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Risk Reduction Intervention Services for In-school Adolescents in the rural Areas of Abia State of Nigeria

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Abstract

Introduction: Risk reduction intervention is meant to provide enhanced and desirable interventions for HIV prevention among adolescents especially the in-school. Adolescents have been identified as the most vulnerable groups that can easily acquire human immunodeficiency virus (HIV) and other sexually transmitted diseases (STDs). Therefore, adolescents are the appropriate target for HIV prevention efforts. Most interventions for adolescents focus on providing AIDS-related education with the assumption that improving knowledge would enable adolescents to protect themselves from sexually transmitted infections. Numerous studies have shown that using class-room education alone is insufficient in reducing adolescents' risky sexual behaviours. Therefore, this study used role-plays and peer facilitation for the study.

Materials and Method: The study used role-play and peer facilitation for the intervention strategy. The theme of the role-play was 'My Future is My Choice' (MFMC) intervention which was aimed to reduce HIV risk behaviours among sexually inexperienced adolescents. The role-play was carried out by 4 peer leaders who were trained in the theoretical framework of role-plays and peer facilitation by a consultant. With mastery and experience they carried out the role play in a regular classroom section for over 3 class periods, co-facilitated with the assistance of a volunteer teacher. A unique feature of this intervention was the dual focus on strategies that influenced both individual risk factors (i.e., attitudes, behavioural skills) and social environments (e.g., peer resources).

A school was chosen by simple random sampling for the intervention. In the school chosen, a total sample of 65 students in senior secondary classes 2&3 (SS2&3) were included in the study. These were the students considered to be sexually active who can respond to the questions in the questionnaire. Self-administered pre-and post-questionnaire were completed by the students. The results were analysed using frequency tables, descriptive and inferential statistics.

Results: The students studied were between the ages of 13-18 years. There was evidence that the role play 'My Future is My Choice' (MFMC) intervention created positive effects on reduction of HIV risk behaviours among the sexually inexperienced participants aged 13–18. Perceptions on methods of preventing risk reduction behaviours were also positively impacted by the intervention as 12(18.5%) and 34(52.3 %) of the respondents realized after post- intervention that having sex with someone outside marriage and being transfused with infected blood respectively Will constitute risk to HIV infection.

Conclusion: The role play which used the theme 'My Future is My Choice' (MFMC) intervention provided safer choices for reducing one or more measures of sexual risk behaviours among the sexual inexperienced respondents. It created the opportunity for the students to recognize that engaging in unprotected sex constitutes high risk for HIV, other sexually transmitted infections and pregnancy.

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Introduction

The burden of HIV among adolescents in sub-Saharan Africa calls for urgent interventions. With the burden of HIV in sub-Saharan Africa, some countries have the sero-prevalence among young adults exceeding 30% [1,2]. The poor economic situations in most developing countries including Nigeria, have made biomedical prevention and treatment methods for HIV simply not affordable to most citizens [3,4]. Therefore, using intervention strategy to reduce sexual risk behaviours is the best option for preventing HIV infection among adolescents, especially the in-school adolescents.

Although there is abundant literature on behavioural interventions for adolescents' training and practice in specific skills on condoms use, there is growing evidence that such interventions when adapted to the local culture can positively influence adolescents' sexual risks, perceptions and knowledge on HIV infection but proof is lacking on their effectiveness in reducing unprotected sex among adolescents [5].

Research has shown that it is extremely difficult to achieve behavioural change among adolescents who have already initiated sexual activity. It is therefore, more beneficial to prevent HIV infection among sexually-inexperienced adolescents than the sexually active ones [6,7]. Meanwhile, studies have found that the increasing prevalence of HIV infection among adolescents, gave rise to implementing numerous educational and behavioural interventions that produced varying successes in reducing sexual risks [8,9].

Research has provided some evidences showing that 'My Future is My Choice' intervention can reduce rates of HIV sexual risk behaviours among sexually inexperienced adolescents. In addition to this, researchers have also argued that adolescents can reduce the practice of unprotected sexual activity if intervention strategies that encourage them to adopt competencies in all aspects of HIV prevention measures are used [10]. However, some researchers have advised that HIV prevention interventions which are expensive, time-consuming, and extraordinarily difficult to implement because of the need to include counseling for safer sex, treatment for sexually transmitted infections, as well as monitoring participants' adherence to the interventions provided should be avoided [11].

The differential effects of HIV risk intervention on sex have been reported among adolescents, thereby, prompting some researchers to recommend sex-specific intervention programmes for adolescents rather than that of generic. Issue of concern in intervention for adolescents is that of the effects of emphasizing 'safer sex' through 'abstinence only' to the sexually inexperienced adolescents. Some researchers argue that using interventions that focus on discussions on sexual relationships may hasten the initiation of sexual intercourse [12]. Others contend that if adolescents engage in high rates of unprotected sex before participating in HIV risk reduction interventions, that such adolescents are not likely to abstain totally from having further sexual activity [13,14]. Others maintain that in the post-intervention period, that virgins who have initiated sex will be more likely to use condoms during sex than others. Though few studies specifically addressed this issue, researchers have found that role plays that stress more on 'safer sex' intervention will prolong virginity among adolescents and also enable them experience positive intervention effects especially those that were sexually inexperienced at baseline or pre-intervention [15].

Although increased sexual activity for those with multiple sexual partners who do not use condom will escalate the risk of HIV infection, available studies demonstrate that a behavioral intervention that targets risk reduction can decrease HIV incidence among these adolescents [16,17]. However, researchers have suggested role plays as feasible intervention strategy that can assess the efficacy of risk-reduction counseling on sexually active adolescents [18,19]. Realizing that schools are ideal settings to reach sexually inexperienced adolescents, before they initiate in sexual activity, the study concentrated on in-school adolescents for the study. In this study, role play was used for sex specific adolescents as an intervention strategy for HIV risk reduction that will be capable of disseminating effective behavioral interventions.

Materials and Methods

The study adopted role play which focused on MFMC strategy. The study used a randomly selected sex specific (girls) secondary school in the community. The girls' secondary school chosen represented the sex specific sample used for the intervention. In this study, all the SS2&3 students in the selected girls' secondary community school were studied. These were the students considered to be sexually active who can respond to the questions in the questionnaire. The study was conducted in May 2020.

The role-play was carried out by 4 peer leaders after being trained in the theoretical framework of role-plays and peer facilitation by a consultant. With mastery and experience after the training, the peer leaders carried out the role play in a regular classroom section for over 3 class periods. This was co-facilitated with the assistance of a volunteer teacher in the school. A unique feature of this intervention was the dual focus on strategies that influenced both individual risk factors (attitudes, behavioral skills) and social environments (peer resources). Also, the intervention sessions had varieties of narratives, facts, exercises as well as time for questions and discussions. There were emphases on abstinence and on how to protect selves from unwanted sexual intercourse.

The role play consisted of theoretically-based interventions that incorporated behavioural skill training and other strategies that are aimed at improving adolescents' attitudes to HIV prevention. The theoretical aspect of the role play focused on the understanding measures for HIV risk reduction and these were expanded to include behavioural and emotional factors associated with HIV risks. The comprehensive primary prevention approach used ensured that adolescents who are not engaging in high-risk behaviours received prevention services before they initiate themselves in risky sex. The target approach to the study was to minimize new cases of HIV infection among in-school adolescents. The role play presented provided the researchers with several potential advantages which included: having access to larger numbers of adolescents, the likelihood of positively influencing behaviour change at individual and peer group levels, as well as the possibility of monitoring adolescents' behavioural change longitudinally. During the role play, the following four intervention areas were stressed: group-based interactive HIV prevention intervention, motivation to adopt abstinence for HIV risk reduction, safer sex building skills and intensive AIDS education. Condom use was avoided so as not to infuriate the school authorities who felt that emphasizing condom use during the intervention will result to negative effects like increasing the sexual desires of the adolescents.

The study used self-administered pre- and post-questionnaires. These were retrieved by the researchers at the completion of each set of the questionnaire. Data were analysed qualitatively and quantitatively using tables, percentages and inferential statistics.

Ethical Consideration

The ethical committee of the Abia State University Teaching Hospital approved the project before starting. The consents of the Director Ministry of Education as well as that of the Principal of the community school studied were got before the commencement of the study. The teachers' written consent was obtained prior to the administration of the questionnaire. The students' consent was obtained orally before the questionnaire administration and the respondents' anonymity was protected by ensuring that no individual identifiers existed in the instruments or in the electronic data set.

Results

Respondents' Demographic Characteristics

The respondents studied were between the ages of 13-18 years with mean age 15.75 years (SD ± 0.936). See tables 1&2

The respondents and the people they live with were explored. From table 3, a good number of the respondents 38(59.4%) are living with their fathers and mothers. See table 3 for details.

The respondents and their classes are stated in table 4 below. From the table, 38(58.5%) of the respondents are in SS3.

The respondents' knowledge on causes of HIV was explored. From table 5, 52(80%) and 63(96.9%) of the respondents at pre-intervention and post intervention respectively, were aware that HIV is a virus infection. Also 9(13.8%) of the respondents during the pre- intervention and 1(1.5%) during the post-intervention were not sure whether HIV is caused by either virus, bacteria or fungi.

The respondents' knowledge of what constitutes risk for HIV infection was assessed. From table 7, 28 (43%) of the respondents during the pre-intervention had no idea of what constitutes HIV risk, while during the post-intervention, only 1(1.5%) of the respondents had no idea. Table 6 contains details of the responses.

The respondents were also asked how HIV can be transmitted from one person to another. From their responses, 5(7.7%) of the respondents stated during the pre-intervention that one can be infected by sharing needles or razor blades with others while 17(26.2%) respondent during the post-intervention responded that sharing needles or razor blades with others can cause HIV infection. Table 7 contains other views of the respondents.

The respondents were asked to state whether they have shared needles and razor blades with others. The responses in table 8 showed that 17(26.2%) of the respondents during the pre-intervention and 23(35.4%) during the post intervention accepted that they have shared needles and razor blades with others.

The test is not statistically significant (Fisher's Exact test) of P value <0.05 with Fisher's Exact test of P value of .342 of double sided.

The respondents who have been approached for sexual relationships were assessed. Table 9 shows that 26(40%) of the respondents have been approached for sexual relationships.

The respondents who have had sexual relations with those who approached them for sex were also explored. Table 10 showed that 4(6.2%) of the respondents said they have had sexual relations with those who approached them for sex.

The respondents who said they have had sex were asked what they used to prevent pregnancy and HIV infection. From the responses in table 11, 8(12.4%) of the respondents said they used nothing to protect themselves from pregnancy and HIV infection while others said they used medicine, lubricant and condom. See table for details.

The respondents were asked to suggest how their mates can prevent HIV infection and pregnancy. Table 12 contains their suggestions. From the table, 22 (33.8%) said not having boyfriend will help to prevent pregnancy and HIV infection while 20(30.8%) said not visiting boys in their houses. See table for other suggestions.

Discussion

The positive outcome measures of the MFMC intervention for the in-school adolescents focused on reduction in HIV infection, and sexual risk behaviours. The results of the pre-intervention and post-intervention when compared showed that successes were recorded on abstinence and safer sex decision-making as well as on HIV risk intentions and perceptions. Chi-square statistics were employed for statistical testing in these comparisons and there were no statistically significant effects at each interval.

The research which used 'My Future is My Choice' (MFMC), intervention that succeeded in reducing HIV risk behaviours among sexually inexperienced participants showed that the emphasis on 'Safer Choices' reduced the desire for unprotected sex as 22(33.8%) and 20(30.8%) of the respondents suggested that not having boyfriends and visiting boys in their houses respectively will help to prevent HIV infection and pregnancy. These suggestions are capable of delaying

Table 1. Respondents' Ages in years

Age in years	Frequency	Percentage
13 – 15	25	39.1
16 – 18	40	60.9
Total	65	100

Table 2. Mean age of the respondents

Variable	Mean	Medium	Mode	Std. Dev.	Variance	Range	Min	Maximum
Age as at last birthday	15.75	16	16	0.936	0.875	4	14	18

Table 3. Respondents and people they are living with

Those respondents live with	Frequency	Percentage
Father and mother	38	59.4
Mother only	11	17.2
Father only	3	4.7
Close relation	12	18.8
Total	65	100

Table 4. Class of the respondents

Variable	Frequency	percentage
SS2	27	41.5
SS3	38	58.5
Total	65	100

Table 5. Respondents' knowledge on causes of HIV infection

Causes of HIV	Pre-and post-intervention		Total
	Pre-intervention	Post-intervention	
Virus	52(80%)	63(96.9%)	115(88.5%)
Bacteria	1(1.5%)	0(0%)	1(.77%)
Bacteria and fungi	3(4.6%)	1(1.5%)	4(3.1%)
None of the above	9(13.8%)	1(1.5%)	10(7.7%)
Total	65(100%)	65(100%)	130(100%)

Table 6. Respondents and risks of HIV infection

Risks of HIV infection	Pre-intervention	Post-intervention	Total
Having sex with anyone outside marriage	9(13.8%)	12(18.5%)	21(16.2%)
Having sex with animals	0(0%)	1(1.5%)	1(.77%)
Sitting close with an infected person	5(7.7%)	0(0%)	5(3.8%)
Shaking hands with infected person	7(10.8%)	0 (0%)	7(5.4%)
Using the same toothbrush with an infected person	2(3.1%)	8(12.3%)	10(7.7%)
Wearing same dress or shoes with someone with HIV	4(6.2%)	0(0%)	4(3.1%)
Using the same needle for injection	2(3.1%)	9(13.8%)	11(8.5%)
Using public toilet	3(4.6%)	0(0%)	3(2.31%)
Being transfused with infected blood	5(7.7%)	34(52.3 %)	39(30%)
No idea	28(43%)	1(1.5%)	29(22.3%)
Total	65(100%)	65(100%)	130(100%)
			P=.742

Table 7. Respondents and common modes of transmitting HIV

How HIV can be transmitted	Pre-intervention	Post-intervention	Total
By hugging infected person	12 (18.5%)	0(0%)	12(9.2%)
By sharing food with infected person	6(9.2%)	0(0%)	6(4.6%)
By using public toilets	5(7.7%)	3(4.6%)	8(6.2%)
By using same Razor blades or needles with others	5(7.7%)	17(26.2%)	22(16.9%)
By using same bath towels with infected person	10(15.4%)	2(3.1%)	12(9.2%)
By kissing others	11(16.9%)	22(33.8%)	33(25.4%)
By having unprotected sex	7(10.8%)	21(32.3 %)	28(21.5%)
By shaking hands with others	7(10.8%)	21(32.3 %)	28(21.5%)
Total	65(100%)	65(100%)	130(100%)

Table 8. Respondents who have shared needles with others

Have shared needles and razor blades with others	Pre-intervention	Post-intervention	Total
Yes	17(26.2%)	23(35.4%)	40(30.8%)
No	48(73.9%)	42(64.6%)	90(69.2%)
Total	65(100%)	65(100%)	130(100%)

Chi-Square Test

Test statistics	Value	Df	Asymp. Sig (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-Sig. sided)
Pearson Chi-Square	1.173[a]	1	.279		
Continuity Correction	.797	1	.372		
Likelihood Ratio	1.177	1	.278		
Fisher's Exact Test				.342	.186
Linear-by-Linear Association	1.164	1	.281		
N of Valid Case	130				

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.84

b Computed only for a 2x2 table

Table 9. Respondents who have shared needles with others

Have been approached for sex	Frequency	Percentage
Yes	26	40
No	39	60
Total	65	100

Table 10. Respondents who have been approached for sexual relationships

Have had sex	Frequency	Percentage
Yes, I have had sex with males	4	6.2
No, I have not had sex with anybody	22	33.8
Not applicable	39	60
Total	65	100

Table 11. Things used to protect pregnancy and HIV infection

What is used to protect pregnancy and HIV infection	Frequency	Percentage
use lubricant during sex	1	1.5
Takes medicine after sex	2	3.1
Uses condoms for sex	1	1.5
Nothing is used	8	12.4
Not applicable	53	81.5
Total	65	100

Table 12. Respondents' suggestions on how to prevent HIV infection and pregnancy to other school mates

suggestions	Frequency	Percentage
Avoid having boyfriends	22	33.8
Avoid visiting boys in their houses	20	30.8
Having sex with the opposite sex only	9	13.8
Not having sex at all	14	21.5
Total	65	100

initiation of sex. This finding also collaborated with that of [10,14] which argue that if HIV risk reduction intervention is expanded to include behavioural skills training and strategies that will improve attitudes to HIV prevention, that adolescents who have not engaged in high-risk behaviours are likely not to initiate in risky sex thereby, result to the greatest impact on reducing new cases of HIV among them.

The fact that 5(7.7%) of the respondents during the pre-intervention had the view that one can be infected by sharing needles or razor blades with others and after the intervention, 17(26.2%) of the respondents realized that sharing razor blades or needles with others constitutes risk for HIV infection showed that successes were recorded after the MFMC intervention to the adolescents. Also as high as 28(43%) of the respondents during the pre-intervention had poor knowledge of what constitutes HIV risks and after the post-intervention, only 1(1.5%) of the respondents showed poor knowledge suggest the benefits of the intervention. These positive intervention effects appear to have been contributed primarily by changes among the respondents' perception on what constitutes HIV risk reduction.

The MFMC intervention used appears to have encouraged the adolescents to freely discuss their past sexual experiences among themselves. Although the rates of discussion were equal both during pre-intervention and post-intervention periods, respondents easily reported their past sexual relationships and other HIV risk behaviours. About 26 (40%) of the respondents reported that they have been approached for sexual relationships and 4(6.2%) of them said they have had sex with those who approached them for sex. Also 17(26.2%) of the respondents during the pre-intervention and 23(35.4%) during the post intervention accepted that they have shared needles and razor blades with others. However, an insignificant number of the adolescents 1(1.5%) respectively reported that they use lubricants, take medicines and use condom after sex to protect themselves from HIV infection and pregnancy, while 8 (12.4%) said they use nothing after sex.

Conclusion

The MFMC intervention for the in-school adolescents was associated with decrease in intentions to share sharp objects and to engage in multiple sex partners. Also it was associated with increase in adolescents' knowledge on what constitutes risk to HIV infection. However, the desire to adopt abstinence and safer sex intentions increased at baseline (pre- intervention) and this increase became even greater during the post-intervention period, although the difference was not statistically significant. Therefore, national implementation of 'My Future is My Choice' intervention for adolescents is encouraged. It will be important to corroborate the self-reports of the intervention effects by using specific sex population instead of generic. Monitoring the effects of the intervention will also be necessary so as to help ensure that the adolescents are indeed given every opportunity to positively shape their futures. For more acceptability of MFMC intervention, emphasis on condom use for sexually inexperienced adolescents should be minimized for HIV risk reduction.

In summary, based on the findings of the study, and those of a few other investigators carried out in relevant cultural settings, MFMC is an ideal strategy for in-school adolescents and could also be cautiously used for other classes of adolescents, though adaptation process requires significant time and resources to achieve. Finally, considerations should be given to the benefits of using sex-specific interventions for adolescents.

Implications of the Findings

The findings of the study provide evidences on several important issues that are relevant to the control of HIV infection among sexually inexperienced in-school adolescents in a developing country like Nigeria. First of all, there is the understanding that properly designed face-to-face HIV risk-reduction interventions can reduce HIV risk behaviours among adolescents [13]. Realizing the limited time and resources to develop interventions for HIV risk reduction, it is therefore necessary to adapt the intervention strategies that will meet what is socially and culturally acceptable to the geographical settings of Nigeria. The practice of laying much emphasis on condom use for HIV prevention among sexually inexperienced adolescents was minimized because emphasizing condom use among adolescents

who are initially sexually inexperienced can give rise to erratic supply of condoms and thereby result to abuse in the usage. The main concern of the researchers with the use of this approach was to stress on abstinence so that the respondents will understand the meaning of risk and protective behaviours associated with safer sexual practices in consonance with the culture. Thus, creating full awareness on the benefits of abstinence encouraged successful adaptation of the intervention. This study suggests that using MFMC as intervention strategy for in-school adolescents will result in reductions in sexual risk behaviours.

A second issue addressed by the findings is that of the effects of the intervention according to sex. This intervention is grounded on the assumption that intervention on decision-making for sexual activity is a function of both sexes in the relationship, but the investigation by [14] argues that this is not applicable in all settings, that interventions are more effective when specific sexes are separately studied. The study therefore, considered it important to use only one sex (females in the present study) so as to record the extent to which they benefit from MFMC. The findings showed evidence that the use of specific sex in the intervention produced improved result during the post-intervention period. In summary, as also reported by other studies, that using specific sex for MFMC intervention will be more beneficial than using both sexes [18].

Another issue of concern in the finding is the effects of stressing 'safer sex' and 'abstinence' to sexually inexperienced adolescents. There is the concern by school authorities during the study that interventions that focus on discussions on sexual relationships for sexually inexperienced adolescents will aggravate the desire to initiate sexual intercourse thereby, giving rise to high rates of unprotected sex at the time of the sexual initiation. However, others contend that there is no evidence to support this view, and that rather, adolescents who did not participate in such interventions before the time of sexual initiation are likely to engage in unprotected sex. However, the findings of the study did not provide any evidence that discussing safer sex and abstinence aggravated sexual initiation among the intervention participants rather, the discussion on safer sex and abstinence gave the adolescents the opportunity of reporting their sexual experiences which enabled the researchers to note areas to focus on.

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