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LIFE SKILLS ENHANCEMENT FOR PSYCHOACTIVE SUBSTANCE USE REDUCTION AMONG SCHOOL GOING ADOLESCENTS IN KENYA

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Abstract

The aim of this study was to evaluate the effectiveness of life skills enhancement on substance use reduction among school going adolescents in Nyeri, Kenya. The study was a quasi-experimental quantitative study. Life skills' enhancement was employed for six months. Purposive and simple random sampling techniques were used to select participants (n=1010) at baseline with experimental (n=454) and control (n=556) groups. A self-administered socio-demographic questionnaire and the Global School-based Student Health Survey tool were used to get data. Odds Ratio (OR) and 95% Confidence Interval (CI) brought out the estimated strength of association between independent variables and the dependent variable. Efficacy of the intervention was assessed after six months within and between groups at endline with reference to baseline using Pearson's chi-square. The overall current prevalence of substance use at baseline was 48.7%. In addition, there was a significant difference in reduction of substance use in the experimental group after intervention. It emerged that an adolescent enrolled in the experimental

group was 86% times less likely to use any psychoactive substance compared to one in the control group. Life skills when enhanced were therefore found to be effective in empowering adolescents to develop safe and healthy behavior with regard to substance use. It is therefore recommended that education stakeholders in Kenya adapt the life skills enhancement strategy towards substance use reduction. Since the life skills enhancement training model was successful in Nyeri, there is need to expand it within the East Africa region and the rest of Africa.

Keywords

Psychoactive Substances, Adolescents, Life Skills, Enhancement, Reduction

1. Introduction

Substance use is one of the major global challenges of the 21st century, and has been considered an epidemic (McCabe, Boyd, & Teter, 2009). Globally, studies show that more preadolescent and teenage children are using drugs and alcohol, with long-term studies observing that the sequence of use runs from tobacco, alcohol, and marijuana to other substances (Botvin & Griffin, 2011). Adolescents are affected more by psychoactive substances use largely because they are still in a critical developmental stage and have more access to technology. According (Cilliers, 2017) the new technological changes are influencing the social learning of adolescents beyond the traditional scope of people around them. This includes influence in psychoactive substance use.

Adolescents who use psychoactive substances are often poorly motivated for treatment and have psychosocial problems, worsening academic performance and behavior problems (Berten & Vettenburg, 2012). Though the Kenyan school system has a life skills syllabus mainstreamed in the curriculum, it has a generic approach to life (Kenya Institute of Education, 2008). The awareness of adverse consequences of psychoactive substance use does not seem to deter the school-going adolescents from the risky behavior. They exhibit a limited range of drug resistance skills. There was therefore need to explore a school-based interventional program geared towards empowering the adolescents with intrinsic competencies to say “no” to psychoactive substance use even when these substances were available in their environments.

The study adopted life skills enhancement (LSE) as an intervention. The five life skills that were enhanced were; self-awareness, decision making, problem solving, coping skills and drug refusal skills. This paper presents an overview of the drug trends among adolescents, problem

behavior, the application and impact of life skills enhancement as mitigation for substance use reduction among school going adolescents in rural Kenya. The paper also discusses the key findings and recommendations.

1.1 Problem Statement

In Kenya, adolescent substance use has remained an area of concern in both rural and urban settings. Availability of these substances has been difficult to control with the different strategies that the Kenya Government and other stake holders have put in place. On their part, the schools have endeavored to keep their environments drugs free by searching students before they enter into the school compounds and conducting regular impromptu inspections during the school term. Students suspected or caught in possession of psychoactive substances are punished or suspended.

One of the effective strategies in other parts of the world has been the application of life skills training (LST) which is a substance use prevention and control intervention approach. It has been proven effective in the fifty states of the USA and thirty-two other countries have used it successfully (Botvin & Griffin, 2011). The intervention has proved to be effective in both long and short term applications. It is noteworthy that there is a life skills education program entrenched in the Kenyan education curriculum which is generic and broad-based. It seems there is no empirical evidence of its effectiveness in alleviating the substance use behavior in secondary schools in Kenya. This study therefore aimed at bridging the empirical gap by assessing whether enhancement of specific life skills when adapted to substance use would result in a reduction in the use among school-going adolescents in Nyeri County, Kenya.

1.2 Objectives

The objectives of this study were;

- To establish the prevalence of psychoactive substance use among school-going adolescents in Nyeri County, Kenya.
- To assess the effectiveness of life skills enhancement on psychoactive substance use reduction among these adolescents.

2. Literature Review

2.1 Adolescent Substance Use Trends

The World Health Organization (WHO, 2012, 2017) and the UNODC, (2014, 2015, 2017) drug reports indicate that many countries face an increase in alcohol and drug consumption among

young people aged 15-29 years. According to SAMHSA (2013), despite some awareness of the adverse consequences of substance use, a significant number of teenagers begin using psychoactive substances each year. Most adolescents will have tried alcohol or other substances at least once by the time they turn 18 years old (Thomson, Montgomery, & Bender, 2014). This suggests that substance use and abuse can be considered a developmental phenomenon which is linked to developmental goals and transitions at this age (Mayberry, Espelage, & Koenig, 2009). It is also a coping mechanism that is used to handle stress in order to avoid mental and physical problems by people at different stages in life; a concept referred to as “self-medication” (Karunanithi & Suberamanian, 2015).

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. The rates are highest in Europe, United States of America (USA) and are seen to be rising in other regions. Thus, substance use has become a major concern for not only the developed but also for the developing world (UNODC, 2009; UNODC/WHO, 2008). According to the UNDOC regional trends in drug use report (2014), there is limited data available on substance use situation in Africa. However, empirical evidence from Kenya showed that 92% of youths aged between 16 and 23 years have experimented with psychoactive substances in their lifetime with about 90% having experimented with beer, spirits, local brews, cigarettes and bhang (Kyalo, 2010). Kyalo’s study also revealed that about 400,000 students in secondary schools in Kenya were addicted to drugs. The frequency, as well as the type of substance abused varied from province to province.

A rapid assessment of the state of substance use in Kenya by the National Agency for the Campaign against Drug Abuse (NACADA, 2012) revealed that psychoactive substances use is not just a problem of adults. Adolescents have been affected too with a current substance use rate of at least one substance among youth aged 15-24 years at 19.8% (NACADA, 2012). Specifically, those using alcohol comprised 35.6% of the study population, 37.1% were using tobacco, 30.8 % were using Khat (*miraa*) and 44.4% were using cannabis (marijuana). According to this report, Nyeri County was said to be among the counties with high prevalence of substance use among 15 to 24-year-olds. The agency has not released another nationwide report after 2012.

A study by Otieno and Offulla (2009) among secondary school students in Kenya showed that a large number of these students have been exposed to alcohol, tobacco, *miraa* (khat), glue

sniffing, bhang (marijuana) and even hard drugs such as heroin and cocaine. Most of the adolescents begin with tobacco and alcohol, progress later to marijuana, and may eventually go on to use other drugs such as hallucinogens, depressants, psychedelics or opiates (Garret, 2011). The school campaign against drugs in Kenya also reported that 26.5% of 14-16-year-olds had had their first drink of alcohol by age 12. This happened in spite of mainstreaming alcohol and drug abuse information in the school curriculum (Waweru, Kamau, & Matogo, 2011).

2.2 Adolescents and Risky Behavior

The problem behavior theory (Jessor & Jessor, 1977) helps to explain the nature and development of alcohol use, drug misuse and other problem behaviors from a social-psychological point of view. It explains how one problem behavior leads to another. The use of tobacco, alcohol and other substances may be an attempt to cope with stress, particularly social anxiety. As argued by Jessor (2006), other individuals may begin smoking, drinking, or using drugs after repeatedly observing high status role models engaging in these behaviors or as the result of persuasive appeals made by advertisers or peers. All these act as motivation for substance use in adolescents.

It is worthwhile noting that not all adolescents who experiment with substances develop clinical problems of substance use disorders. In fact, some degree of experimentation with drugs is technically normative. Most adolescents will have tried alcohol or other substances at least once by the time they turn 18 years old (Thomson, Montgomery, & Bender, 2014). This may be a way of adjusting due to the daunting task faced by every adolescent in trying to become an independent and responsible adult. Adolescents undertake this adjustment with strategies that may include exploration, experimentation, risk taking, limit testing, and questioning of established rules and sources of authority. Despite the harm and danger associated with experimentation with substances, it may be among these functional strategies for adolescents' life transition.

It is imperative at this point to note that Substance use at adolescence can lead to a dependent and addictive pattern that requires more active, firm, and constant intervention. Adolescents then must be approached differently from adults. This is because of their unique developmental issues, differences in their values and belief systems, and unique environmental considerations including strong peer influences. In addition to age, intervention for adolescents must take into account gender, ethnicity, social environment, stage of readiness to change, and cultural background (Bava & Tapert, 2010).

2.3 Substance Use Intervention

In order to help adolescents achieve various goals in more adaptive ways, life skills training provides them with the social and personal skills needed to confront developmental challenges as they transition from childhood to adulthood. These skills include coping techniques, decision-making strategies, problem solving skills, self-awareness skills, and refusal skills which are provided to help adolescents address the factors that increase vulnerability to drug use. These are the skills that were enhanced in this study.

There is research and clinical consensus indicating that intervention for adolescents is most effective when it attends to their psychosocial problems and mental health needs in addition to their substance use problem (Karki et al., 2012). Researchers continue to endorse interventional and prevention approaches that focus on the identified substance use group with attention to what strategy of intervention is most likely to influence that adolescents positively. One of the most disturbing findings in recent times is that the onset of substance use among adolescents is occurring at younger ages. There is therefore need for implementation of interventions that are age appropriate before the adolescents graduate to substance use disorders. The contemporary psychosocial prevention strategies have some common theoretical roots based largely on the social learning theory (SLT) (Bandura, 1977) and problem behavior theory (PBT) (Jessor & Jessor, 1977).

From these theoretical perspectives, substance use is conceptualized as a socially-learned, purposive, and functional behavior. Consistent with this theoretical framework, life skills enhancement training addresses multiple risk and protective factors and teaches personal and social skills that build resilience and help the adolescent navigate developmental tasks. The goal is to increase the likelihood of success by enhancing personal competence through the teaching of life skills (Danish & Forneris, 2007).

This implies that in order to treat adolescents effectively, intervention providers must address the issues that play significant roles in adolescents' life, such as cognitive, emotional, physical, social, family and peer environment (Botvin & Griffin, 2011). Treatment for adolescents with substance use disorders works best when it is provided and implemented with their particular needs and concerns in mind (SAMHSA, 2012). According to SAMHSA, school-based programs such as life skills education seem to work better for the adolescents than community-based programs.

In the study, the LSE aimed at equipping adolescents by working on psychosocial skills, coping and refusal strategies and handling peer pressure and problem solving that could empower an adolescent to make informed decisions on the use of psychoactive substances. This intervention heavily involved the students in the educational process due to its interactive nature that enabled the adolescents' particular social and personal world to be in the foreground. Five different skills were availed and tailored to pursue specific objectives, dependent on the needs of the adolescents after the baseline survey and screening. The skills involved were self-awareness, decision making, problem solving, coping skills and drug resistant skills.

3.0 Methodology

3.1 Research Design and Scope

This study adopted a quasi-experimental design in assessing the effectiveness of a life skills enhancement programme for substance use reduction in six months. The design used the pretest-posttest approach where the participants were assessed on the trend of substance use at baseline (pretest) and endline (post-intervention). The study involved forms two and three students (n=1010) from public schools aged between 13 and 22 years. The assigning of the experimental (n=454) and control (n=556) groups was through purposive sampling of administrative locations with random sampling of schools in Kieni Sub-County of Nyeri County, Kenya. Life skills enhancement training was used to reduce substance use and enhance. The study used a quantitative approach to assess the prevalence of psychoactive substance use and to describe the impact of life skills enhancement training on substance use after six months.

3.2 Data Collection Instruments

The study used;

- A researcher-developed socio-demographic questionnaire at baseline.
- The Global School-based Student Health Survey questionnaire (GSHS). The questionnaire is a World Health Organization, (2001) self-administered tool that contains questions that assess all aspects of the health of young people. Only the tobacco, alcohol and drugs modules were adopted in this study. The instrument had been used in a similar study in Kenya where the reliability coefficient was 0.798 using the Spearman-Brown prophecy formula (Oteyo, Kariuki, and Mwenje, 2013). The selected questions were used at baseline and during the post-intervention assessments.

- A life skills enhancement training manual that was developed with ideas from the KIE curriculum (2008), Gilbert Botvin life skills training model (2009), the WHO (1997) life skills education programme and the Drug Abuse Resistance Education (DARE) programme (Harvey & Burnett, 2014) programme. It was validated by a panel of experts from Kenyan Universities who included Educationalists, Psychologists and researchers. It was also ratified by the Institutional Research Board that approved the study.

3.3 Data Collection and Intervention Procedures

At baseline both the socio-demographic and the GSHS questionnaires were administered to participants in both the experimental and control groups. Baseline assessment was on both the life-time and current (the previous 30 days) substance use among the participants. The endline assessment was on the current (the previous 30 days) substance use. The LSE training commenced immediately after the baseline survey. The skills were imparted through a combination of instruction, demonstrations, role plays, short video clips, rehearsals, and extended practice in small groups. The students were also paired with what was dubbed as “accountability partners”. The enhancement training was done for three months for the experimental group. The control group continued with the generic life skills lessons. For the next three months participants in the experimental group were put into accountability groups that met every week to review the practice of the enhanced skills. Six months after the commencement of the intervention, selected questions from the Global School-based Health Survey Questionnaire (GSHS) tool were administered to the adolescents in both experimental and control schools to screen the current (within the previous 30 days) use of psychoactive substances.

4. Findings

The socio-demographic characteristics of the participants by groups (experimental and control) at baseline are as presented in table 1. The participants were between the ages of 13 and 22 years with the majority falling within the 16 to 18 years of age category (82.2%) which is the normal age bracket of students in forms two and three in the Kenya education system.

Table 1: Socio-Demographic Characteristics of the Participants

Socio-demographic attributes	Total (N=1010)		Experimental (N=454)		Control (N=556)	
	n	%	n	%	n	%
Age in years						
13-15	127	12.4	61	13.0	69	12.1
16-18	833	82.2	393	84.0	448	78.6
19-22	60	5.6	14	3.0	53	9.3
Gender						
Female	393	37.9	238	50.9	155	27.2
Male	645	62.1	230	49.1	415	72.8
Class/form						
Form 2	557	53.7	234	50.0	323	56.7
Form 3	481	46.3	234	50.0	247	43.3

a. Prevalence of Substance Use at Pre and Post- intervention

Analysis of lifetime and current substance use among all participants indicated that 57.4% had life time use while 48.7% had current (within the last 30 days) use of psychoactive substances. Table 2 presents the current use for the experimental and control groups at baseline and endline (post-intervention).

Table 2: Baseline and Post-Intervention Substance Use Levels for both experimental and Control groups

	Baseline				Post intervention			
	Experimental (n=454)	Control (n=556)	OR	P value	Experimental (n=454)	Control (n=556)	OR	P value
Variables								
Tobacco (smoking)								
Yes	15.2%	14.7%	1.04	0.842	4.6%	16.4%	0.25	<0.001*
No	84.8%	85.3%	1.00		95.4%	83.6%	1.00	
Tobacco (smokeless)								
Yes	9.0%	9.5%	0.94	0.785	6.2%	14.9%	0.38	<0.001*
No	91.0%	90.5%	1.00		93.8%	85.1%	1.00	
Tobacco (Smoking and smokeless)								
Yes	19.8%	20.5%	0.96	0.789	8.8%	24.6%	0.30	<0.001*

No	80.2%	79.5%	1.00		91.2%	75.4%	1.00	
Alcohol consumption								
Yes	31.5%	36.3%	0.81	0.107	16.1%	35.1%	0.36	<0.001 [*]
No	68.5%	63.7%	1.00		67.4%	65.1%	1.00	
Drug use								
Yes	28.0%	30.8%	0.87	0.335	12.6%	50.0%	0.14	<0.001 [*]
No	72.0%	69.2%	1.00		87.4%	50.0%	1.00	
Multiple substance use								
None	55.9%	48.4%	1.00		79.5%	35.6%	1.00	
One type	18.5%	24.1%	0.99	0.970	8.6%	29.5%	0.22	<0.001 [*]
Two types	15.95	19.1%	0.72	0.061	6.8%	24.5%	0.13	<0.001 [*]
Three types	9.7%	8.5%	0.66	0.013	5.1%	10.4%	0.13	<0.001 [*]
Overall substance use								
Yes	44.1%	51.6%	0.74	0.017	20.5%	64.4%	0.14	<0.001 [*]
No	55.9%	48.4%			79.5%	35.6%		

^{*} Significant at $p < 0.05$; ^ψ Odds ratio; ^φ 95% Confidence Interval

As presented in Table 2, there was no significant difference in specific substances use (tobacco, alcohol and other drugs) between experimental and control groups at baseline ($p > 0.05$). The results demonstrated the desired baseline equivalence. Post intervention analysis showed significant difference in the use of all the substances between the two groups. The results showed that the intervention (experimental group) had significant protective effect on overall current substance use (OR=0.14; 95% CI: 0.11 – 0.19; $p < 0.001$). After intervention, an adolescent enrolled in the experimental group was 86% less likely to use any substance compared to one enrolled in the control group.

Analysis of the change in substance use trend as at post-intervention with respect to baseline between the experimental and the control groups were done as presented in Table 3 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. Significant changes occurred between the study groups with regard to smoking tobacco ($p < 0.001$), using smokeless tobacco ($p < 0.001$), and combined use of smoke and smokeless tobacco ($p < 0.001$). Similarly, significant changes occurred between the study groups with regard to use of drugs ($p < 0.001$) and alcohol consumption ($p = 0.001$). There was significant change in the overall substance use ($p = 0.001$) after the intervention.

Table 3: Change in Substance Use trends as at Post-Intervention

Variables	Experimental (n=454)	Control (n=556)	x ²	d f	p value
Change in smoking					
Stopped smoking	12.6%	9.2%	31. 95	2	<0.0 01*
Started smoking	2.0%	10.8%			
No change	85.5%	80.0%			
Change in using smokeless tobacco					
Stopped using	6.4%	6.5%	23. 53	2	<0.0 01*
Started using	3.5%	11.9%			
No change	90.1%	81.7%			
Change in using smoke and smokeless tobacco					
Stopped using	14.3%	11.7%	42. 96	2	<0.0 01*
Started using	3.3%	15.8%			
No change	82.4%	72.5%			
Change in alcohol consumption					
Stopped consuming	21.6%	17.1%	23. 91	2	<0.0 01*
Started consuming	6.2%	15.8%			
No change	72.2%	67.1%			
Change in use of drugs					
Stopped using	20.0%	9.0%	106. .7	2	<0.0 01*
Started using	4.6%	28.2%			
No change	75.3%	62.8%			
Change in overall substance (Tobacco, Alcohol, Drugs) use					
Stopped consuming	28.6%	11.2%	97. 78	2	<0.0 01*
Started consuming	5.1%	23.9%			
No change	66.3%	64.9%			

5. Discussion

Efficacy of the intervention was assessed at endline with reference to baseline for both the experimental and the control groups. Life skills enhancement training used in this study was effective in the short-term (at 6 months post-intervention) for reducing substance use in the school-going adolescents in Nyeri County, Kenya. The intervention stopped and reduced substance use among participants in the experimental group significantly. The intervention was found to have a

positive effect in reducing specific and overall substance use with a significant difference between the experimental and control groups ($P=0.001$).

The substance 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. This means that the life skills' enhancement training given to the experimental group was effective in reducing overall substance use prevalence significantly from 44.1% to 20.5% within six months (Table 2).

It emerged that an adolescent enrolled in this group was 86% times less likely to use any psychoactive substance compared to one in the control group. The reason for the observed change was because 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. Hodge, Danish and Martin (2012) together with Kaplow, Curran and Dodge (2009) also argued that the life skills enhancement model used increased the likelihood for drug resistance skills development through enhancing personal practical and competence to resist substance use influences and manage life challenges without self-medicating with drugs. Life skills therefore enhanced personal worth and competence bringing about self-directed change. LSE has been adopted and applied in adolescent/youth reproductive health in terms of sexuality and HIV and AIDS prevention in several African countries including Kenya (UNICEF, 2012).

5.1 Conclusion and Future Research

It is recommended that education stakeholders in Kenya adapt the life skills enhancement strategy that was successful in Nyeri towards substance use reduction and improvement of other aspects of adolescents' life. This needs to be expanded to non-school going adolescents and to other parts of Africa. There is need for longitudinal studies in future involving a cohort of children who would have lifeskills enhanced from an early age and their substance use behaviour assessed as they exit high school.

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