms of moral cognitions. Our findings show that restraint/self-control from drug use may better be achieved from internal belief rather than external control through sanctions, criminalization, threats and punishment. Thus as Abide, Richards and Ramsey (2001) stated, one way to discourage the use of substances is to encourage the belief in the wrongness in the use of substances and as Grayling (2016) also opined, criminalizing drug use only exacerbates the problems associated with drug use as well as the cost to society.

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NON-MEDICAL USE OF PHARMACEUTICAL DRUGS AND MOTIVATION FOR CHANGE AMONG STREET YOUTH IN KANO, NIGERIA

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ABSTRACT

Non-medical use of pharmaceutical drugs among the young Nigerian population is an increasing public health concern. There is a dire need for a robust understanding of the problem as well as factors affecting behaviour change. This study investigated factors influencing non-medical use of pharmaceutical drugs, consequences, and motivation to stop use among street youth in Kano, Nigeria. Twenty-nine street youth selected through the snowballing sampling technique were involved in focus group discussions. Participants aged between 18 and 29 years. Sensation seeking, mood-altering, confidence, and energy boost were upheld as the major reasons for drug use; while poor health outcomes, financial problems, and interpersonal dysfunction were the main consequences discussed by the focus group. Many of the participants indicated the intention to stop drug use but expressed concern about difficulties in accessing treatment. Preventive and psycho-social treatment measures for non-medical use of pharmaceutical drugs targeting this group should be made accessible and affordable.

Keywords: motivation for change, non-medical use, pharmaceutical drugs, street youth

INTRODUCTION

The problem of non-medical use of pharmaceutical drugs has become a prevailing phenomenon in contemporary society, and more disturbing is the rate of involvement of the young population in this damaging behaviour which poses a great threat to the entire society. This is because of the diverse psychological and social adverse effects and consequences linked to this phenomenon.

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It has been asserted that youth in Africa, use different kinds of psychotropic substances (UNODC, 2013). The West Africa Commission on Drugs (2014) affirmed that Nigeria is one of the countries that are mostly affected by the problem of consumption of and dependence on drugs. From the observation of Usman (2015), the rate of drug dependence is increasing among Nigerian youth because unlike in the past when the nation was only a route of drug-trafficking, drugs are now being produced and made available for consumption.

There is a changing pattern of drug use in favour of pharmaceutical drugs such as codeine, tramadol, and benzodiazepines among Nigerian youth (Ikoh, Smah, Okwanya, Clement & Aposhi, 2019; Nwoga, et al., 2019). According to United Nations Office on Drugs and Crime (UNODC, 2018), non-medical use of prescription opioids such as tramadol and codeine-containing cough syrup is the second most commonly used drug after cannabis among individuals aged between 15 and 64 years in Nigeria. Previous studies have also established the non-medical use of various pharmaceutical drugs among young Nigerians, especially the student population. For instance, in a study conducted by Onyencho et al., (2015), tramadol, rohypnol, diazepam, and codeine emerged among the top ten drugs being used by young Nigerians. Nwoga et al. (2019) also reported codeine-containing cough syrup and tramadol among the top five abused drugs by young persons in Nigeria. The high rate of non-medical use of pharmaceutical drugs in Kano was highlighted in the UNODC (2018) report which showed that the overall prevalence of drug use in Kano was high (16 – 20%) compared with many other states.

Regardless of the kind of drug or why it is used, many grave consequences are undoubtedly associated with drug use. For instance, drug abuse constitutes one of the most outstanding socio-psychological hazards that can easily wreck one's personal, family and social life (Massah et al., 2015). A person using drugs faces several consequences like health challenges, reduced productivity, and problems in interpersonal relationships, accidents and sometimes death among other consequences. Family members are distressed by different kinds of problems the user manifests, and are burdened by having to care for the person. Drug use by a family member may lead to family dysfunction and disintegration. Akanbi and Ajiboye (2014) affirmed that drug use is associated with family breakdowns; violence and destruction; child abuse; sexual abuse; wife abuse; disrespect and breakdown of law and order in families and society.

In a similar vein, the community and nation are troubled by the problem of drug use. Criminal acts and violence, vandalism, theft and robbery, killings and unleashing of terror are often perpetrated by young drug-abusing individuals (Ayodele, Adeleke & Gandonu, 2018; Essien, Inyang, James & Emeh, 2016; Odok & Ojedokun, 2017). Felson and Staff (2017) further posited that a significant number of deaths from accidents and violent crimes are linked with activities of persons under the influence of drugs.

Evidence from a review of previous findings shows an increasing number of young people engaging in drug use, particularly non-medical use of pharmaceutical drugs. The phenomenon, if not properly addressed, leads to serious cases of substance use disorders. Non-medical

use of pharmaceutical drugs (especially opiods) is known to cause the greatest negative health impact (UNODC, 2017). Furthermore, numerous psycho-social problems and drug-induced accident and mortality among young people are also accounted for by drug use. Concerning the aforementioned, there is a need for continuous research to develop and deliver evidence-based and timely intervention targeting different groups of persons with drug use problems. This study, therefore, investigated factors influencing non-medical use of pharmaceutical drugs, consequences, and motivation to stop use among street youths in Kano, Nigeria.

1.1 Objectives

The study was guided by the following specific objectives:

- To explore factors influencing the non-medical use of pharmaceutical drugs among street youth in Kano, Nigeria.
- To investigate the consequences of non-medical use of pharmaceutical drugs among street youth in Kano, Nigeria.
- To investigate if the participants are motivated to stop their drug use behaviour.

METHOD

Design

This study was qualitative utilising focus group discussions to explore factors influencing non-medical use of pharmaceutical drugs, consequences, and motivation to change among street youths in Kano, Nigeria. This design was employed because it focuses on an in-depth exploration of the variables of concern as peculiar to the study participants. For the aim of this study, this design allows for a deep understanding of participants' opinions, thoughts, and feelings which are considered useful in making appropriate recommendations for designing intervention programme specifically targeting the needs of the population of the study.

Setting

The study location was Kano metropolis, the capital of Kano State, Nigeria. Kano is the commercial nerve centre of Northern Nigeria and is the second-largest city in Nigeria. Kano metropolis covers eight local government areas including Kano Municipal, Fagge, Dala, Gwale, Tarauni, Nasarawa, Ungogo, and Kumbotso. The study was conducted among street youths i.e. individuals that are not receiving any form of formal education but rather involved with street activities like hawking or unskilled vocation, or not engaged in any gainful activity or vocation located in Gwale and Ungogo Local Government Areas of Kano city.

Participants

The population for the qualitative phase of the study comprised of 29 (73.3% males) drug-using individuals whose ages ranged from 18 to 29 years. To enhance participation in the discussions, and in line with the study inclusion criteria, the participants were similar in certain demographic characteristics particularly in terms of educational qualification (none of the participants completed secondary school), living situation (79.3% of the participants indicated that they didn't live in a regular home setting with their family members, which was one of the criteria that made them

street youth), finally in terms of occupation and source of income, only 8 (27.5%) of the participants indicated they had an occupation and stable source of income. Furthermore, in terms of drug use profile, all the participants were poly-drug users. Four focus group discussions (FGD) were conducted among street youths using drugs. Two sets of the FGDs involved only male participants, while one involved only females, and the remaining one comprised of mixed genders. FGD 1 comprised of 6 male participants whose ages ranged from 21to 24 years. The second FGD comprised of 10 male participants whose ages ranged from 23 to 29 years. The third FGD comprised of 5 females whose ages ranged between 22 and 25 years. FGD 4 comprised of 5 males and 3 females, whose ages ranged between 18 and 23 years. It is important to note that only a few (29) participants were involved in this study because many persons that meet the study inclusion criteria declined participation when contacted because they were afraid of arrest by law enforcement agents.

Sampling

Sampling was also done in two stages. Gwale and Ungogo local government areas (LGAs) were randomly selected through balloting from the eight LGAs that made up Kano metropolis. Participants for the focus group discussions (FGD) were thereafter selected through snowballing sampling techniques from different locations (joints, football pitch, and shops) within Gwale and Ungogo local government of Kano city. The first participant that was recruited was identified at the drug unit of Kano State Hisbah Board[1], and after voluntarily consented to participate in the study, he assisted the researchers in recruiting his fellow drug users that met the study inclusion criteria.

Instrument

Tools for data collection during the focus group discussion are a semi-structured 8-item FGD question guide, tape recorder, paper, and pen. The FGD question guide was translated into Hausa language and validated by experts in the faculty of Education, Bayero University Kano.

Procedure

Individuals who consented voluntarily to participate in the study were asked to complete the research questionnaire for the cross-sectional survey, and those involved in qualitative study also consented voluntarily to participate in focus group discussions and in-depth interviews. Individuals who voluntarily consented to participate in the study were involved in the discussions. FGDs were conducted using a semi-structured guide. Demographic information of the participants was collected and open-ended questions were used. Discussions ranged between 42–90 minutes in length were conducted at the conference room of Kano Hisbah Command Board. The discussions were conducted in Hausa language, translated by native Hausa speakers who have a university education and were fluent in English language speaking, and transcribed verbatim. The anonymity of participants was

[1] The Kano Hisbah Board was established by the state government with the institutionalization of formerly local and privately maintained hisbah security units. The board supervises that Islamic security unit enforcing what is right and forbidding what is wrong on every Muslim.

ensured by identifying each participant by special code name.

Data Analysis

The qualitative data were subjected to analyses using the Atlas® Qualitative Statistical Software.

Ethical Consideration

Ethical approval was obtained from the Bayero University Kano (BUK) Committee, while approval was also gotten from Kano State Ministry of Education to conduct the study. The purpose and modality of the study were discussed with potential participants. A detailed statement of informed consent that contained the purpose, procedures, potential risk(s) (if any) and benefits of participating in the study was also explained to the participants. Individuals who consented voluntarily to participate in the study were involved as participants in the focus group discussions.

RESULTS

The report of the focus group discussions as obtainable from network analysis conducted with the use of Atlas software revealed the reasons why the participants engaged in non-medical use of pharmaceutical drugs and the consequences that follow, and intention to stop the use.

The results in Figure 1 showed the reasons for the non-medical use of pharmaceutical drugs among street youths in Kano, Nigeria. According to the participants, pharmaceutical drugs were being misused to derive several effects including satisfaction and pleasure, to avoid sadness, to gain confidence and to get sleep and energy. While the males use drugs to derive all the aforementioned effects, the females majorly use pharmaceuticals to derive satisfaction and pleasure and avoid sadness. Of all the listed reasons for drug non-medical use of pharmaceutical drugs

Objective 1. Reasons for non-medical use of pharmaceutical drugs

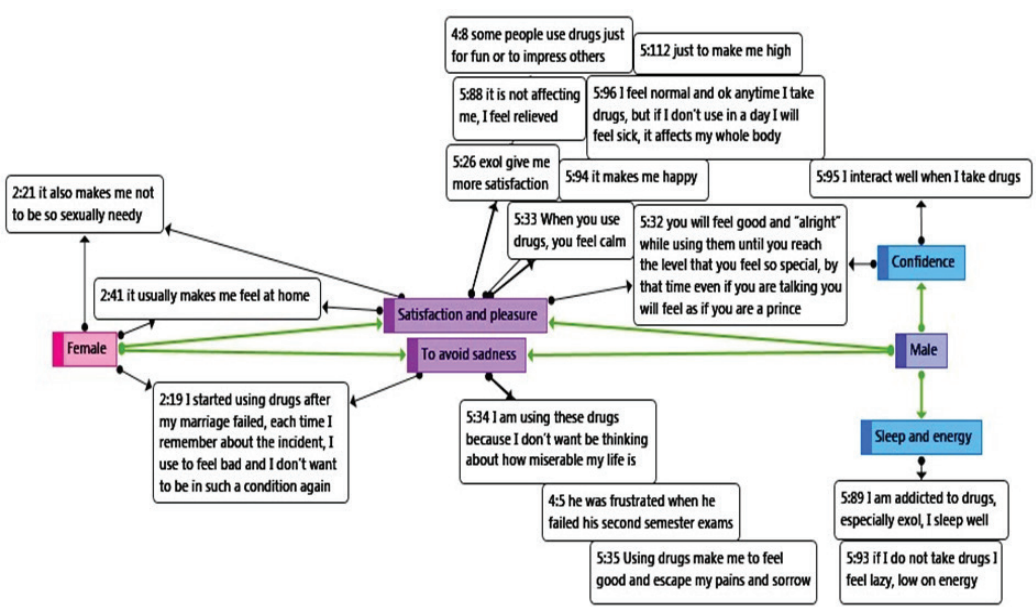

Figure 1. Reasons for non-medical use of pharmaceutical drugs among youths in Kano

Objective 2. Consequences of non-medical use of pharmaceutical drugs

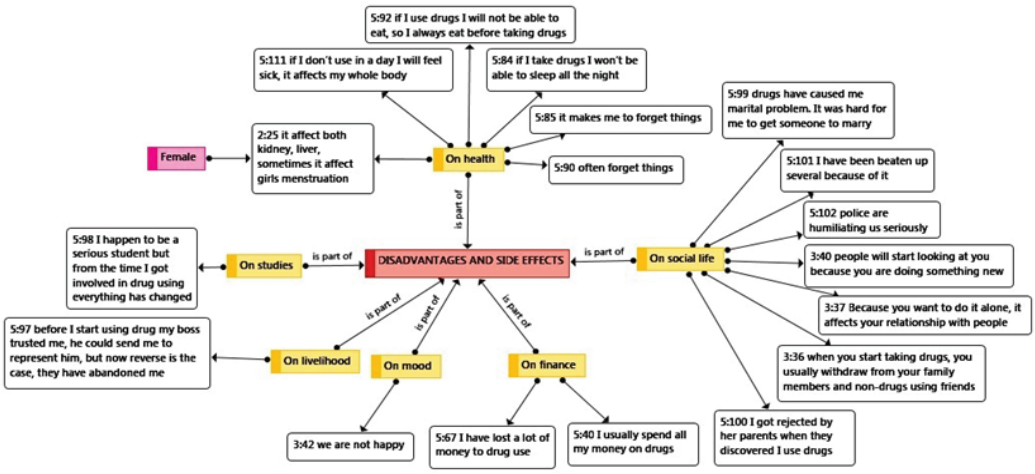

Figure 2. Consequences of non-medical use of pharmaceutical drugs

among the participants, to derive satisfaction and pleasure were more prominent, having 8 quotations.

The results in Figure 2 revealed the disadvantages and side effects associated with the non-medical use of pharmaceutical drugs as reported by the participants. Both males and females identified drugs as a major contributor to physical and mental ill-health. The findings also showed that disadvantaged and poor functioning in terms of finance, mood, social life, livelihood, and studies were attributed to non-medical use of pharmaceutical drugs among the respondents. The female participants emphasised the adverse effect of drug use on physical health conditions such as deterioration of body organs including the kidney, liver and sometimes disruption of the menstrual cycle and flow. Issues of withdrawal syndrome resulting from dependent use of pharmaceutical and other drugs also emerged prominently from the discussions. Also, participants expressed that in some instances, drug use leads to loss of appetite, sleep, and memory.

The results in Figure 3 showed the intention of the youths involved in the non-medical use of pharmaceutical drugs to stop using the drugs. The responses to this question were contradictory. While a few of the drug users, especially those who personally decided to start using, did not want to stop using drugs, many users intended to stop using drugs. They prayed and believed that one day, they would stop using drugs. The reason for intending to stop included the fact that a lot of money had gone into drugs. The females were beginning to realise that the amount spent on drugs would be more useful especially in caring for their children. Also, drug users want to stop because they are unhappy about their situation and desire to be normal and be free.

DISCUSSION

This study explored factors influencing non-medical use of pharmaceutical drugs, consequences, and motivation to

Objective 3. Intention to stop non-medical use of pharmaceutical drugs

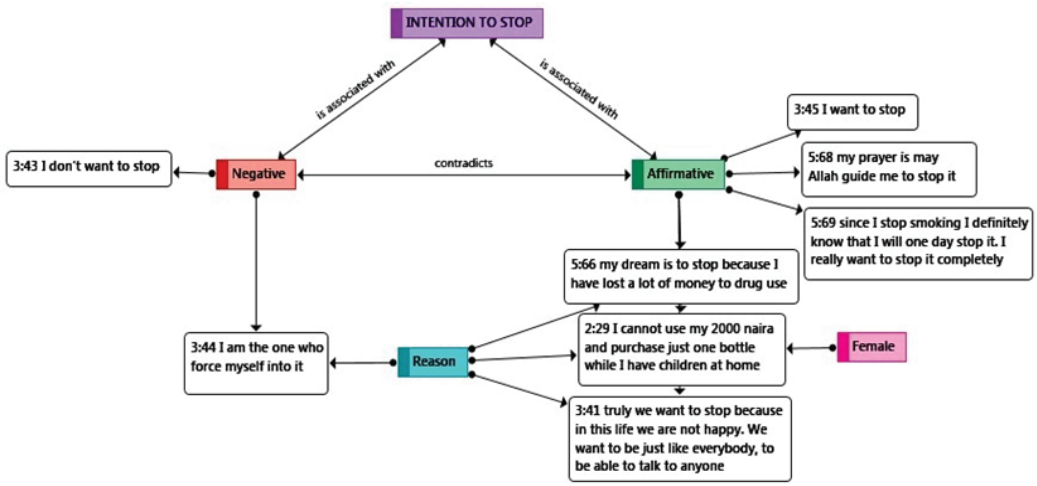

Figure 3. Intention to stop use

stop use among young street individuals in Kano metropolis. Results of the qualitative analysis done revealed that the participants reported involvement in the non-medical use of pharmaceutical drugs for diverse reasons. While there seems to be a consensus among both male and female participants that they use pharmaceutical drugs to derive pleasure and satisfaction as well as to feel good by altering their negative mood, most of the male participants also agreed that the drugs are also used to gain confidence and achieve good sleep and increased energy. These findings are in agreement with previous reports on factors influencing drug abuse among youths. For instance, Adenugba et al. (2018) affirmed that young people get involved in drug use because of their curiosity and inquisitiveness, while Odedokun et al. (2019) in their explanation for youth substance abuse reported parental and peer influence as key predicting factors.

Our finding on the consequences of non-medical use of pharmaceutical drugs among street youths in Kano as reported by the focus groups discussion participants revealed that many negative experiences and discomfort were attributed to abuse of pharmaceutical drugs. There was a consensus across groups and gender that non-medical use of pharmaceuticals has a serious adverse effect on both physical and mental health. Some of the participants reported that their drug involvement often leads to poor sleep and hygiene, while others indicated that they have experienced memory loss and lack of concentration as a result of their drug use. Also, the participants agreed that the non-medical use of pharmaceutical drugs can lead to serious health conditions such as kidney and liver infections. Massah et al. (2015) had previously asserted that drug use is strongly associated with socio-psychological hazards leading to the destruction of personal, family and social life. In a similar vein, Ayodele et al. (2018) and Felson, et al. (2017) supported the findings of this study in their reports that drug use among youths attracts many

consequences including criminal acts, violence, and deaths.

The adverse effects of drug use on the social life of the participants were expressed in terms of difficulty in holding intimate relationships and failure in courtship and marriage. It was further expressed that drug use often causes strain in interpersonal relationships as a result of withdrawal from previous friends and problems with family members and close relations, rejection by parents and loved ones. Findings from the discussion also indicated that the participants usually have problems with the law enforcement agencies and reported issues of being at the receiving end of derogatory attitude and behavior as well as humiliation from the police.

Financially, there was a consensus among the participants that a lot of financial resources are being expended on drug use. In some instances, apart from spending all they had on drugs, the respondents indicated they go the extra mile like cheating, lying and stealing to raise money to fund their drug use. In this regard, their standard of living is drastically affected as some even lose their source of livelihood because of drug use. While some of the respondents also stated that they could not complete formal education, others reported that they have lost the trust of their superiors and co-workers as a result of their drug use behavior. The participants expressed unhappiness about this situation.

Finally, the findings of this study on respondents' motivation to stop pharmaceutical drug use non-medically showed that most of the participants indicated intention and willingness to stop. Although some of the members of the focus group discussions expressed some level of pessimism as they believe that it will be difficult for them to stop, the majority of them were optimistic that if assisted especially by the government making treatment facility accessible, they would be able to stop. One of the major reasons why the participants expressed the intention to stop was a result of serious financial implications and loss that they have experienced due to their drug use. It was also found that the negative impact of the drugs on their family relationships and the inability to take responsibility in caring for their children and other loved ones is a major motivating factor, especially for female users to stop. Generally, the respondents felt sober and indicated their unhappiness about their drug use, hence, desire to stop and pick up their lives again and live a free and happy life.

Limitation of the Study

Despite the contributions of this study, it is important to point out some limitations of the study. First, being a qualitative study conducted among a few purposively selected participants, the external validity in terms of the extent to which the findings of the study can be generalized to the population study is limited. In line with the first identified limitation of the study, only a few members (29) of the study population were sampled for this study. The inability to sample a larger participant was as a result of the high level of a crackdown on drug users in Kano by law enforcement agents following the BBC report of the high prevalence of pharmaceutical drug use in Kano shortly before the commencement of data collection for this study. The fear of arrest and prosecution made it difficult to access persons that meet the inclusion criteria for this study. Third, the absolute validity of the

responses of participants during discussions could not be ascertained due to the perceived influence of the presence of the researchers. This is considered a threat to the internal validity of the study. Finally, participants were not objectively screened for any co-occurring mental health condition which could influence the mental status of the participants during data collection. Nevertheless, the data collected from the discussions are very valuable as they reflect the opinion, feeling, and experiences of the participants about the variables of concern. Also, making participation in the study voluntary and a conducive environment guarantees the quality of the data collected.

CONCLUSION

The increasing rate of non-medical use of pharmaceutical drugs and associated consequences is considered a major public health challenge. Many factors contribute to the involvement of youth in drug use. However, certain factors are peculiar to different groups of people considering unique attributes that define groups. As such, there is a pressing need for understanding specific factors that influence drug use among the different populations to ensure that evidence-based and appropriate intervention is designed and delivered to them. In this study, factors influencing the non-medical use of pharmaceutical drugs among street youth in Kano, Nigeria were revealed from the results of focus group discussions conducted. Also, different forms of negative consequences being experienced as a result of the non-medical use of pharmaceutical drugs by street youths emerged from the findings of this study. Finally, our findings showed that many of the street youths involved in the non-medical use of pharmaceutical drugs have the intention to stop and are open to behaviour change should they have the opportunity to receive treatment.

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