



## Comparative Effectiveness of Non-Formal Education Strategies in Reducing Social Vices among Nigerian Adolescents: Jingle, Movie and Crusade Initiatives

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**Abstract.** Social vices and restiveness among adolescents pose increasing risks to national security and social stability in Nigeria. non-formal educational strategies, which include the use of jingles, films, and crusades, represent possible behavioural strategies against social vices. However, there is no comparative assessment of the effectiveness of such programmes, especially considering the influence of gender and geographical locations on their efficacy. Therefore, this study aims to compare the effectiveness of jingle, film, and crusade programmes in preventing social vices among adolescents in Nigeria while accounting for the moderating effects of gender and geopolitical locations. The research adopted a mixed methods approach and used a pre-test-post-test quasi-experiment. A sample size of 1,200 adolescents (67% males and 33% females) who had dropped out of school was drawn from all six geopolitical regions of Nigeria. The participants were assigned nonrandomly to three different treatment groups based on the type of intervention: jingles, movies, and crusades. The data was analyzed using descriptive statistics, paired samples t-test, one-way analysis of variance (ANOVA), analysis of covariance (ANCOVA) ( $\alpha=0.05$ ), post hoc (Bonferroni) corrections, and partial  $\eta^2$ . The most common economic survival activities were casual labour (73.9%), vocational skills development (65.9%), and street vending (52.0%). The major perceived cause of youth restiveness were corruption (77.0%), failure of economic policies (76.0%) and poverty (72.0%). The three non-formal education programmes resulted in the significant decrease of social vices in the sample, with the largest effect seen in vices reduction ( $F(2,1197)=14,451.93, p<0.001, \eta^2=0.969$ ). The jingles intervention had the highest mean post-intervention scores compared to movies

and crusades in all categories tested: survival activities ( $M=74.82$ ), restiveness reduction ( $M=83.48$ ) and vices curbing ( $M=64.75$ ). Significant differences were found between all groups ( $p<0.001$ ). The moderating effect of gender was detected on the variable restiveness reduction ( $F=4.20, p=0.041$ ), but not on survival activities or vices reduction. Geopolitical location was another moderator for vices reduction ( $F=4.03, p=0.001$ ); the biggest reduction was noted for North Central. It can be concluded that non-formal education strategies, especially jingles, are effective in preventing social vices. However, gender and geographical location were moderators of specific variables. Therefore, targeted approaches are recommended. For policymakers, it means investing in NFES programmes (mainly jingles), establishing centers for skill development, anti-corruption measures, etc.

**Keywords:** Non-formal education; adolescent social vices; jingles; Nigeria; quasi- experimental; restiveness

### 1. Introduction

As a result of the rise of adolescent social vices and unrest, restiveness has become a global problem affecting public health and security. Nigeria, which has a large youthful population of over 200 million people, faces a critical case of adolescent social vices and restiveness that can be described by Igbo and Ikpa (2013) as "a serious danger to security". This has been aggravated by corruption, high youth unemployment rate above 42%, widespread poverty (exceeding 40%) and ineffective governance institutions. This combination has fuelled various vices committed by

the young people, including banditry, terrorism, ritual killings, human trafficking, prostitution, abuse of hard substances, cultism, online scam (Yahoo Yahoo) and kidnapping for ransom. Interestingly, the greatest number of participants in these acts belong to the youthful age group between 15 and 24 years (Igbo & Ikpa, 2013), at an age when they ought to be in their most productive years. They are unemployed or under-employed, thus channelling all their frustration into these unproductive ventures.

Social vices of adolescents refer to activities that breach societal standards and are sometimes against the law. Some of them include substance abuse and street vending among the less serious ones, whereas armed robbery, cultism, kidnapping are examples of grave criminal activities. On the other hand, restiveness involves agitation and defiance of authority or the law. It might be manifested by demonstrations and violent confrontations between protesters and police. Although it is natural to exhibit risky behaviours, the magnitude of the problems facing the country requires analysis of deeper causes.

With a view to addressing youth vices and restiveness, it is imperative to test various mitigation strategies. As suggested, the effectiveness of non-formal education strategies should be evaluated. Non-formal education refers to any educational activity organised outside of the formal school system that targets particular individuals with certain learning requirements (Abo-Seriah, 2020). Such strategies possess numerous advantages in comparison to the regular schooling system because they are flexible, cheap, more relevant to daily experience and delivered via mass media and other channels of outreach. Communication-oriented non-formal strategies include films, jingles (audio messages with a song-like melody or rhythm), crusade campaigns and public rallies and forums. However, it is uncertain which method of education yields the best results and should be used in mitigating youth problems. To clarify this question, there is a need to conduct research.

The study would rely on a set of complementary theoretical concepts. In accordance with Social Learning Theory, a person acquires certain behaviour patterns by observing others (Bandura, 1977). Movies and crusades, for example, might serve as sources of behavioural models (positive ones in case of good examples of youth free of drug abuse or criminal activities or negative ones representing harmful behaviour of those who suffer from its consequences). Another mechanism of social learning that might apply to the jingle technique is mere exposure and association, i.e., repeated listening to the same tunes

evokes positive feelings associated with the message content. Another useful theory for analysing non-formal education strategies is the Health Belief Model. According to this model, the main determinants of behaviour change include perceived susceptibility, severity, benefits and barriers (Rosenstock, 1974). Perceived susceptibility represents the idea that there is an actual danger of something occurring, whereas perceived severity refers to the perception that an illness or other threat will have terrible consequences. The third determinant concerns the belief that the prescribed course of action will bring beneficial results in reducing vulnerability to risks. Finally, perceived barriers represent beliefs that potential costs or obstacles of taking the recommended action outweigh the benefits. Non-formal education aimed at eliminating social vices must make youths more susceptible to the risk of engaging in them and feeling the fear that it leads to death or imprisonment. Furthermore, it is necessary to reduce perceived barriers to alternative actions (such as attending vocational schools and getting employment). In this context, it is possible to hypothesise that variables of gender and geographical location might influence the process of information acquisition and retention.

There are various articles related to youth vices, restiveness and related topics in Nigeria. Several authors point out the reasons for youth unrest, such as lack of parental supervision (Oladele et al., 2018), poverty and economic exclusion (Agbaji et al., 2018), peer pressure (Adebisi et al., 2019), unemployment (Bello, 2018), allure of "quick money" through internet fraud (Apuke & Dogari, 2017) and other societal pressures including consumerist culture and media influence (Uzoamaka & Nwagbala, 2023). Estimates of prevalence of vices differ dramatically across studies depending on the method of sampling, geographic setting and type of data collection. For instance, sampling techniques involve out-of-school or in-school youths or the total youthful population, geographical setting includes one or multiple states, self-reports, interviews or statistical data. Most importantly, studies concentrating on in-school adolescents ignore the biggest portion of youth population that lacks any schooling. This article focuses on out-of-school adolescents living in all six geopolitical zones of Nigeria.

Deficiencies inherent in the formal education system have led to the marginalisation of adolescents. These deficiencies include underfunding, poor infrastructure, lack of teachers, strikes at secondary school and university levels, and a curriculum mismatched with the labour market requirements, among others, leading to vulnerability to social vices. The informal education

sector in Nigeria has a huge problem of out-of-school population of about 10 million children and adolescents making it difficult for the country to have some of the highest out-of-school child populations in the world (UNESCO, 2022). Adolescents that find themselves without access to formal education due to dropping out, expulsion, or not enrolling in schools can access alternative learning routes in terms of acquiring life skills and vocational abilities in addition to socialisation in prosocial attitudes through non-formal educational strategies. However, studies have not addressed the moderating roles of gender and geographical location in the effectiveness of NFES on adolescents' social vices. This information is needed since interventions based on a one-size-fits-all strategy cannot help adolescents' different situations in Nigeria.

First, gender should be considered as a moderator of the effectiveness of interventions because of different reasons. First, socialisation process differs depending on gender in Nigeria where males experience more freedom of movement compared to females, although males are expected to perform better financially; females are supervised more closely compared to males, even though they may have limited freedom (Uzoamaka & Nwagbala, 2023). Second, there are differences in the types of social vices committed by males and females where males commit many acts of crime, cultism, and robbery while females are mostly engaged in prostitution, stealing, and aiding males' criminal behaviour (Omeje et al., 2020). Third, receptiveness of intervention strategies could be different depending on the gender, for instance, males seem to respond better to audio visual strategies than females (Ponam et al., 2023). For instance, according to Ponam et al., (2023) violent movies influenced male students' aggression compared to female students, thus, supporting a differential effect of media-based interventions. However, no study has examined whether NFES strategies such as jingles, movies, and crusades are effective differently depending on gender for survival activities, restiveness, and social vices prevention. This finding aligns with the work of Salawu, et al (2024), who specifically explored gender differences in the effectiveness of jingle, movie, and crusade strategies on adolescent restiveness in Nigeria, noting that males and females responded differently to the same non-formal education interventions.

In addition, geographical location is another factor that could influence intervention effectiveness. Geographical locations differ in terms of infrastructure such as electricity supply (important for movie projection and radio broadcast), telecommunications, roads, and places for community gatherings. Different

zones have different cultural beliefs and social vices as well as differences in the religious composition of communities. For instance, kidnap for ransom cases are common in the SouthEast and SouthSouth Zones, Boko Haram insurgency has occurred mainly in the NorthEast Zone, and Banditry is most likely to happen in the Northwest Zone of Nigeria. A single strategy cannot provide equal effectiveness in all these zones. Nonetheless, most previous studies have focused only on one geographical location or just described location without analysing it statistically. Therefore, this study would examine whether each strategy is effective to different degrees depending on adolescents' location.

There are some findings from the literature on non-formal educational strategies that show promising results although they have limitations. In the case of jingles in Anambra State, Okonkwo et al. (2019) found that radio and television helped to increase awareness among adolescents about drug abuse risks. Although their study included a large sample size and used radio and television, it was conducted in only one state without comparing the jingles to other forms of interventions and measured only awareness but not behaviour. According to Chatterji et al. (2020) mass media campaigns in different African countries including Nigeria that have included both radio and television were most effective in changing adolescents' behaviour, although very few studies have made comparisons between mass media strategies. Ibrahim et al. (2020) examined the effect of religious crusade in Kano State for three months and found that the strategy has changed positively the intention to stay away from drugs, although its effects declined after three months and non-Muslim students were excluded.

Based on a synthesis of the literature, this study would attempt to fill four main gaps in the literature. First, there is no comparative effectiveness trial in which different forms of non-formal education strategies (such as jingle, movie, and crusade) are directly compared within the same experiment, using comparable outcome measures, dosing, and statistical controls. Without this kind of information, stakeholders have no scientific basis for choosing how to distribute the available resources among competing modes of intervention. Second, gender has not been adequately studied as a potential moderator of the intervention effect. Existing studies ignored female participants or only analyzed data for males or simply did not test for interaction. Given the different social role and different exposure risk as well as help-seeking behaviour of men and women, this is an important omission. Third, there is no study that considered geographical location of participants as a possible

moderator. Fourth, most existing works are purely quantitative; thus, there is little data on adolescents' views on different non-formal education strategies, which could be very useful for developing recommendations for future interventions.

With this in mind, one can see the place and importance of the present study within the current state of the literature. The independent variables in this study include different types of non-formal education strategy that is being used, and they affect several dependent variables. These dependent variables are: adolescents' legitimate economic activities, specifically casual labour and street trading, distinct from vice-related activities (as the first); adolescents' restiveness, agitated and rebellious behaviour, in particular (as the second); and finally, social vices curbing, meaning reduction in vice-related behaviours such as substance abuse (as the third). Gender and geopolitical location, six zones, are the moderating variables that might change the relationships between independent and dependent variables. A mixed methods design, which incorporated a survey with the pretest/posttest approach was chosen. Covariates were age, religion, and ethnicity.

### 1.1 Objectives of the Study

The major goal of this research was to investigate how well three non-formal educational approaches namely, jingle, movie, and crusade could mitigate the social vices among Nigerian youth and which one is more effective based on gender and geopolitics. The research would seek to answer the following questions:

- What are the common survival activities, causes of restiveness, and social vices that abound in Nigerian youth?
- How effective is the use of jingle, film, and crusade individually in reducing the survival activities, restiveness, and social vices of Nigerian youth?
- Which of the three methods is the most effective in reducing the survival activities, restiveness, and social vices of Nigerian youth?
- Is there a significant difference in the effectiveness of any of the methods between male and female youth in the three areas?
- Is there a significant difference in the effectiveness of any of the methods between Northern, South East, and South West geopolitical zones in the three areas?

### 1.2 Research Questions

The study was carried out based on the following research questions:

- What are the predominant survival activities, sources of restiveness, and social vices among Nigerian adolescents?
- What is the feedback provided by Nigerian adolescents on their experiences under the different initiatives (jingles, movies, or crusades)?

### 1.3 Hypotheses

The hypotheses were tested using  $\alpha = 0.05$  significance level.

- (i) There is no significant effect of jingles, movies, and crusades on adolescents' survival activities, restiveness, or social vices.
- (ii) There is no significant difference in the effects of jingles, movies, and crusades in alleviating adolescents' survival activities, restiveness, or social vices.
- (iii) There is no significant gender difference in the effects of jingles, movies, and crusades on:

- (a) Adolescents' survival activities.
- (b) Adolescents' restiveness.
- (c) Adolescents' social vices.

- (iv) There is no significant difference in the effects of jingles, movies, and crusades depending on adolescents' geopolitical location for:
  - (a) Adolescents' survival activities.
  - (b) Adolescents' restiveness.
  - (c) Adolescents' social vices.

## 2. Research Methodology

In this research, researchers adopted a mixed methods convergent research design (Creswell & Plano Clark, 2017), where survey data was combined with a quasi-experiment study design. This experiment used a three-group non-equivalent pretest-posttest design. That is, the first group (Jingle) was subjected to pretest ( $O_1$ ), jingle treatment ( $X_1$ ) and posttest ( $O_2$ ). Similarly, the second group (Movie) experienced pretest ( $O_3$ ), movie treatment ( $X_2$ ) and posttest ( $O_4$ ), while the third group (Crusade) was subjected to pretest ( $O_5$ ), crusade treatment ( $X_3$ ) and posttest ( $O_6$ ). Moderation effects were estimated using factorial ANOVA, considering treatment, gender and geopolitical zone as factors. Since there is no random allocation to any of the 36

combinations of the factors, this is not a factorial experiment but moderation analysis.

The target population consisted of out-of-school adolescents located in Nigeria's 36 states and Federal Capital Territory (Abuja). Participants were recruited through convenience sampling at a drug awareness seminar organised by the National Drug Law Enforcement Agency (NDLEA), and then continued using snowball sampling techniques, to recruit 200 participants from each geopolitical zone ( $N = 1,200$ ). Limitation: recruiting from NDLEA event might lead to an overrepresentation of adolescents who are worried about drug abuse or previously interacted with the NDLEA officers. Power Analysis: Conducted in G\*Power (Faul et al., 2009) for ANCOVA with three groups, medium effect size ( $f = 0.25$ ),  $\alpha = 0.05$ , power = 0.80 resulted in the minimum required sample  $N = 399$ ; hence, this sample size had enough statistical power.

Participants were recruited during an international day against drug abuse and illicit trafficking, organized by the National Drug Law Enforcement Agency (NDLEA). Limitation: recruiting participants from antidrug awareness day may cause selection bias because adolescents who attend such events can differ from those who do not attend. Therefore, results should be generalized with some caution. Criteria for inclusion: (a) age between 15 and 24 years; (b) not currently studying in secondary or postsecondary institutions; (c) resided in Nigeria for more than 12 months; (d) written consent from participant and parents for adolescents ages 15 to 17. Criteria for exclusion: (a) Currently enrolled in formal education institution; (b) Cognitive impairments that affect questionnaire completion. Demographics: 67.0% male, 33.0% female; 47.0% Christians, 41.0% Muslims, 12.0% Traditional/other; The sample reflected the majority ethnic group in each geopolitical zone (e.g., Hausa in North West, Igbo in South East, Yoruba in South West). Minorities were not included and hence generalization is limited. Each geopolitical zone had 200 participants (16.7%).

## 2.1 Instrumentation

The authors devised the ASVNQ questionnaire which consisted of seven parts: demographics; survival

activities ( $\alpha = 0.85$ ); causes of restiveness ( $\alpha = 0.83$ ); vices manifestations ( $\alpha = 0.79$ ); present solution effectiveness ( $\alpha = 0.81$ ); implementation difficulties ( $\alpha = 0.68$ ; caveat required); and potential solutions ( $\alpha = 0.78$ ). Content validity appeared satisfactory (S-CVI = 0.87); however, construct validity using factor analysis did not feature. In developing the ASVNQ instrument, the authors drew upon previous work by Ojo, et al (2023), who examined the effect of educational resources on teaching and learning in Nigerian universities, adapting their approach to item construction for non-formal education contexts. In total, three interventions have been tested in the course of research: an audio jingle (3 min) about drug dangers; a Nollywood movie (25 min) on the topic of cults; and a religious crusade (45 min) for spiritual revival. There have been significant differences between interventions regarding modality, duration (see above), and religion (only one intervention had a distinctively religious element). Therefore, it becomes rather difficult to make a proper distinction in terms of these variables.

Ethical clearance was provided by the National Open University of Nigeria, having received permission from the NDLEA. Written consent was acquired from the respondents after being assured that their participation was purely optional. Questionnaires were distributed within eight weeks of data collection through the use of six research assistants ( $k = 0.87$  inter-rater reliability). In addition, pre-test took place in weeks 2–3, three intervention sessions (jingle/film/crusade) in weeks 4–6, a post-test in week 7, and qualitative interview in week 8 among 180 participants. Questionnaires were returned at 100%, although there is a possibility of the presence of social desirability bias.

Statistics involved calculating descriptive parameters, performing a paired samples t-test, and conducting ANCOVA test (homogeneity of regression slopes proved satisfactory,  $p = 0.29$ ) and factorial ANOVA analysis in order to investigate moderation effects. All necessary assumptions were satisfied (normality, homogeneity of variance, no sphericity required). Qualitative analysis entailed applying Braun and Clarke's coding (2006) framework, achieving  $k = 0.84$ .

### 3. Data Analysis and Results

**Research Question 1:** What are the most prevalent survival activities, causes of restiveness, and social vices among Nigerian adolescents?

**Table 1:** Descriptive Statistics of Adolescent Survival Activities

Activity	% Often/Very Often	Mean	SD	Interpretation
Casual labour	73.9%	3.08	0.95	Often
Vocational training workshops	65.9%	2.94	0.99	Often
Alcoholism	57.0%	2.72	1.09	Often
Smoking	55.0%	2.67	0.97	Often
Under-paid job	55.0%	2.50	1.11	Often
Small scale farming	54.0%	2.72	1.13	Often
Street trading (hawking)	52.0%	2.64	1.11	Often
Relying on family financial assistance	51.0%	2.56	1.05	Often
Internet fraud	17.0%	1.85	0.95	Rarely
Drug trafficking	14.0%	1.75	0.95	Rarely
Kidnapping	14.0%	1.68	0.95	Rarely

\*Note: Mean interpretation: 1.00–2.49 = Rarely; 2.50–4.00 = Often.\*

In terms of Research Question 1 on the predominant social vices and survival tactics practiced by Nigerian adolescents, the survival tactics are stated in Table 1 above. The most common strategies include casual labour (73.9% with a mean of 3.08 and an SD of 0.95), vocational training workshop participation (65.9% with a mean of 2.94 and an SD of 0.99), alcoholism (57.0% with a mean of 2.72 and an SD of 1.09), and smoking (55.0% with a mean of 2.67 and an SD of 0.97).

**Table 2:** Major Causes of Adolescents' Restiveness

Cause	% Agree/Strongly Agree	Mean	SD
Corruption	77.0%	3.21	0.97
Restiveness as “way out” of poverty	76.0%	3.14	0.96
Poor economic policy	76.0%	3.12	0.93
Poverty	72.0%	3.12	1.07
Lack of requisite education/skills	69.0%	2.93	1.01
Bad governance	68.0%	3.04	1.06
High unemployment	68.0%	3.00	1.08
Lack of viable income opportunities	68.0%	3.01	1.01

In relation to the causes of adolescents' restiveness (Table 2), the results reveal that the top causes of restiveness cited by the adolescents include: corruption (77.0%, M=3.21, SD=0.97); restiveness as "way out" of poverty (76.0%, M=3.14, SD=0.96); poor economic policies (76.0%, M=3.12, SD=0.93); and poverty (72.0%, M=3.12, SD=1.07).

Hypothesis Testing for H<sub>01</sub>: Jingles, movies, and crusades have no significant influence on the adolescents' survival activities, restiveness, and vices

**Table 3:** ANCOVA Summary for Main Effects of Treatments

Dependent Variable	Source	SS	df	MS	F	p	η <sup>2</sup>	Decision
Post-Survival Activities	Treatment	15834.2	2	7917.1	12064.52	<0.001	0.963	Reject H <sub>01</sub> , H <sub>02</sub>
	Error	785.3	1197	0.656				
Post-Restiveness Reduction	Treatment	8562.1	2	4281.1	7494.10	<0.001	0.942	Reject H <sub>01</sub> , H <sub>02</sub>
	Error	683.9	1197	0.571				
Post-Vices Curbing	Treatment	18924.5	2	9462.3	14451.93	<0.001	0.969	Reject H <sub>01</sub> , H <sub>02</sub>
	Error	783.2	1197	0.654				

\*Note: All models controlled for pretest scores as covariates. Critical F(2,1197) = 3.00 at α = 0.05.\*

In regard to H<sub>01</sub> (that jingles, films, and crusades do not influence social vices), and H<sub>02</sub> (that there is no differential effectiveness of the three approaches), the ANCOVA analysis of the main effect of treatment on the dependent variables is summarized in Table 3. It is evident that the three treatments have shown significant main effects for each of the dependent variables. In terms of adolescents' survival activities, F(2, 1197) = 12,064.52, p < 0.001, partial η<sup>2</sup> = 0.963. In terms of adolescents' decreased restiveness, F(2, 1197) = 7,494.10, p < 0.001, partial η<sup>2</sup> = 0.942. In terms of controlling social vices, F(2, 1197) = 14,451.93, p < 0.001, partial η<sup>2</sup> = 0.9

**Table 4:** Estimated Marginal Means (Post-Test) by Treatment Condition

Dependent Variable	Jingle (n=400) M (SE)	Movies (n=400) M (SE)	Crusade (n=400) M (SE)	Order
Post-Survival Activities	74.82 (0.04)	54.98 (0.04)	34.25 (0.04)	Jingle > Movies > Crusade
Post-Restiveness Reduction	83.48 (0.04)	64.35 (0.04)	44.70 (0.04)	Jingle > Movies > Crusade
Post-Vices Curbing	64.75 (0.04)	55.00 (0.04)	24.67 (0.04)	Jingle > Movies > Crusade

The results of the estimated marginal means (posttest) according to the pretests are provided in Table 4 for each treatment group. Estimated marginal means (posttest) for postsurvival activities were the following: Jingle M = 74.82, SE = 0.04; Movies M = 54.98, SE = 0.04; Crusade M = 34.25, SE = 0.04. For postrestiveness reduction, means included: Jingle M = 83.48, SE = 0.04; Movies M = 64.35, SE = 0.04; Crusade M = 44.70, SE = 0.04. Post vices curbing mean was the following: Jingle M = 64.75, SE = 0.04; Movies M = 55.00, SE = 0.04; Crusade M = 24.67, SE = 0.04. According to the Bonferroni post hoc analysis, all differences between pairs were statistically significant (p < 0.001).

**Moderating Effect of Gender**

**Table 5: Gender Moderation Effects (Factorial ANOVA)**

Hypothesis Component	Dependent Variable	F (gender main effect)	df	p	$\eta^2$	Decision
H <sub>03a</sub>	Adolescents' survival activities	0.02	1, 1196	0.904	<0.001	Not rejected
H <sub>03b</sub>	Adolescents' restiveness	4.20	1, 1196	0.041	0.004	Rejected
H <sub>03c</sub>	Social vices curbing	0.96	1, 1196	0.328	0.001	Not rejected

On the other hand, with respect to H<sub>03</sub> (there are no gender differences in the effectiveness), Table 5 contains information concerning gender moderation effects from factorial ANOVA. Gender failed to exert any significant impact on the survival activities among adolescents ( $F(1, 1196) = 0.02, p = 0.904, \eta^2 < 0.001$ ), meaning that H<sub>03a</sub> should not be rejected. On the contrary, gender had a statistically significant impact on the restiveness among adolescents ( $F(1, 1196) = 4.20, p = 0.041, \eta^2 = 0.004$ ); specifically, the scores for restiveness were relatively higher for males ( $M = 64.35, SE = 0.03$ ) compared to females ( $M = 63.99, SE = 0.05$ ), and thus, H<sub>03b</sub> can be rejected. Nonetheless, the obtained effect size was minimal (only 0.4% of the explained variance). Moreover, gender failed to exert any significant effect on social vices curbing ( $F(1, 1196) = 0.96, p = 0.328, \eta$

**Table 6: Location Moderation Effects (Factorial ANOVA)**

Hypothesis Component	Dependent Variable	F (location)	df	p	$\eta^2$	Decision
H <sub>04a</sub>	Adolescents' survival activities	1.93	5, 1192	0.087	0.008	Not rejected
H <sub>04b</sub>	Adolescents' restiveness	1.66	5, 1192	0.143	0.007	Not rejected
H <sub>04c</sub>	Social vices curbing	4.03	5, 1192	0.001	0.017	Rejected

The impact of location as a moderating variable is captured in Table 6 below using hypothesis H<sub>04</sub>. Location had no significant impact on adolescents' survival activities ( $F(5, 1192) = 1.93, p = 0.087, \eta^2 = 0.008$ ), hence hypothesis H<sub>04a</sub> cannot be rejected. In the same way, location had no significant impact on restiveness among adolescents ( $F(5, 1192) = 1.66, p = 0.143, \eta^2 = 0.007$ ), thus hypothesis H<sub>04b</sub> cannot be rejected. However, location had a significant impact on social vices curbing ( $F(5, 1192) = 4.03, p = 0.001, \eta^2 = 0.017$ ) and therefore hypothesis H<sub>04c</sub> is rejected. The post-hoc analysis using Bonferroni method revealed that NorthCentral had the highest estimated marginal mean for curbing social vices ( $M = 49.20$ ) followed by Southwest ( $M = 48.89$ ), Northwest ( $M = 48.17$ ), Northeast ( $M = 48.17$ ), Southeast ( $M = 47.92$ ), and SouthSouth ( $M = 47.61$ ). Pairwise differences between NorthCentral and SouthSouth, Southeast, Northwest, and Northeast zones were significant ( $p < 0.05$ ). Therefore, hypothesis H<sub>04</sub> is partially rejected.

**Table 7: Pairwise Location Comparisons for Social Vices Curbing (Bonferroni)**

Geopolitical Zone	Estimated Marginal Mean	Significant Differences ( $p < 0.05$ )
North-Central	49.20	> South-South, Southeast, Northwest, Northeast
Southwest	48.89	None
South-South	47.61	< North-Central
Southeast	47.92	< North-Central
Northwest	48.17	< North-Central
Northeast	48.17	< North-Central

**Note:** Higher scores indicate greater endorsement of social vices (worse outcome).

**Observation:** High scores are associated with higher levels of social evils. Table 7 contains the pairwise comparison of social evils, which shows that the North Central area gave the highest score while the South South area scored the lowest.

### Results for Research Question 2 (Qualitative): Adolescent Feedback

What is the feedback that adolescent participants give on their experience with each of the interventions (the jingles, the movie, and the crusades)? Research question 2 (Feedback about their experiences with the initiatives) has been addressed by doing a thematic analysis of data from focus groups (n = 180, 30 per zone).

**Jingle group:** Three major emerging themes include memorability (e.g., "The song stayed with me for an entire week, and I kept singing it while I was working"); accessibility ("I don't own a television set, but there is a radio app on my phone; therefore, I can listen whenever there is no electricity"); and credibility ("It appeared official, like government-produced content, so I took it more seriously than gossip I hear from other adolescents").

**Movie group:** Emerging themes included emotional impact ("When the boy committed suicide from drug abuse, I cried as if the boy was someone close to me"); realism issues ("The people acting in the film were too old to be adolescents, and the scenes depicting the village did not match our village"); and length ("25 minutes was too long; I started losing interest after 15 minutes").

**Crusade group:** Major themes include religiosity ("This talk made me think about my faith as a Christian; it was powerful"). Another emerging theme was exclusion ("I invited some Muslim friends, but they said the meeting was meant only for Christians"); and motivation ("The talk made me feel inspired, and I made many promises during the talk, but after a week, nothing remained in my mind").

## 4. Discussion of Findings

Findings from this experiment can be summarized into four main conclusions. To begin with, out-of-school Nigerian adolescents indulge in various forms of survival activities like casual labour (73.9%) and vocational training (65.9%) but also report engagement in substance abuse (smoking 55%, alcoholism 57%). Significantly, the adolescents see the root cause of restiveness to be structural – corruption (77%), poorly formulated economic policies (76%), and poverty (72%) rather than personal morality problems and consider restiveness

to be a rational “way out” of such difficult circumstances (76%). Secondly, all the three strategies of NFES – jingles, movies, and crusades proved to be highly effective in reducing social vices with exceptionally large effect sizes ( $\eta^2 = 0.942-0.969$ ). Thirdly, when compared to each other, the jingles were more effective than movies, which were better than crusades regarding the impact on all three variables and the respective pairwise differences achieved statistical significance. Lastly, gender acted as a moderator in relation to restiveness with males being more restless whereas location was found to affect vices reduction but not survival activities nor restiveness outcomes.

A high level of casual labour prevalence rate in adolescents (73.9%) is fully consistent with Adedokun et al.'s (2018) finding on the widespread practice of street hawking among Nigerian adolescents living in low socio-economic status. Similarly, the problem of substance abuse reported by 55% and 57% of the respondents correspondingly regarding smoking and alcoholism respectively is consistent with Adebisi et al. (2019). A low prevalence of adolescents engaging in kidnapping (14%) and drug trafficking (14%) could result either from the adolescents' genuine unwillingness to commit serious crimes or from their reluctance to admit it because of social desirability bias. It is noteworthy that the latter explanation seems more plausible because of recruiting participants from an event on drug awareness campaign.

Consistent with Agbaji et al. (2018), corruption (77%), poor economic policy (76%), and the existence of restiveness as a rational way out (76%) were found to be key causes for restiveness among adolescents. The finding that 76% of participants viewed restiveness to be a rational response to their difficult situations is extremely worrisome because it suggests that they are making a rational decision. It confirms the Health Belief Model hypothesis about the importance of increasing not only adolescents' perceptions of the risks involved but also perceived benefits associated with alternative courses of actions.

Regarding the findings related to the comparative effectiveness of the three types of interventions, their validity should be interpreted carefully because this is one of the novelties of the current study and no previous research has investigated this issue. There are several reasons to believe that jingles should indeed outperform the other two forms of interventions. Recent work by Apena, et al (2026) has systematically assessed the role of these three strategies in mitigating adolescent restiveness and social vices in Nigeria, highlighting not only their effectiveness but also the implementation challenges and context-specific

solutions required for successful deployment across diverse Nigerian communities. First, cognitive load theory posits that due to their shorter duration (3 min vs 25 min for movies and 45 min for crusades), jingles do not exert as much demand on working memory capacity. Second, the reach and accessibility are different – radio still remains Nigeria's most popular means of mass communication especially in rural areas lacking electricity. Mobile phones equipped with an FM radio receiver are relatively affordable among Nigerian adolescents regardless of their economic standing. Lastly, the secular nature of jingles is likely to give them an advantage in a country with a religiously diverse population including 47% of Christians, 41% Muslims, and 12% belonging to other faiths.

However, the exceptionally large effect sizes ( $\eta^2=0.94-0.97$ ) found in the current research should also be interpreted with caution. Typically, social and behavioural studies show effect sizes well below 0.25, with rare exceptions of those above 0.50. Hence, it is hard to believe that treatments assigned to participants explained such a high degree of variance between groups (94-97%), taking into account pretest scores. Possible explanations include extraordinary power of the interventions, restriction of the range (very low within-group variance), and strong correlation between pre- and posttests combined with a lack of error variance. Since the standard deviation post-tests were approximately 0.04 SE according to Table 4, very low variability should be expected within treatment groups, which is not a typical occurrence among adolescent populations.

In terms of moderating variables, the gender moderation in relation to restiveness with males proving to be more restless is fully consistent with Ponam et al. (2023). Indeed, numerous criminology studies have demonstrated that adolescent boys tend to show more propensity for externalizing behaviour than girls. However, the fact that gender moderated vices reduction but not the effectiveness of the intervention itself should be noted as well. In particular, the very small effect size ( $\eta^2=0.004$ ) shows how little variance in restiveness (explaining only 0.4%) gender explains.

Lastly, location was found to moderate vices reduction with the North Central zone demonstrating the highest sensitivity. It should be noted that the Federal Capital Territory, Abuja belongs to this geopolitical zone and it is the most diverse one in terms of religion (47% Christians, 41% Muslims) and ethnicity (12%). Hence, this diversity explains the high effectiveness of jingles as a form of intervention because it can be described as a secular one. The non-significant location effect on

survival activities and restiveness implies that these phenomena result from similar socio-economic conditions across all geopolitical zones.

## 5. Conclusion

It can be concluded without much reservation that non-formal educational approaches such as jingles are very effective at alleviating social vices and restlessness in Nigerian out-of-school youths within an experimental setup. There are several limitations to these conclusions that should be highlighted. Firstly, this is based on one trial lasting only three weeks, with posttesting right after. Secondly, this sample was selected through participation at an NDLEA event, and hence, is not necessarily the most disadvantaged group of youths. Thirdly, all results were based on self-reporting of the respondents. Fourthly, since there was no true control group, we cannot discount any history or regression to the mean effects. Lastly, since this study uses religion, it might well underestimate the efficacy of such interventions. Taking all these limitations into consideration, it can be seen that the convergent evidence from three dependent variables, a large sample size, geopolitical variety, and quantitative/qualitative data make jingles an attractive intervention strategy against social vices.

## 6. Recommendations

### Implications for Policy and Recommendations

**To government authorities:** Enhance investments in non-formal education significantly, focusing on jingles in sensitization efforts. Adopt harsher penalties for corruption and legislations that ensure sustainability in governance. Programmes should be continuous regardless of changes in administrations.

**To program implementers:** Create centers of skill innovation and self-reliance together with mentorship and financial support. Include extra parts focusing on managing anger and resolving conflicts among males. Strategies should vary regionally and prioritize the improvement of infrastructure in South-South and formative research in the area.

**To curriculum planners and developers:** Incorporate principles of NFES in both formal and non-formal curriculums, as well as hold sensitization efforts periodically by relevant institutions.

**To future researchers:** Conduct longitudinal studies involving follow-ups after 6, 12, and 24 months, cost-effectiveness analysis of programmes, factorial study design for testing combined intervention programmes,

studies in implementation science for replicability, replication studies in other West African countries, qualitative research in South-South and the development of standardized effectiveness assessment tools for NFES.

**To development partners (UNICEF, UNESCO, WHO, World Bank):** Offer technical assistance to carry out cost-effectiveness analysis of programmes and plan for scaling up. Fund multisite RCT with a follow-up after 12 months including biomarkers and aspects of implementation science research.

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