

Impact of Health Education on the Knowledge of Reproductive Health and Risky Sexual Behaviours among Senior Secondary School Students in Rivers State

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Abstract

Health education is an effective tool in curbing this unsafe behaviours and unintended pregnancy among adolescents. The aim of the study was to investigate the impact of health education on reproductive health knowledge, and risky sexual behaviours among secondary school students in Rivers State. The study used a randomized control-group pretest-posttest research design. A multi-stage sampling procedure was used to randomly select samples for the study. The instrument for data collection was an adapted instrument titled "Asking young people about sexual and reproductive behaviours: illustrative core instrument." by Cleland, Ingham and Stone (2001). The instrument was subjected to a reliability test using Split Half and a reliability coefficient of 0.89 for knowledge and 0.887 for risky behaviours. Data was analyzed using Statistical Package for Social Science (SPSS) for windows (Version 21). Data were presented using descriptive statistics percentages and cross tabulation to answer research questions and inferential statistics such as Chi-square and ANCOVA was used to test hypotheses at 0.05 level of significance. Cohen criterion for interpretation of the eta value was used to interpret the effect of health education intervention on knowledge of reproductive health with 0.01 as small effect, 0.06 moderate effect, and 0.14 as large effect. The study findings indicated that health education had a large effect on reproductive health knowledge of respondents. The intervention group had higher mean knowledge score of 110.8 ± 16.0 while the control group had a mean score of 92 ± 14.9 and there was a large effect 0.43 on the knowledge level of the respondents and there ($p < 0.05$). The findings of the study indicated education intervention had no significant effect on risky sexual behaviour among senior secondary school students ($\chi^2 = 1.697$, $df = 3$, $p = .33$). The study concluded that health education intervention impacted on Knowledge of reproductive health and but not on risky sexual behavior of secondary school students in Rivers State. The study recommended that the education curriculum developers should introduce extra-curricular activities in schools that would promote reproductive health knowledge in schools from that of the formal classroom experiences.

Keywords: Health Education, reproductive health and risky sexual behaviour

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I. Introduction

Reproductive health knowledge is significant to the growth and development of adolescents and this significantly impact their educational and personal outcome and they proceed to adulthood. Adolescents are risk takers, hence the increase in unsafe sexual behaviours and unintended pregnancy is alarming and has become an area of interest for global public health researchers. Health education has been identified as a tool in curbing this unsafe behaviours and practices among adolescents. Health education has created a lot of positive impact and has proven to be an effective tool as found in various intervention programmes. The increase in unsafe sexual behaviours and unintended pregnancy among adolescent is alarming and has become an area of interest for global public health researchers. Nigeria the giant of Africa is the 10th most populous country in the world and the most populous African country with a population of about 198 million people (National Population Commission (NPC), 2018), a growth rate of 2.54% (CIA, 2012, Global AIDS Response Country Progress Report Nigeria, 2015) and a total fertility rate (TFR) of 5.5 (NPC, 2014) and in 2017 5.8% (National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys, 2017). This population is characterised by 30 million adolescents' population constituting about 22% of the Nigerian population (NPC, 2006).

Health education is aimed to make individuals aware of the negative consequences risky behaviour. Different researchers have defined health education among which is the Joint Committee on Terminology (2001) definition that health education as any combination of planned learning experiences based on sound theories that provide individuals, group and communities the opportunity to acquire information and the skills

needed to make quality health decisions. Owie (2003) opined that health education is a systematic process that persuades people to adopting behaviours that are beneficial and rejection of those behaviours that are detrimental to their health. Green and Kreuter (2015) further described health education as any planned combination of learning experiences designed to predispose, enable and reinforce voluntary behaviour conducive to health in individuals, groups and communities.

Health education has created a lot of positive impact as found in various intervention studies and thus, a reproductive health education intervention programme improves the knowledge and attitude of adolescents. Impact is a marked effect or influence of an activity on a behaviour. Hence, impact of health education can be seen as effect observed after health education has taken place. Impact of health education can be found in studies such as Malleshappa, Krishana and Nandino, (2011), Etemad, Shereef and Fathalla (2009), Gao et al (2012), and Rao, Lena, Kamath and Kamath (2008), Mba, Obi and Ozumba (2009) which showed a significant ($p < 0.05$) improvement in overall knowledge of reproductive health, positive and permissive attitude towards reproductive health and a drop in risky sexual behaviour following the intervention on health education. Although the efficiency of health education remains contentious, it nonetheless has its own merits.

Reproductive health knowledge is significant in the growth and development of young people and this significantly impact on their educational and personal outcome as they proceed to adulthood. The 1994 International Conference on Population and Development (ICPD), defined reproductive health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity in all matters relating to the reproductive system and its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sexual life and they have the capability to reproduce and the freedom to decide if, when, and how often to do so. Implicit in this last condition are the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant” (ICPD 1994).

In adolescence, equitable risk-taking is considered normal as it leads to confidence in forming new relationships, sports and social institution. However high risk behaviours are related with serious undesirable penalties which include drugs and alcohol use, unsafe sexual practices, self-injurious behavior and reckless driving (Sadock, 2007). Risky sexual behavior can be defined as unprotected penetrative sexual intercourse which may involve initiation of sexual intercourse at an early age, multiple sex partners, sexual intercourse under the influence of alcohol or other substances of abuse, lack of contraceptive use, sexual intercourse under compulsion and sexual abuse. Contextually, risky sexually behavior is an unprotected sexual intercourse irrespective of the time, person(s), place and how such behavior took place. Factors that influence adolescent sexual behavior include personality traits, gender cultural and religious background, racial factors, family attitudes, sex education and prevention programs (Sadock, 2007). Also Regmi, Van Teijlingen, Smkhada and Acharya (2010) indicated that lack of youth friendly services, feeling of embarrassment, influence of alcohol and peers, poor sexual and reproductive health knowledge are factors that tend to have negative effect on sexual behaviour of adolescents. However, psychosexual factors also come into play as they affect personality, growth, development and functioning of the adolescent, these include sexual identity, sexual orientation and sexual behavior (Sadock, 2007).

Adolescents are risk takers. Thus, there is a consensus that adolescents engage in high risk sexual behaviour that predisposes adolescents to reproductive health problems (Okonta, 2007). This is as a result of physiological and psychological changes that cause adolescents to desire sexual intercourse and take risks, leading to unfavourable sexual and reproductive health indices including unintended pregnancies, unsafe abortions, early childbearing, sexually transmitted infections, depression, pornography, prostitution, use of contraception, casual sex and Acquired Immune Deficiency Syndrome (AIDS) (Ola & Oludare, 2009).

The aim of the study was to investigate the impact of health education on reproductive health knowledge and risky sexual behaviours among secondary school students in Rivers State.

Objectives of the study

1. To evaluate the impact of health education on level of reproductive health knowledge among senior secondary school students in Rivers State
2. To evaluate the impact of health education on contraceptive use among senior secondary school students in Rivers State

1.4 Research Questions

The following research questions were derived for this study;

1. What is the impact of health education on reproductive health knowledge among senior secondary school student in Rivers State?

2. What is the impact of health education on risky sexual behavior among senior secondary school student in Rivers State?

1.5 Hypotheses

The following hypotheses were formulated to guide the study;

Ho₁: Health education will not significantly impact on knowledge of reproductive health among senior secondary school students in Rivers State.

Ho₂: Health education will not significantly impact on risky sexual behavior among senior secondary school students in Rivers State.

II. Methodology

The study used the randomized control-group pretest-posttest design. Dimitrov and Rumrill (2003), opined that the randomized control-group pretest – posttest design is a research design in which all conditions are the same for both the experimental and control groups with the exception that the experimental group is exposed to a treatment whereas the control group is not. In this design both the control and experimental group were administered a pretest and then a treatment was given to the experimental group only before the posttest is administered to the two groups.

A multi-stage sampling procedure was adopted for this study comprising of simple random sampling technique, systematic random sampling techniques and stratified random sampling technique. An adapted semi-structured questionnaire was used for data collection titled ‘Asking young people about sexual and reproductive health behaviours: Illustrative Core Instrument’ (Cleland, Ingham & Stone 2001). Data was collected using a pre-designed, re-tested, semi-structured questionnaire. The questionnaire is divided into 5 sections. Section A consisted of 4 demographic variables such as age, gender, class of study and religion. Section B consisted of 41 reproductive health knowledge based questions that elicited information from respondents such as puberty, menstruation, reproductive system, teenage pregnancy and HIV/AIDS; Section C consisted of 25 risky sexual behaviours based questions such as number of sexual partners, age at sexual debut and use of contraceptive; Section D addressed knowledge and ever-use of contraceptive methods consisted of 8 questions. A total of 78 questions was drafted for the study.

A health education programme was prepared and implemented for small groups of students in classes. The intervention study compared a study group which received health education on reproductive health knowledge and risky sexual behaviours and the control group which did not receive any. The study was done in three stages: (1) the pre-intervention stage, where a baseline study was carried out for both the intervention group and the control group using a questionnaire to assess their knowledge level on reproductive health and risky sexual behaviours; (2) the intervention stage, where a comprehensive health education programme was organized in five sessions for this group of students. Each session lasted for 2 hours conducted in five consecutive days. The programme consist mainly of short interactive lectures and group discussions using health education manual and audio-visual aids. Health education programme included topic on reproductive health, anatomy and physiology of genital system in males and females, physical changes occurring in boys and girls during puberty, health sequels of early marriages, hygiene, pregnancy and abortion, contraceptive use, sexual behaviours sexually transmitted infections and HIV. Audio visual aids such as charts, posters and books were used. The education will be followed by an interactive session with the students for clarity of doubts; (3) the post-intervention stage, the same questionnaire was used to evaluate the respondents on same subject two weeks after the learning sessions. Fieldwork lasted for a period of 8 weeks.

All analysis was done using Statistical Package for Social Science (SPSS) for windows (Version 21). Data were analyzed using descriptive statistics such as frequencies, percentages and cross tabulation and inferential statistics such as mean (\bar{x}), standard deviation (SD), Chi square, paired t-test and ANCOVA was used to test research hypotheses at 0.05 alpha level. Cohen criterion for interpretation of the eta value was used to interpret the effect of health education intervention on knowledge of reproductive health with 0.01 as small effect, 0.06 moderate effect, and 0.14 as large effect.

III. Results

Research question 1: What is the impact of health education on reproductive health knowledge among senior secondary school student in Rivers State?

Table 1: Mean difference and standard deviation on effect of health education on reproductive health knowledge among senior secondary school students.

| Test | Group | M | SD | MD | Eta | Decision |
|-----------|--------------|-------|------|------|------|--------------|
| Pre-test | Intervention | 75.5 | 3.9 | | | |
| Post-test | Intervention | 110.8 | 16.0 | 35.3 | 0.43 | Large effect |
| Pre-test | Control | 83.7 | 14.5 | | | |
| Post-test | Control | 92.0 | 14.9 | 8.3 | 0.07 | Small effect |

Mean and standard deviation was conducted on effect of health education intervention on knowledge of reproductive health among senior secondary school students in Rivers State after six weeks. The result of the study showed that respondents in the intervention group had a lower mean score of 75.4±3.9 compared to a mean score of 83.7±14.5 before the health education intervention. After the six weeks intervention respondents in the intervention group had a higher mean knowledge score 110.8±16.0 while the control group had a mean score of 92±14.9. The eta square statistics was further calculated to determine the effect of health education intervention on knowledge. The eta square statistics of 0.43 was determined indicating a large effect of health education on the intervention and 0.07 eta square statistics indicating low effect. Thus health education intervention is said to have a large effect on knowledge of reproductive health among senior secondary school students in Rivers State.

Research Question 2: What is the impact of health education on risky sexual behavior among senior secondary school student in Rivers State?

Table 2: Percentage distribution on effect of health education on risky sexual behaviours among senior secondary school students.

| SEXUAL BEHAVIOUR | CONTROL | | INTERVENTION | |
|-----------------------------------|----------|----------|--------------|----------|
| | PRE | POST | PRE | POST |
| Had sexual intercourse | 46(55.4) | 37(44.6) | 47(58.8) | 33(41.3) |
| Number of sexual partner | | | | |
| 1 | 43(53.1) | 38(46.9) | 44(55.7) | 35(44.3) |
| 2 or more | 3(75.0) | 1(25.0) | 3(75.0) | 1(25.0) |
| Used Condom at sexual intercourse | | | | |
| | 19(57.6) | 14(42.4) | 20(64.5) | 11(35.5) |

Table 2 percentage distribution on the impact of health education on risky sexual behaviour among senior secondary school students in Rivers State. The result revealed that among the control at baseline 55.4% of the respondent had sexual intercourse and post 44.6% had sexual intercourse. Also, among the intervention group at baseline 58.8% had sexual intercourse while after the six weeks intervention the percentage of respondent who had sexual intercourse reduced to 41.3%. Result on number of sexual partners among the control group showed no decrease among those with one sexual partner at the baseline (53.1%) and post intervention (46.9%) while among the intervention group, a decrease was seen in the number with sexual partner at baseline (55.7%) and post-intervention (44.3%). Furthermore, the result showed that the control at baseline 57.6% used condom at sexual intercourse and post (42.4%) had used condom. Also among the intervention group at baseline 64.5% had used condom while after six weeks intervention the percentage of respondents who had used condom during sexual intercourse reduced to 35.3%.

Hypothesis 1: Health education will not significantly impact on knowledge of reproductive health among senior secondary school students in Rivers State.

Table 3: Analysis of covariance on impact of health education on knowledge of reproductive health among senior secondary school students

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
|-----------------|-------------------------|-----|-------------|---------|------|---------------------|
| Corrected Model | 34849.111 ^a | 2 | 17424.555 | 183.794 | .000 | .539 |
| Intercept | 68946.408 | 1 | 68946.408 | 727.246 | .000 | .698 |
| PreKnowledge | 6925.408 | 1 | 6925.408 | 73.049 | .000 | .188 |
| Group | 33426.736 | 1 | 33426.736 | 352.585 | .000 | .528 |
| Error | 29863.521 | 315 | 94.805 | | | |
| Total | 3317727.000 | 318 | | | | |
| Corrected Total | 64712.632 | 317 | | | | |

A one-way analysis of covariance (ANCOVA) was conducted to determine the impact of health education on knowledge of reproductive health among senior secondary school students in Rivers State. The dependent variable was the post intervention knowledge scores and the covariate was the pre-intervention knowledge score and group the fixed variable. The ANCOVA was significant, $F(1, 317) = 352.58, p < .05$. However, only 1.0% ($\omega^2 = .010$) of the total variance in post intervention knowledge scores was accounted health education intervention. The null hypothesis which states that Health education intervention has no significant impact on knowledge of reproductive health among senior secondary school students in Rivers State was thus rejected.

Hypotheses 2: Health education will not significantly impact on risky sexual behavior among senior secondary school students in Rivers State.

Table 4: chi-square on effect of health education has no significant effect on risky sexual behaviour

| SEXUAL BEHAVIOUR | CONTROL | | INTERVENTION | | df | χ^2 -value | p-value | Decision |
|-----------------------------------|----------|----------|--------------|----------|----|-----------------|---------|----------|
| | PRE | POST | PRE | POST | | | | |
| Had sexual intercourse | 46(55.4) | 37(44.6) | 47(58.8) | 33(41.3) | 1 | 4.064 | 0.04 | Accepted |
| Number of sexual partner | | | | | | | | |
| 1 | | | | | | | | |
| 2 or more | 43(53.1) | 38(46.9) | 44(93.6) | 35(44.9) | 1 | 0.578 | 0.45 | Rejected |
| Used Condom at sexual intercourse | 3(73.0) | 1(25.0) | 3(75.0) | 1(25.0) | 1 | 0.450 | 0.50 | Rejected |
| Total | 19(57.6) | 14(42.4) | 20(64.5) | 11(35.5) | 3 | 1.697 | 0.33 | Rejected |

Table 4 showed chi-squares analysis on health education on risky sexual behaviours. The results showed that health education had significant effect on risky having sexual intercourse ($X^2 = 4.064$, $df= 1$, $p=.04$). The result of the study revealed that health education had no significant effect on number of sexual partner ($X^2 = .578$, $df= 1$, $p=.45$). However, health education had no significant effect on use of condom ($X^2=0.578$, $df=1$, $p=.45$). On the whole, health education had a non-significant effect on risky sexual behaviours ($X^2=1.697$, $df=3$, $p=.33$). Thus, the null hypothesis which states that health education will not significantly impact on risky behavior is rejected.

IV. Discussion Of Findings

The result of the study in Table 1 indicated a large effect (0.43) of health education on Knowledge of reproductive health compared to a low effect size (0.07) among the control group which was statistically significant at 0.05 alpha level. The large effect size could be attributed to the six weeks added intervention lectures given during the intervention programme. Also the large effect could be attributed to the method of teaching employed during the intervention group which could be different from the regular classroom teaching. Another plausible reason could which might have resulted in the large effect size was that teaching was learners centered as group presentation were encouraged and applauded which might not be so in the regular classroom teaching. The findings of this study is comparable with the findings of Mba, Obi and Ozumba (2009) on the impact of health education on reproductive health knowledge among adolescents in rural Nigerian community showed that respondents in the study group had a significant ($p<0.05$) gain in correct knowledge of reproductive health following the six weeks health education intervention. Also the finding of the study was in line with the finding of Malleshappa, Krishna and Nandini (2011) on knowledge and attitude about reproductive health among rural adolescents girls in Kuppam mandal: An intervention study which revealed a significant increase in overall reproductive health knowledge after intervention ($P<0.001$). Furthermore, the findings of the study was consistent with the findings of Eman (2017) on effect of health education intervention on knowledge and practice about reproductive health among adolescents female students is consistent with the findings of the present study. It indicated that there was an overall increase in adequate knowledge of respondents as it improved from 21.3 to 82.7% after the education intervention with a highly significant difference of $p<0.0001$. In addition, the findings was in keeping with the findings of Rao, Lena, Nair, Kamath, Kamath (2008) on effectiveness of reproductive health education among rural adolescent girls: a school based intervention study which indicated a significant difference in overall knowledge of respondents after intervention (from 14.4 to 68%, $p<0.01$). The similarities may not be far from the fact that these studies were also conducted in similar settings and among adolescents. The similarities could also be due to the six weeks intervention method adopted. This is in accordance with the present study which indicated that an educational intervention program can bring about a desirable change in knowledge among adolescents regarding reproductive health. This enhancement is not only reassuring but also required because attainment of knowledge is usually the first stage in the procedure of changes in behaviour. However, knowledge alone is often not adequate in itself to yield change in reproductive health in most people.

The findings of the study in Table 2 on effect of health education on risky sexual behaviour indicated that there was a decrease in sexual activity (41.3%) after six weeks of intervention there. This study revealed that health education had impact on the respondents' sexual inter course. Also a decrease on number of sexual partners was seen among the intervention group (44.3%). Use of condom among respondents of intervention group at baseline 64.5% and at post-test 35.3%. The study revealed that chi-square test on the whole showed to

have a non-significant effect on risky sexual behaviours ($p=.33$). This decrease in sexual activity, number of sexual partner and use of condom was as a result from the teaching and learning processes where topics like teenage pregnancy and its effects on boys and girls were taught and interactive sessions included. This is in accordance with the investigation of Aderibigbe, Araoye, Akande, Musa, Sanya and Adesina (2010) on effect of health education on knowledge and practice of contraception among student of public schools in Illorin, Nigeria that there was an expansion in condom use and a factually critical degree of 0.003 alpha level. Likewise Aderigbe and Araoye (2008) in an investigation on effect of health education on sexual behavior of students of public secondary schools in Illorin, Nigeria uncovered that there was a noteworthy lessening ($p<0.05$) in sexual movement and huge increment ($p<0.05$) in condom use after the intercession was done.

V. Conclusion

Recommendations

Based on the findings of the study the following recommendations were postulated.

1. The education curriculum developers should introduce extra-curricular activities in schools that would promote reproductive health knowledge in schools from that of the formal classroom experiences.
2. Nollywood film producers and film writers should write and produce films and short plays on risky sexual behaviours and its effect to help sensitize the nation television viewers on risky sexual behaviours.
3. School managements of secondary schools should periodically invite guest lecturers to give health talks to students outside the normal student learning process so as to increase the knowledge of reproductive health.

Conclusion

This study opined that health education had a positive impact on reproductive health knowledge and risky sexual behaviour among secondary school students in Rivers State.

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