



Psychosocial Skills Intervention for Substance Use amongst Street Children in a Local Government Area in South West Nigeria

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ABSTRACT

Introduction: The unrestrained exposure to the street and its associated lifestyles make the street child vulnerable to substance use. However, the effectiveness of psycho-social skills intervention on the knowledge and use of these substances among street children in transitional communities has not been fully investigated, hence the need for this study.

Methods: A community interventional study was conducted with a total sample of 360 street children allocated to the intervention and control clusters. The knowledge of and psychosocial correlates of substance use were assessed and an interactive psycho-social skills intervention package implemented for the intervention group while the control group had an HIV/AIDS health education programme.

Results: The mean age was 16 ± 1.2 years and 16 ± 1.3 years for the intervention and control groups, respectively, 54% of intervention group were males compared to 62.8% in control group. For children fully on the street, baseline current substance use was 58.7% and 69.7% in intervention and control groups, respectively. Mean knowledge scores increased from 8.6 ± 3.9 at baseline to 17.3 ± 2.9 at 12 weeks post intervention in the intervention group compared to the control group, where it increased slightly from 8.0 ± 5.1 at baseline 8.7 ± 4.1 at the 12 weeks post intervention period, ($p < 0.005$). Post intervention, there was a statistically significant reduction in the current use of hypno-sedatives, tobacco, pawpaw leaves, solvents, and ethanol but not stimulant. In the control group, there was a general increase in the current use of the substances at the 12 weeks post intervention.

Conclusions: An interactive psychosocial package may be effective for reducing psychoactive substance use amongst street children. However, further research will be needed to address stimulant use which was not affected by our intervention.

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INTRODUCTION

The harsh socio-economic climate in Nigeria has contributed to the increasing number of children on the streets. According to the Nigerian National Bureau of Statistics, the percentage of people living below the poverty line increased from 27.2% in 1980 to 69.0% in 2010.¹ This trend has made relatively young

children to become income earners at a tender age in order to supplement the family income. These children often have to fend for their families through the meager amount of money made on the streets hawking, trading or simply serving as unsolicited praise singers to apparently affluent people. Although some may still go back home or attend school, they

are at a risk of eventually abandoning home to live on the streets.² Thus, the phenomenon of street children has gradually become a developmental crisis in the country. In addition, street children are exposed to various risks such as police harassment, exploitation, sexual assault and unsavoury peer group criminal influences.^{3, 4} These situations are capable of making street children join gangs and groups for protection and accessing of opportunities on the street. This exposure to the inherent dangers of street life within the context of lack of adult supervision and appropriate peer socialization may increase the risk of using psychoactive substances.^{2, 4} Hazardous use of these substances has far reaching implications on the social behaviour and health of these young people.

Although various studies have documented substance use amongst in-school youths, particularly in the urban areas, the extent of the problem in the rural areas and amongst street youths still remains under-documented.^{2, 5} In addition, no intervention targeted at hazardous substance use has been conducted in these environ. However, a few studies have reported the greater use of multiple drugs and solvents in the rural areas.^{6, 7} In this study, we determined the patterns of psychoactive substance use among street children in the rural area of Kajola Local Government and subsequently assessed the effect of a psychosocial skills building intervention in reducing the prevalence.

METHODS

A community based interventional study was conducted. Sample size was calculated for the intervention arm based on the formula for two independent proportions,⁸ with the first proportion being the prevalence of psychoactive drug use among street children in a rapid assessment done in Lusaka (45%).⁴ It

was assumed that there would be a 15% reduction in the prevalence of psychoactive drug use after the intervention. The chance we were willing to accept of making type 1 and type 2 errors were 0.05 and 0.20, respectively. Because of the unpredictability of the study population, we factored in a 10% attrition rate. The calculated sample size was 178/group which was rounded off to 180. Overall, three hundred and sixty street children participated in the study. The sampling technique and procedure had been described previously elsewhere.⁹ Ethical approval was obtained from the UI/UCH Institutional Review Committee. The questionnaires used to collect information were anonymous linked and informed consent was obtained from every study participant either by signing/thumb printing an informed consent form or verbally agreeing to the contents of the form. We also ensured that the information given was treated with utmost confidentiality and that participants did not have any problem with the law enforcement agencies on account of the information given to us. The clusters of street children in three wards located in Okeho were balloted as the intervention group while the others located in four wards in Ilero were balloted as the control group. The distance between the 2 towns varies from 8 to 15km depending on the site of approach. We employed the "precede-proceed model" to profile the clusters of street children for the base line survey.¹⁰ Based on this, we concluded that the socio-demographic characteristics of street children in transitional or rural communities were quite distinct from that of street children in urban communities. We therefore proposed a nomenclature for another subset of street children to be called "children about the street"; these are those who gravitate to the street in search of pleasure.¹¹ In addition, our baseline survey informed the adoption of the psycho-social approach to intervention which focused on the

concept of community asset mapping¹² (which shifts attention from the substance use problems to the natural leadership potentials of the participants) and life skills acquisition. Thus our intervention involved informal trainings on improving knowledge about psychoactive substances; improving self-esteem; developing a business approach to life and psycho-social skills acquisition. The methods of delivery were:

Brainstorming session: The participants were encouraged to generate ideas at this stage.

Experiential learning approach: This involved the voluntary relating of experience of participants and asking other participants the inferences and lessons that can be drawn or learned from it.

Visual Aids: Posters of effects of cigarettes, tell-tale appearance of smokers and posters depicting clashes between police and substance users.

Interactive session: The participants all played prominent roles in the form of opinions, comments and voicing out what they had heard somewhere else that needed clarification.

These methods were employed because of the short attention span of the street children. The control group on the other hand had sessions on HIV/AIDS and self-protection.

Immediate post intervention test: After the intervention, an immediate post-test was administered to the participating street children in both control and intervention groups. This was a structured questionnaire with a dichotomous response mainly on the ability to identify psychoactive substances and their harmful effects. There were 20 questions testing knowledge with 10 on correct identification of psychoactive substances and

10 on the harmful effect of psychoactive substances. Their current substance use was also sought which was defined as substance use within the last 30 days preceding the interview.

Three-months post intervention test: The intervention and control groups were administered a structured questionnaire with a dichotomous response mainly on the ability to identify psychoactive substances and their harmful effects. The participants' current substance use was also documented. At this stage, there was a 3.3% attrition rate for the intervention group with only 174 street children completing the study. In the control group, there was a 7.2% attrition rate with only 167 street children completing the study. This was due to the mobile nature of these children with some of them reported to have gone to big cities or the mines or being involved in the trans-border trade.

At the end of the study, the results were disseminated to the Local Government Primary Health Care (PHC) Department. Follow-up action points were subsequently integrated into the Ward level PHC priority plans for sustainability.

Data analysis: Data was first cleaned before entry. In all, 392 street children were interviewed for the baseline phase out of which some were eliminated either from 3 or more inconsistent answers or from abode not being permanent for at least 6 months in the study towns. Thus, only 360 questionnaires were entered at the baseline phase. The Statistical Package for Social Scientists (SPSS) version 17 was used for both the data entry and analysis.¹³ Frequency tables were generated and statistical significance set at the 5% level. Student's t-test was used to test for the difference in knowledge at the different phases of the study while Chi-squared test was used for differences in substance use.

RESULTS

The socio-demographic characteristics of the street children had previously been described.¹¹ The mean age was 16.2 ± 1.2 years for the intervention group and 16.2 ± 1.3 years for the control group. Up to 117 (65%) of the intervention group still attend school which is not too different to the control group where 104 (57.8%) still attend. In addition, almost equal proportions of street children in both intervention and control groups had stayed for four years or more on the streets i.e., 7.8% (14) in intervention compared to 6.7% (12) in control group.

Table 1 shows that the 3 substances that respondents recognized as psychoactive most readily were cocaine, marijuana and alcohol with 118 (65.6%), 116 (64.4%), 111 (61.7%) doing so respectively, in the intervention group and 87 (48.3%), 117 (65.0%), 109 (60.6%) doing so respectively, in the control group. The substance that respondents recognized the least as being harmful was solvents with 41 (22.8%) in the intervention group and 33 (18.3%) in the control group.

Table 2 reveals the prevalence of substance use. For the student's subgroup, the prevalence of ever use of psychoactive substances was 72.6% among the intervention group and 78.8% among the control group. Current use was lower than this, with a prevalence of 35.9% in the intervention group and 47.1% in the control group. In the working subgroup, the prevalence of ever use of psychoactive substances was 81.0% in the intervention group and 81.6% in the control group. However, the current use prevalence was 58.7% in the intervention group and 69.7% in the control group.

Table 3 shows the mean knowledge score by phase of study. For the intervention group, the mean knowledge score initially increased from

8.6 at baseline to 18.1 at the immediate phase before marginally dropping to 17.3 at 3-months post intervention. For the control group, the mean knowledge scores decreased from 8.0 at baseline to 7.1 at the immediate phase, followed by an increase to 8.7 at the 3-months post intervention period. The differences observed in knowledge scores between the intervention and control groups at the immediate and 12 weeks post intervention were statistically significant at the 5% level.

Table 1: Respondents knowledge of psychoactive substances at baseline

Psycho active substances	Proportion with correct knowledge Interventional group (n = 180) n (%)	Proportion with correct knowledge Control group (n = 180) n (%)	p-value
Identification of psychoactive nature			
Cocaine	118 (65.6)	87 (48.3)	0.01*
Marijuana	116 (64.4)	117 (65.0)	0.91
Alcohol	111 (61.7)	109 (60.6)	0.83
Tobacco	99 (55.0)	86 (47.8)	0.17
Heroin	80 (44.4)	71 (39.4)	0.34
Hypno-sedatives	67 (37.2)	74 (41.1)	0.45
Kolanut	61 (33.9)	41 (22.8)	0.02*
Stimulant	61 (33.9)	67 (37.2)	0.51
Solvents	60 (33.3)	56 (31.1)	0.65
Pawpaw leaves	41 (22.8)	53 (29.4)	0.15
Recognition of harmful effects			
Marijuana	123 (68.3)	106 (58.9)	0.06
Cocaine	97 (53.9)	93 (51.7)	0.67
Alcohol	94 (52.2)	91 (50.6)	0.75
Tobacco	83 (46.1)	67 (37.2)	0.09
Heroin	80 (44.4)	65 (36.1)	0.11
Pawpaw leaves	57 (31.7)	48 (26.7)	0.30
Hypno-sedatives	53 (29.4)	52 (28.9)	0.91
Stimulant	52 (28.9)	51 (28.3)	0.91
Kolanut	48 (26.7)	65 (36.1)	0.05*
Solvents	41 (22.8)	33 (18.3)	0.30

* Statistically significant

Table 2: Baseline prevalence of substance use

Use of any substance	Intervention n (%)	Control n (%)
Still schooling		
<i>Ever use</i>		
Yes	85 (72.6)	82 (78.8)
No	32 (27.4)	22 (21.2)
Total	117 (100.0)	104 (100.0)
<i>Current use</i>		
Yes	42 (35.9)	49 (47.1)
No	75 (64.1)	55 (52.9)
Total	117 (100.0)	104 (100.0)
Work full time		
<i>Ever use</i>		
Yes	51 (81.0)	62 (81.6)
No	12 (19.0)	14 (18.4)
Total	63 (100.0)	76 (100.0)
<i>Current use</i>		
Yes	37 (58.7)	53 (69.7)
No	26 (41.3)	23 (30.3)
Total	63 (100.0)	76 (100.0)

Table 3: Knowledge of respondents on psychoactive substance by intervention phase

Knowledge score by intervention phase	Intervention mean (n)	SD	Control mean (n)	SD	T	p value
K Score (Baseline)	8.6 (180)	3.9	8.0 (180)	5.1	1.27	0.21
K Score (Immediate)	18.1 (180)	3.5	7.1 (180)	6.3	20.5	0.00
K Score (12 weeks)	17.3 (174)	2.9	8.7 (167)	4.1	22.2	0.00

Table 4 shows the current substance use of respondents who were still schooling. For Kolanuts, Alcohol, Hypno-sedatives, Solvents and 'Sokudaye' (literal meaning: "make a dead person come alive"), current use prevalence rates declined from baseline to 3-months post intervention. For the control arm, the current use prevalence rates increased from baseline to 3-months post intervention. All the differences observed were statistically significant. For Tobacco, current use prevalence decreased from baseline to 3-months post intervention while in the control arm there was an initial

decrease at the immediate intervention phase followed by an increase to baseline proportion at 3-months post intervention. All the differences observed were also statistically significant. This was the same pattern for Pawpaw leaves except that in the intervention arm, the prevalence initially increased from baseline to the immediate post intervention phase before a decline at 3-months post intervention. The difference in the usage of marijuana at 3-months post intervention was not statistically significant. There was also no reported usage of cocaine or heroin in the intervention group. The current use of stimulants remained the same in the intervention group while it increased significantly in the control group

Table 5 shows the current substance use of respondents who work full time by study phase. For Kolanut, Tobacco and 'Sokudaye', the current use prevalence declined in the intervention arm from baseline to the 3-months post intervention period while it increased in the control arm. The differences observed were statistically significant. Although there was a decrease in current use of alcohol, heroin and cocaine at 3months post intervention in the intervention arm and an increase in the control arm, only in the control arm were these differences significant. For pawpaw leaves and solvents, there was an initial increase reported in the intervention arm at immediate post intervention period, but the current use decreased at the 3months post intervention period while current use in control arm increased. These observed differences were statistically significant. There was no usage of hypno-sedatives in the intervention arm. The reduction observed with Marijuana in the intervention arm was not statistically significant. For stimulants, the current use pattern remained the same in the intervention arm while it increased in the control arm.

Table 4: Current substance use of still schooling respondents by study phase

Substance use	INTERVENTION GROUP				CONTROL GROUP			
	Baseline n = 117 n (%)	Immediate post intervention n = 117 n (%)	3 months post intervention n = 117 n (%)	p-value	Baseline n = 104 n (%)	Immediate post intervention n = 104 n (%)	3 months post intervention n = 101 n (%)	p-value
Kolanut	19 (42.2)	20 (44.4)	6 (13.3)	0.009	28 (30.8)	10 (11.0)	53 (58.2)	<0.001
Stimulant	5 (33.3)	5 (33.3)	5 (33.3)	1.00	10 (20.8)	10 (20.8)	28 (58.3)	<0.001
Alcohol	10 (50.0)	8 (40.0)	2 (10.0)	0.007	25 (31.3)	20 (25.0)	35 (43.7)	0.04
Hypno-sedatives	12 (60.0)	4 (20.0)	4 (20.0)	0.04	10 (26.3)	0 (0.0)	28 (73.7)	<0.001
Marijuana	4 (44.4)	4 (44.4)	1 (11.1)	0.36	16 (30.2)	20 (37.7)	17 (32.1)	0.76
Tobacco	16 (47.1)	15 (44.1)	3 (8.8)	0.006	22 (37.3)	15 (25.4)	22 (37.3)	0.32
Pawpaw leaves	8 (38.1)	12 (57.1)	1 (4.8)	0.009	8 (40.0)	0 (0.0)	12 (60.0)	<0.001
Solvents	9 (56.2)	6 (37.5)	1 (6.3)	0.004	5 (38.5)	0 (0.0)	8 (61.5)	0.02
Cocaine	0 (0.0)	0 (0.0)	0 (0.0)	-	1 (50.0)	0 (0.0)	1 (50.0)	0.60
Heroin	0 (0.0)	0 (0.0)	0 (0.0)	-	1 (50.0)	0 (0.0)	1 (50.0)	0.60
Sokudaye	14 (50.0)	10 (35.7)	4 (14.3)	0.05	10 (23.8)	0 (0.0)	32 (76.2)	<0.001

Table 5: Current substance use of respondents that work full time by study phase

Substance use	INTERVENTION GROUP				CONTROL GROUP			
	Baseline n = 63 n (%)	Immediate post intervention n = 63 n (%)	3 months post intervention n = 57 n (%)	p value	Baseline n = 76 n (%)	Immediate post intervention n = 76 n (%)	3 months post intervention n = 66 n (%)	p value
Kolanut	22 (46.8)	17 (36.2)	8 (17.0)	0.03	37 (36.3)	19 (18.6)	46 (45.1)	<0.001
Stimulant	2 (33.3)	2 (33.3)	2 (33.3)	0.99	6 (11.1)	9 (16.7)	39 (72.2)	<0.001
Alcohol	9 (42.8)	6 (28.6)	6 (28.6)	0.60	35 (32.7)	27 (25.2)	45 (42.1)	<0.001
Hypno-sedatives	0 (0.0)	0 (0.0)	0 (0.0)	-	7 (31.8)	0 (0.0)	15 (68.2)	<0.001
Marijuana	6 (33.3)	8 (44.4)	4 (22.2)	0.58	20 (31.7)	24 (38.1)	19 (30.2)	0.77
Tobacco	8 (53.3)	7 (46.7)	0 (0.0)	0.02	29 (36.7)	20 (25.3)	30 (38.0)	0.06
Pawpaw leaves	12 (38.7)	15 (48.4)	4 (12.9)	0.04	10 (32.3)	0 (0.0)	21 (67.7)	<0.001
Solvents	9 (29.0)	20 (64.5)	2 (6.5)	<0.001	10 (41.7)	0 (0.0)	14 (58.3)	<0.001
Cocaine	4 (40.0)	3 (30.0)	3 (30.0)	0.92	4 (33.3)	0 (0.0)	8 (66.7)	<0.001
Heroin	3 (50.0)	3 (50.0)	0 (0.0)	0.25	2 (20.0)	0 (0.0)	8 (80.0)	<0.001
Sokudaye	5 (83.3)	0 (0.0)	1 (16.7)	0.03	16 (29.6)	0 (0.0)	38 (70.4)	<0.001

DISCUSSION

A large proportion of the participants still attend school and this shows the clear distinction between the rural and urban perceptions of the street child. The unique characteristics of this subset of street child that we proposed should be called “children about the street” had previously been described.¹¹ In urban areas, the phenomenon of the street child is largely concerned with those usually living rough and existing outside the family framework.^{14, 15}

The mean knowledge score was quite low in this study and is unlike that reported in a study conducted in Kenya by Embleton et al.¹⁶ This might not be unconnected with the fact that the Kenya study was located in a rapidly urbanizing town while our own study was located in a rural town with little or no opportunities of street youths access to life transforming information. across the various sub-groups and is consistent with that found in a similar study among secondary school students.¹⁶ The observed low knowledge score in our study set the template for an educational intervention to which young people are receptive.¹⁷

The pattern of kolanut, tobacco and alcohol being the 3 most common substances used differs from the finding that worldwide, cannabis is the most widely abused substance and the position that apart from inhalant, cannabis is the most widely abused substance by young people overall in Africa.¹⁸ Our finding also differs slightly from other study findings that alcohol and marijuana use precedes the use of other drugs.¹⁹⁻²¹ However, our findings show the preference of these youth for the socially acceptable substances and the ones that are least expensive, a fact that has been documented before. The use of “*sokudaye*” a methanol based product revolves round the belief amongst the participants

(which was echoed in the towns) that it has the property of clearing the throat. This clearly shows that substance use is likely to continue for products that have been socially acceptable and there is no legislation controlling its use. It could also be said that it may actually be a substitute for alcohol for a cheaper price and with many times the effect of alcohol.

Although this study’s prevalence for solvents is a record high, solvents use in rural areas are known to surpass that of urban areas.⁷ The increased prevalence of solvents in the study also compares with the United Kingdom, United States, Brazil, Kenya, Swaziland and Zimbabwe reported rates of between 10 and 20 percent.¹⁸ Overall, current use rate and specific substance use rate are relatively high in this study which is not unusual in this group of children as studies have found that for almost every substance, substance use prevalence was highest amongst street children, the homeless youth than in a comparative general population.^{22, 23} The vulnerability and susceptibility of this group to substance use thus justified the interventional study in this group of street children.

There was a decline in the current usage of kolanut, alcohol, hypno-sedatives, marijuana, tobacco, pawpaw leaves, solvents, cocaine, heroin and “*sokudaye*” at the post intervention phase in the intervention group. However, the decline in the usage of alcohol, marijuana, heroin and cocaine were not statistically significant. This may partly be due to the small proportion of usage in these categories from the baseline. The static nature of stimulant use in the intervention group may also be due to the small proportion of users or that stimulants use requires a longer intervention time especially amongst still schooling individuals. The reported non-use of cocaine or heroin amongst those still schooling in the intervention group may be

due to the moderating influence of school on these subset of street children. In the control group, the general pattern was that of an increase in current usage of all substances with the exception that for marijuana there was a reversal to the baseline figure, which was not statistically significant. The marijuana use pattern may actually reflect under-reporting which can occur as a result of the fear of National Drug and Law Enforcement Agency (NDLEA), which had increased their law enforcement drives shortly after the intervention. However, the increase in current usage of other substances in the control area may actually reflect the influence of an increased "illegal mining" operations in the control town with its attendant risky lifestyles.

The pattern observed in the intervention group was similar to that reported from a study on a life skills training intervention amongst middle school students in Marion County Indiana in which there were significantly fewer current cigarette smokers post intervention.²⁴ The reduction in the usage of substances in this study thus re-enforces the fact that youths are receptive to information and their substance use can be moderated and/or modified by the right education programme.^{17, 25, 26}

The mean knowledge scores also increased from the baseline at the immediate post intervention phase before a marginal decline in knowledge at 3-months post intervention in the intervention group. In the control group, the mean knowledge scores declined from that at baseline to that at immediate post intervention phase before increasing at 3-months post intervention phase. The difference in the mean knowledge score between the intervention and control groups at both intermediate and 3-months post intervention were statistically significant. This was also demonstrated by the Marion County

which showed that students who completed the Life Skills Training had more knowledge on the health effects of smoking.²⁴ This same pattern was reported by another author who in addition reported a gradual decay in knowledge of the respondents over time.¹⁶

Our study suggests that training on psychosocial skills is an effective strategy for substance use reduction. The effectiveness of our mode of intervention is further strengthened by the findings of a research group that students need the interactive approach to have the intervention effective rather than a repetition of the same information as in media and public campaign approaches.²⁷ Another study also showed that a prevention program, which taught drug refusal skills, anti-drug norms, personal self-management skills and general social skills, reduced smoking, drinking, inhalant use and poly-drug use among school youths at post intervention evaluation.²⁶ In addition, a literature review of prevention programmes reveals that programmes with a mentoring or participatory component have valuable contributions to make to substance use reduction.^{25,28} An examination of the effectiveness of different types of drug prevention programmes in a meta-analysis of 120 school-based (5th-12th grade) programmes also revealed that the superiority of the interactive programme approach was both clinically and statistically significant as compared to the non-interactive programme for tobacco, alcohol, marijuana and illicit drugs for all adolescents.²⁹

CONCLUSION

Our intervention study documented high prevalence for the current use of psychoactive substances; a finding that is not unusual amongst street children. The use of an interactive psychosocial skills capacity building approach substantially reduced

substance use in the intervention group as well as increased their knowledge about psychoactive substances compared to the control group at 3-months post intervention. However, the slight decline in the knowledge score of the intervention group after an initial increase calls for a sustained period of mentoring and capacity building for the participating street children in order to maximize the gains achieved.

LIMITATIONS

Although efforts were made to obtain the true substance use prevalence rates in this study, under-reporting especially of controlled substance is still a possibility. The law enforcement drive of the NDLEA after intervention was also noted; but the effect of this was assumed to have been naturally distributed evenly in the two study groups. This also applies to contamination from the media. Thus any bias inherent from these would have been non-differential.

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