

Alcohol use dynamics and mitigation among adolescents in rural Kenya

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Abstract: Alcohol use has remained a critical problem among adolescents in Kenya. The use is conceptualized as a behavior which results from the interplay between the social-economic environment and personal factors. The purpose of the study was to assess the prevalence, predictors and alleviation of alcohol use among adolescents in rural Nyeri, Kenya. The study was a quasi-experimental quantitative study in which purposive and simple random sampling were used to select participants (n=1038) from eight county administrative units. A self-administered questionnaire was employed to collect data at baseline and endline after six months. Descriptive statistics were applied to summarize categorical and continuous variables while Odds Ratio (OR) and 95% Confidence Interval (CI) brought out the estimated strength of association between independent and the dependent variables. Effectiveness of the mitigation strategy applied was assessed after six months with reference to the baseline. 48.6% of the participants indicated having used alcohol in their lifetime, with 34.7% reporting alcohol consumption in the last one month. Seven independent predictors of alcohol use among the participants were identified using binary logistic regression at $P < 0.05$. Application of five life skills had significant protective effect on alcohol use (OR=0.36; 95% CI: 0.26 – 0.48; $p=0.001$) whereby a student enrolled in the experimental group was 64% less likely to use alcohol compared to one in the control group. Life skills were therefore found to be effective in empowering adolescents to develop safe and healthy behavior with regard to alcohol use reduction.

Key words: Alcohol use, Adolescents, Mitigation.

1. Introduction

Alcohol is the most commonly used and abused drug worldwide [1]. This is not surprising since the history of alcoholic beverages is linked to the history of mankind [2]. Historical evidence shows that alcohol consumption dates back to 8000 years and that drunkenness has been widespread over history including biblical times of Noah and Lot [3]. With such a long history and

widespread use, it is surprising that not much is known on what kinds of influences alcohol could have had on human civilizations throughout the years. The use has differed dramatically over time and across cultures in terms of accepted practices, beliefs about harm, and patterns of use [4]. Currently, most people in the world aged 15 years or older drink on average approximately six liters of pure alcohol per year. Probably, the main reason for alcohol consumption is it's a licit

substance and its ability to produce positive moods and stress-relieving effects. This paper presents an overview of the trends, predictors, and impact of life skills as mitigation for alcohol use reduction and prevention among school going adolescents in rural Kenya. The paper also discusses facts about adolescents and alcohol, the methodology, key findings and conclusions after the intervention.

2. Statement of the Problem

According to Rickwood et al. (2005), alcohol and other psychoactive substances have been used for many purposes ranging from medicinal to rituals and cultural ceremonies [5]. Literature reviews by UNODC (1996) showed that alcohol and drugs were used and consumed as part of the cultural traditions in precolonial Africa. The traditional rules and values of most African cultures strictly prescribed the circumstances under which alcohol and other intoxicants could be obtained, used and consumed. Drinking alcohol was generally the prerogative of the elders, and more often than not, the male elders. Restrictions were placed on youth, but both men and women elders were free to use it. Therefore alcohol use and abuse as a social problem did not exist because strong social cohesion acted as a mitigatory mechanism. The actual existence of alcohol abuse as a social problem may have been rare because of the strong social structures and strong kinship ties. This unfortunately is not the position in the twenty-first century when alcohol use and misuse cuts across age and culture. Consumption of alcohol and other psychoactive substances has departed from its traditional role and use and is now becoming a threat to the human health and the economy of the country. In fact, in the formulation of theories for understanding alcohol use and

creating the best prevention and intervention strategies are being mainstreamed.

The use of alcohol in Kenya can be traced as far back as precolonial days, when alcohol was used and consumed as part of traditions of the communities. Beer was and still is sacred in some communities since it is used as libations to appease the gods and spirits [6]. In most societies in Kenya fermented grain beers and palm wine were produced and consumed as the predominant alcoholic drinks [7]. Just as in other African cultures, the communities had virtues and values that strictly guided the use of alcohol. Distilled wines and other exotic substances have however emerged in the last century. No wonder according to the Kenya population situation analysis (2013), alcohol and drug use by adolescents is rampant and on the rise both in the rural and the urban set-ups.

According to the countrywide survey done in 2012 by the National Authority for the Campaign against Alcohol and Drug Abuse (NACADA), one in three students reported using one or more drugs. The survey indicated that alcohol was the most commonly used substance, with 36.3% of students reporting a lifetime use. Another survey report from Kenyan schools by the school campaign against drugs indicated that 26.5% of 14-16-year-olds of the respondents had had their first drink of alcohol by age 12. The findings therefore indicate that the dynamics of alcohol use in our context have changed and there is need to be concerned about the escalating rates of alcohol and drug use among the adolescent population in Kenyan schools.

Adolescence is a time of rapid physiological, psychological and social development, and also a key period for the adoption of alcohol use [8]. The strategies that have been put in place by the government and

other stakeholders seem not to have been effective in empowering adolescents to say “no” to substance use. Regrettably, the awareness of adverse consequences of psychoactive substance use does not seem to deter the school-going adolescents from the risky behavior. Social influences may account for initiation of and experimental alcohol use. Whereas a good family environment, positive self-esteem, and good social skills among peer groups have been shown to have a buffering effect for initiation of alcohol use and to be connected with a healthy lifestyle, intrinsic empowerment of adolescent may give the solution to the alcohol-use behavior.

This study employed life skills training as a mitigating strategy for reducing substance use among high school students in rural Nyeri County, Kenya. Life skills have been seen to reduce adolescent substance use risk factors and augment protective factors. This eventually improved the adolescents’ self-concept, emotional and social stability which enabled them to cope with inter and intrapersonal challenges without “self-medicating” with psychoactive substances [9]. The five life skills that were enhanced were; self-awareness, decision making, problem solving, coping skills and drug refusal skills.

2.1 Problem Statement

The global drug survey report of 2014 as analyzed by Winstock (2014) indicated that most young people below age 30 had used alcohol, tobacco and cannabis in the previous year preceding the survey [10]. A survey in 17 counties in Kenya by NACADA (2012) showed a high use of alcohol and drugs by school going teenagers with alcohol being the most abused [11]. Specifically, 35.6% of 15-24-year-olds were reported to have used alcohol in the last one year (NACADA, 2012). Alcohol use has therefore remained an area of concern in both

rural and urban settings in Kenya. The age when adolescents start using alcohol is lowering to 10 years, according to the NACADA survey in 2012. The gravity of the problem was again highlighted in the wake of a crackdown on illicit brews from May 2015 through a presidential directive. There were disheartening stories of the effect of alcohol as well as drugs on young people and their families.

Availability and use of alcohol has been difficult to control since it is a socially accepted substance that is embedded in traditional and sociocultural contexts. The Kenya Government and other stake holders have put in place measures for supply suppression and accessibility limits for adolescents. The said strategies seem not have been effective in deterring adolescents from using alcohol. The adolescents need to be empowered with intrinsic drug resistant skills to be able to say “no” to alcohol even when availed in the environment.

Life skills have been applied as one of the effective strategies for prevention and control of alcohol use by adolescents in other parts of the world including the United States of America (USA) and 32 other countries [12]. Unfortunately the life skills education curriculum entrenched in the Kenyan education system has no empirical evidence of its effectiveness in alleviating the alcohol use behavior in high schools in Kenya. This study therefore aimed at assessing whether specific life skills when adapted to alcohol use would result in a reduction in the use among adolescents in schools in rural Nyeri County, Kenya.

3. Methods

A quasi-experimental design was adopted in the study. A quantitative method to assess and describe the impact of life skills

training on alcohol use reduction and prevention was used. This involved the use of pretest-posttest approach where the participants were assessed on the trend of substance use at baseline and endline. The study population involved adolescents aged between 13 and 22 years (n=1038) at baseline from public schools. Purposive sampling of administrative locations with random sampling of the specific schools in rural Nyeri County was done with n=468 assigned to the experimental group while n=570 assigned to the control group.

A self-administered questionnaire comprising of socio-demographic data was used at baseline together with the Global School-based Student Health Survey (GSSHS) questionnaire that was used both at baseline and endline for both the experimental and control groups. The alcohol and drugs modules from the GSSHS were adopted in this study. GSSHS had been used in a similar study in Kenya where the reliability coefficient was 0.798 using the Spearman-Brown prophecy formula [13]. A life skills training manual that was developed with ideas from the KIE curriculum (2008), Gilbert Botvin life skills training model (2009), the WHO (1997) [16] life skills education programme and the Drug Abuse Resistance Education (DARE) programme [17] was used to enhance life skills after it was validated by experts from two Kenyan universities and ratified by the Bioethics Board and the National Research Council.

Data collection involved a baseline survey (pretest) and a posttest assessment after six months of specific life skills training. Baseline assessment was on both the life-time and current (the previous 30 days) alcohol use among the participants. The endline assessment was on the current (the previous 30 days) alcohol use. The intervention was structured to fit a brief (short-term) mode

that took six months. The training for the experimental group commenced immediately after the baseline survey. Five life skills; self-awareness, problem solving, decision making, coping and drug refusal skills were applied for six months.

The life skills were specifically tailored towards alcohol use refusal. The skills were imparted through a combination of instruction, demonstrations, role plays, short video clips, behavior rehearsal, and extended practice in small groups. The life skills' training was intensively done for the first three months from the commencement of study. The participants were later allocated "accountability partners" who helped and supported in the application of acquired life skills and deterrence of alcohol use. The control group continued with the generic life skills lessons. Six months after the commencement of the intervention, selected questions in the alcohol, tobacco and drugs use modules from the Global School-based Health Survey Questionnaire (GSHS) tool were administered to the participants in both experimental (n=454) and control (n=556) schools to screen the current (within the previous 30 days) use of the substances.

4. Results

4.1 Background characteristics of the study participants

A total of 1038 participants were enrolled in to the study at baseline. The proportion of males was higher (62.1%) than females (37.9%) with a majority of participants aged 16 - 18 years (81.0%). Religious affiliation for most of the participants was Protestants (41.1%) followed by Pentecostal (28.0%) then Catholics (26.8%). Muslims and those of other religions comprised 4.1%. Almost all participants

(96.7%) indicated that their biological parents were alive although 52.5% indicated living with grandparents. Majority of the participants (68.3%) lived below average with respect to socio-economic status score. Upon probing the participants on substance use, 48.6% of all the participants (n=1038) indicated that they had used alcohol in their lifetime, with 34.7% of the participants reporting alcohol consumption in the last one month.

Slightly more than half the participants (53.8%) indicated that they ever saw parents or relatives using substances (alcohol, tobacco, drugs), with 78.2% of the participants reporting that they ever saw someone they knew using substances. The results also revealed that the proportion of alcohol use was significantly high among participants who perceived getting alcoholic drinks as fairly easy than those who thought it was difficult or impossible to get alcoholic drinks.

4.2 Factors associated with alcohol use among the study participants

Binary logistic regression was used to model alcohol use by using factors identified to be significant at $P < 0.05$ during bivariate analysis. Backward conditional method was specified with removal at $P < 0.05$. Nine independent predictors of alcohol use among the participants were identified, as presented in Table 2.

Males were significantly more likely to use alcohol (AOR=1.39; 95% CI: 1.02 – 1.89; $p < 0.039$) than their females counterparts. Similarly age as indicated by form three students being 1.5 fold more likely to use alcohol (AOR=1.52; 95% CI: 1.15 – 2.01; $p = 0.003$) than form two students. Those with academic performance of below average were

1.5 times more likely to take alcohol (AOR=1.57; 95% CI: 1.19 – 2.08; $p < 0.002$) in comparison to those who performed averagely and above. In addition, participants with average and above socio-economic status had greater odds (1.4) of alcohol use (AOR=1.40; 95% CI: 1.04 – 1.88; $p = 0.027$) than those with socio-economic status of below average.

Adolescents who had ever been sexually abused were identified to be independently associated with alcohol use (AOR=5.27; 95% CI: 2.79 – 9.96; $p < 0.001$). Results also revealed that participants who had ever seen any other familiar person using alcohol or other substances were 1.80 times more likely to use alcohol (AOR=1.80; 95% CI: 1.25 – 2.59; $p = 0.002$) than those who indicated they had not seen other familiar people using substances. Alcohol use was significantly 1.4 times more among participants who did not have lesson(s) where life skills education was taught in the school timetable (AOR=1.42; 95% CI: 1.06 – 1.90; $p = 0.020$) compared to those who reported being taught.

Perception of alcohol availability was critical. Those who indicated that getting alcoholic drinks was fairly easy and very easy were 2.4 times more likely to use alcohol (AOR=2.40; 95% CI: 1.35 – 4.24; $p = 0.003$) and 2.2 fold (AOR=2.17; 95% CI: 1.39 – 3.39; $p = 0.001$) more likely compared to those who reported that it was impossible to get alcohol. Finally, participants who thought that getting khat was very easy were likely to use alcohol 1.63 times more (AOR=1.63; 95% CI: 1.03 – 2.58; $p = 0.036$) compared to those who reported that it was impossible to get it.

Table 1 Perceived availability of Alcoholic drinks

	n-1038	%
Impossible	215	20.7
Very difficult	149	14.4
Fairly difficult	61	5.9
Fairly easy	112	10.8
Very easy	501	48.3

Table 2 Predictors of Alcohol Use among Participants: Reduced Model

Predictors	AOR ^ψ	95% CI ^φ		p value*
		Lower	Upper	
Gender				
Female	Reference			
Male	1.39	1.02	1.89	0.039*
Class/form				
Form 2	Reference			
Form 3	1.52	1.15	2.01	0.003*
Academic performance				
Average and above	Reference			
Below average	1.57	1.19	2.08	0.002*
Missing	1.32	0.43	4.12	0.628
Socio-economic status				
Average and above	1.40	1.04	1.88	0.027*
Below average	Reference			
Ever been sexually abused				
Yes	5.27	2.79	9.96	<0.001*
No	Reference			
Have you seen any other person that you know use any of the substances				
Yes	1.80	1.25	2.59	0.002*
No	Reference			
Having a lesson or lessons where life skills education is taught in the school timetable				
Yes	Reference			
No	1.42	1.06	1.90	0.020 ^β
How difficult do you think it would be for you to get Alcoholic drinks if you wanted				
Impossible	Reference			
Very difficult	1.86	1.06	3.24	0.030*
Fairly difficult	1.96	0.99	3.88	0.053
Fairly easy	2.40	1.35	4.24	0.003*
Very easy	2.17	1.39	3.39	0.001*
How difficult do you think it would be for you to get Khat if you wanted				
Impossible	Reference			
Very difficult	0.85	0.47	1.53	0.583
Fairly difficult	1.46	0.74	2.88	0.270
Fairly easy	0.93	0.51	1.68	0.807
Very easy	1.63	1.03	2.58	0.036*

* Significance at p<0.05; ^ψ Adjusted odds ratio; ^φ 95% Confidence Interval

Post intervention analysis showed significant difference in the use of all the substances between the two groups. The analysis revealed that the intervention (experimental) had significant protective effect on alcohol use (OR=0.36; 95% CI: 0.26 – 0.48; p=0.001) whereby a student enrolled in the experimental group was 64% less likely to use alcohol compared to one enrolled in the control group.

Table 3 Pre and Post-Intervention alcohol Use

Variables	Baseline					Post intervention						
	Experimental (n=454)	Control (n=556)	OR	95% CI		p value	Experimental (n=454)	Control (n=556)	OR	95% CI		p value
Alcohol consumption												
Yes	31.5%	36.3%	0.81	0.62	1.05	0.107	16.1%	35.1%	0.36	0.26	0.48	<0.001 [*]
No	68.5%	63.7%	1.00				67.4%	65.1%	1.00			

Analysis of the change in alcohol use as at post-intervention with respect to baseline between the experimental and the control groups were done as presented in Table 4 with regard to those who stopped using substance, those who started using substance and those with no change of status in terms of use or no use.

Table 4 Change in the trend of alcohol use as at Post-Intervention

Variables	Experimental (n=454)	Control (n=556)	x2	df	p value
Change in alcohol consumption					
Stopped consuming	21.6%	17.1%	23.91	2	<0.001 [*]
Started consuming	6.2%	15.8%			
No change	72.2%	67.1%			

Table 5 Positive change in Alcohol use

Variables	Stopped consuming alcohol			p value
	AOR	95% CI		
Study group				
Experimental	1.52	1.08	2.13	0.016 [*]
Control	1.00			

Analysis of the change in substance use as at post-intervention with respect to baseline between the experimental and the control groups were done. There was significant change in the overall alcohol use ($p= 0.001$) after the intervention between the study groups. The intervention was significantly associated with stopping alcohol consumption (AOR=1.52; 95% CI: 1.08 – 20.13; $p=0.016$). Adjusting for baseline differences in age, gender, class/form, whether biological parents still alive, overall score of socio-economic status, having a lesson or lessons where life skills education was taught, a student enrolled at baseline in the experimental group having alcohol consumption problem was 1.52 times more likely to stop consuming alcohol as at post-intervention compared to one enrolled in the control group.

5. Discussion

There was overall high prevalence of alcohol use among school-going adolescents in rural Nyeri with 48.6% lifetime and 34.7% current use (within the last one month) which may have been occasioned by the fact that alcohol is licit and socially accepted in the community. It is also used in most of the cultural practices like “*ruracio*” (dowry) and the initiation rites by the *Agikuyu* who are the majority people group in the study area. Previous studies on drug abuse had indicated alcohol, tobacco and cannabis were the commonly used drugs among young people in Kenya with alcohol being a gateway drug [13, 18] which was confirmed in the study.

The proportion of males among the study participants was higher (62.1%) compared to females (37.9%). This agrees with an earlier study which found out that the girl child education may not be a priority in rural Kenya [19] and this might have lowered the number of female participants in a school set up in

Nyeri. Some of the communities who live in the area like the Maasai and the Samburus believe in marrying off their girls at an earlier age which may also have contributed to fewer females in the study.

The occurrence of substance use increased with age where form threes were 1.52 times more likely to use alcohol than form twos (Table 2) and was varied according to gender. Prevalence was higher among older adolescents and male participants. The males had increased odds for using substance compared to females. This was due to the fact that physiologically males have more tolerance for alcohol than females and are allowed to take alcohol after circumcisions [20].

This study was based on the social learning [21] and the problem behaviour theory which postulate that involvement in one problem behaviour increases the probability of engagement with other problem behaviours [22, 23]. This meant that an adolescent engaging in alcohol use behaviour was likely to have interpersonal conflicts and to be in and out of school increasing the possibility of poor academic performance which in turn escalated possibility of alcohol use. This is not surprising because adolescents who are not academically endowed may have poor self-concept which may lead them to turn to alcohol use to boost their low self-esteem as a compensatory behaviour [24].

The social environment of participants was found to be significantly related to use of alcohol. Social learning may have played a role in the greater odds for using alcohol [21]. Those who had seen a parent or someone they knew use alcohol or other substances were 1.8 times more likely to use (Table 2). It was clear that those from average and above average socio-economic status were also statistically significant with 1.40 times increased odds of using alcohol (Table 2). This may infer that the

participants got money from their parents which helped to feed their alcohol use habit.

The study also noted that those who thought that getting Khat was easy were 1.63 times more likely to use alcohol (Table 2). This could be due to the study area's location along the transit route for khat from Meru, County where it is grown as a cash crop to Nairobi where its biggest market and export routes are in Kenya. Khat and alcohol use are complementary since they are both social drugs with one being a stimulant and the other a depressant [25].

The study findings showed that participants who had been exposed to sexual abuse tended to use alcohol significantly more. According to Sartor et al. (2013), sexual abuse survivors may end up with self-doubt and other comorbid mental disorders like depression. Such adolescents may end up using alcohol for self-medication as a coping mechanism [26].

Those who had not been taught the dangers associated with alcohol use had greater odds (1.42 times) of using the substance. This study sought to evaluate the effectiveness of life skills training on alcohol use reduction and prevention. The alcohol use reduction within this population as assessed at endline (post-intervention) was significantly different ($p < 0.001$) in the experimental group compared to the control group (Table 3). The five life skills when tailored towards alcohol use resistance competence were found to change the attitude and trends in alcohol use dynamics among the participants (Tables 4 & 5). The life skills model used was more skill-based and adolescent-friendly. This empowered the adolescents with skills that enabled them feel good about themselves and seek positive solutions to life problems instead of self-medication with alcohol [27]. Life skills

therefore enhanced personal worth and competence bringing about self-directed change.

6. Conclusion

Alcohol resistance life skills training used in this study was effective in the short-term (at 6 months post-intervention) for reducing and stopping use in school-going adolescents in Nyeri County. The intervention stopped and reduced substance use among participants in the experimental group significantly (Table 4 & %). Post intervention analysis showed significant difference in the use of alcohol between the two groups. The analysis also revealed that the intervention (experimental) had significant protective effect on alcohol use (OR=0.36; 95% CI: 0.26 – 0.48; $p=0.001$) whereby a student enrolled in the experimental group was 64% less likely to use alcohol compared to one enrolled in the control group. Life skills therefore enhanced personal worth and competence bringing about self-directed change.

There was a significant relationship between substance use and gender, academic performance, having been sexually abused, having seen parents or relatives use substances, having been taught dangers associated with substance use and perception of the difficulty of getting khat if one wanted to. This implied that these factors are predictive of substance use behaviour in school-going adolescents in the study area.

. A significant relationship was found between age, gender, sexual abuse, perception of ease of availability of substances, having parents, relatives and other significant persons using substances. These predictors of substance use among adolescents act as effect modifiers and/or confounding factors. This implies that substance use behavior is mediated by multiple factors that should be

addressed within and outside the individual and the school environment by all players in child and adolescent development with respect to substance use. When alcohol resistant skills training is done practically, adolescents are empowered to resist alcohol and refrain from using it. There is therefore need to rethink substance use prevention strategies among adolescents in Kenya and shift the focus from sometimes fear arousing information based strategies to practical personally driven strategies with life skills acquisition. If applied earlier in life, it is likely to delay start of alcohol use hence reduce and prevent underage drinking.

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