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IMPACT OF EDUTAINMENT ON KNOWLEDGE AND ATTITUDE TOWARDS UTILIZATION OF SEXUAL HEALTH AMONG IN-SCHOOL ADOLESCENTS IN SELECTED SECONDARY SCHOOLS IN LAGOS STATE, NIGERIA.

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ABSTRACT: *Background: In-school adolescents in Nigeria experience numerous sexual and reproductive health challenges exacerbated by limited access to accurate sexual health information and youth-friendly services. Traditional methods of health education have shown limited effectiveness in engaging adolescents, thus leading to misconceptions and risky sexual behaviors. Edutainment, an innovative approach integrating education with entertainment, holds promise for effectively enhancing adolescents' knowledge and attitudes toward utilizing sexual health services. However, its application and efficacy remain underexplored in Lagos State, Nigeria. This study examined the impact of edutainment on adolescents' knowledge and attitudes regarding the utilization of sexual health services. Methodology: The study adopted a quasi-experimental design involving 60 adolescents systematically selected from two secondary schools in Lagos State, randomly assigned into Experimental (EG) and Control Groups (CG). The EG participated in an edutainment intervention comprising drama presentations, digital media, and interactive discussions, while the CG received traditional training on exercise and nutrition. Data were collected using a structured, validated questionnaire administered at baseline, immediately post-intervention, and at a 12-week follow-up. Statistical analyses utilized descriptive and inferential statistics, evaluated at a 5% significance level.* ***Results:*** *Post-intervention findings revealed a significant increase in knowledge mean scores among EG participants from baseline (1.30 ± 0.65) to immediate post-intervention (2.93 ± 0.25), sustained at 12-week follow-up (3.00 ± 0.00; $F = 170.80$, $p < 0.05$). Similarly, attitude scores showed significant improvement from baseline (14.27 ± 6.46) through immediate post-intervention (34.10 ± 17.75) to 12-week follow-up (47.53 ± 1.11; $F = 70.43$, $p < 0.05$). The CG demonstrated no significant improvement in knowledge or attitude scores over the same periods.* ***Conclusion:*** *Edutainment significantly enhanced the knowledge and attitudes of in-school adolescents towards the utilization of sexual health services in Lagos State. This study recommends integrating edutainment strategies into adolescent health education curricula to promote positive sexual health outcomes.*

KEYWORDS: Edutainment, Knowledge, Attitude, Sexual Health Services, Adolescents, Lagos State, Nigeria.

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INTRODUCTION

Adolescence is a pivotal stage of life marked by rapid physical, emotional, and social changes, which play a crucial role in shaping an individual's future health and well-being. During this time, adolescents begin to form their identities, develop independence, and make decisions that can have long-lasting effects on their health (Carpena, 2024). As they navigate this complex period, access to appropriate health services becomes essential in supporting their development and helping them make informed choices that will promote positive health outcomes throughout adulthood. Adolescence as defined by WHO, are individuals aged between 10 and 19 years, making up roughly one-sixth of the global population (WHO, 2018).

Globally, there is increasing recognition of the importance of providing adolescents with comprehensive health information and services (Shinde et al., 2023). The World Health Organization (WHO) identifies adolescence as a critical period for intervention, particularly in terms of Sexual and Reproductive Health (SRH), given the high risk of sexually transmitted infections (STIs) and unintended pregnancies (WHO, 2024). Adolescent health issues are a global concern, as adolescent patients are frequently neglected when it comes to planning healthcare services, leaving them vulnerable to missing out on consistent care, not getting timely treatment, and facing a shortage of experienced healthcare professionals who can tailor care to their individual requirements (Garney et al., 2021). While many countries such as Sweden have made strides in embracing Youth-friendly healthcare services with progressive healthcare policies (Thomée et al., 2016), yet still, the global prevalence of poor health outcomes among adolescents highlights the need for innovative, youth-friendly approaches such as edutainment (entertainment-education).

Edutainment uses theatre and other media to give educational messages in an entertaining format. Researchers have explored this type of intervention for varying issues and all assert that drama can serve to educate and stimulate social and moral development (Belliveau, 2020)). Viewing and discussing dramatic presentations can increase sensitivity towards issues and allow critical reflection on what individuals are witnessing or experiencing (Belliveau, 2020).

Health promotion efforts targeting adolescents have emphasized the importance of early diagnosis and prevention (Colizzi et al., 2020). Primary prevention measures, such as health education, vaccination, and promotion of healthy behaviors, (Kisling & Das, 2023) are essential for addressing the root causes of adolescent health issues. Secondary prevention efforts, including early diagnosis of STIs and provision of contraceptives, aim to reduce the progression of health problems among adolescents. However, these interventions are often underutilized due to the aforementioned barriers. Effective interventions are needed to overcome these challenges, with innovative approaches like edutainment showing promise in improving knowledge, attitudes, and utilization of healthcare services among adolescents.

Understanding the importance of health-seeking behaviors is crucial for addressing adolescent health challenges in Nigeria. Adolescents who have the knowledge, support, and resources to seek healthcare early are more likely to prevent the onset of serious health issues, such as STIs or unintended pregnancies (Mohamed et al., 2023). However, many adolescents lack the knowledge and confidence to navigate the healthcare system. Interventions, such as edutainment, can play a pivotal role in addressing these gaps by providing adolescents with the information and motivation they need to take charge of their health. Edutainment has been successfully used in other contexts to improve health outcomes. For instance, in India, a field

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experiment found that health entertainment-education increased knowledge about hygiene by 16%, with the gains persisting for almost a year (Carpena, 2024). In sub-Saharan Africa, edutainment has been utilized to address HIV prevention and SRH education, resulting in improved knowledge and some behavioral change among adolescents (Orozco-Olvera et al., 2019).

Traditional health-seeking behaviors and societal norms often lead adolescents to turn to informal or unsafe sources of care, such as traditional healers or self-medication, increasing the risks of complications and long-term health issues (Anthony et al., 2024). The poor utilization of sexual health care services contributes to adverse health outcomes such as unintended pregnancies, mental problems, infectious diseases, the continued spread of STIs, including HIV and death.

According to Blasco et al. (2019), use of edutainment as a teaching method promotes the type of engaged learning that is required in youth education. Emotions play a significant role in the formulation of new knowledge, attitudes, and behaviour. Therefore, initiatives such as storytelling, theatre, and film have the capacity to target affective domains and enhance learners' understanding of the human experience (Blasco et al., 2019)

It is important to note that there is a gap in understanding why these aforementioned barriers persist despite continuous efforts. Most interventions have focused on raising awareness but have not sufficiently addressed the broader social, cultural, and behavioral factors that prevent adolescents from translating knowledge into action. Additionally, while studies acknowledge the influence of negative attitudes and societal norms on healthcare-seeking behavior, there is limited research on how innovative strategies, such as edutainment, could be used to bridge this gap and actively engage adolescents in health discussions and service utilization.

This study addresses the urgent need to fill this knowledge gap by exploring how edutainment, a strategy that combines education with entertainment can overcome existing barriers, engage adolescents in meaningful health discussions, and promote the effective utilization of SRH services in Lagos State, Nigeria. This research did not only assess the impact of edutainment on knowledge and attitudes but also examined how it influences actual healthcare-seeking behavior, providing valuable insights into improving adolescent health outcomes.

Adolescents in South-West Nigeria face multiple barriers to accessing healthcare, particularly in the areas of sexual and reproductive health (SRH). Despite efforts to improve healthcare services, the utilization of SRH services remains low, primarily due to limited knowledge, cultural stigma, and a lack of adolescent-friendly healthcare environments. The consequences of these barriers are severe, leading to high rates of unintended pregnancies, sexually transmitted infections (STIs), including HIV, and unsafe abortions, all of which contribute to the overall poor health outcomes of adolescents.

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METHODOLOGY

Study Design

For this study, a quasi-experimental design was employed, consisting of one experimental group and one control group, to assess the Impact of edutainment on knowledge and attitude of sexual health services utilization among in-school adolescents in Lagos State, Nigeria The choice of a quasi-experimental design is appropriate since the groups were not randomly assigned. This design has proven effective for similar studies as it allows for the identification of a comparison group or time period that closely resembles the treatment group or time period in terms of baseline characteristics. Prior to the intervention, a baseline data was collected from both the control and experimental groups. This was followed by the designed intervention in the experimental group for a period of six (6) weeks while the control group was given necessary attention but not the designed intervention. An outcome evaluation was carried out in both the control and experimental groups soon after the intervention. Then, at the twelfth (12^{th}) week, from the date of the first data, an impact evaluation was carried out in the two groups.

A sample size of 30 Adolesents for each group was derived using Cochran's formula. Simple Random sampling selection was used to select two Local Government Areas in Lagos State which are Ikorodu and Eti-osa Ikenne Local Government Areas. This method is appropriate because every Adolescents are at risk of suffering from sexual health related issues. Ikorodu, was selected as the experimental group while Eti-osa was the control group. EG was assigned to health education modules on knowledge on sexual health services s for 1 hour once weekly and CG had training on exercise for 1 hour once a week, both for six weeks. A total of three research assistants were trained to this effect.

Research Instrument and Data Collection

The research method chosen for this study was quantitative in nature. To create a reliable and valid instrument for data collection, the researcher gathered information from various sources including a review of relevant literature, as well as examining instruments used in similar studies. With this information, an appropriate instrument was developed for use in collecting data from the participants. The instrument was designed to ensure that it aligns with the research objectives and the research questions. The instrument measured respondent knowledge and attitude of sexual health services. The same instrument was administered at the baseline, immediate post intervention and 12-weeks follow up. A structured validated questionnaire with Cronbach's alpha reliability index ranging from 0.7 to 0.8 was used to collect data.

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Table 1: Description of the Data Collection

Groups	Baseline Data	Interventions	Outcome Evaluation (end of intervention program)	Impact Evaluation(at 12th weeks)
Control Group	O	-	O	O
Experimental Group	O	X	O	O

Key: X = Intervention; O = Outcome

Baseline data collection

Baseline was the first phase of data collection from the participants. The baseline data served as bases for comparison between the intervention and control. This also served as means of detecting changes attributable to the intervention. Data were obtained from the intervention and control groups with the use of the designed 57-item questionnaire through interviewer administered by the research assistants recruited for the purpose. The instrument comprised of 3 sections that are control variables, independent variables and dependent variables. These variables are; Demographic characteristic, knowledge and attitudes towards sexual health services.

Immediate post-intervention data collection

Immediately after the experimental group received the 6-weeks intervention, the same data collection instrument used for baseline data collection was used to get responses from the intervention and control group for the second time. The control group received just a 1-day health talk on exercise, not related to the subject matter as recommended in the principles of ethics that the control group should also benefit from the study (SASLHA, 2011). The variables measured basically were the independent and dependent variables. Socio demographic data were kept throughout the study.

End line data collection

The end line data collection was the third and the last phase of data collection. The end line data was obtained using same data collection instrument and this was done at the 12th week follow up. Focus was more on the outcome variable which was the knowledge of sexual health services.

Study Variables

The independent/treatment variable of the study is Edutainment while the dependent variable is Knowledge and Attitude of sexual health services

Data Analyses

The data collected for the study was collated, entered and coded using the Statistical Product for Service Solutions (SPSS) version 23. The data was cleaned by running a frequency analysis on each item and checking responses to ensure that the values were accurately coded. Data was

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analysed using descriptive, and inferential statistics at 5% level of significance. Effect size (ES) was used to measure the magnitude of the intervention in the Experimental group.

Ethical Clearance

An application for ethical approval for this study was submitted to the Babcock University Research Ethics Committee. The purpose of the study was explained to all participants, after which verbal consent was given by each participant, while they also signed the consent forms. All participants were assured of anonymity and the confidentiality of the information received from them.

RESULTS

Socio-demographic characteristics of the respondents

Socio-demographic Characteristics of Respondents Table 2 provides the demographic details of the 60 adolescents participating in the study, categorized into control and experimental groups. Participants' mean age was comparable across groups, with the control group averaging 15.70 ± 0.88 years and the experimental group 15.50 ± 1.04 years (p = 0.425). Gender distribution was balanced, with males representing 53.3% of the control group and 50.0% of the experimental group, showing no significant difference (p = 0.798). Both groups equally comprised students from academic classes SSS1 to SSS3, each accounting for 33.3% of the total participants. Ethnic diversity was predominantly Yoruba (83.3%), followed by Igbo (10.0%), Hausa (3.3%), and others at 0%. Religious affiliation showed significant variation, with Christianity predominant at 61.7%, Islam at 36.7%, and traditional beliefs at 1.7% (p = 0.047). Parental occupation varied, with 33.3% in professional roles, 41.7% in business/trading, 18.3% artisans, and 6.7% unemployed (p = 0.079).

Table 2 Demographic Characteristics of the participants in the study for each group at baseline

Variable	Control Group		Experimental group		Total	
	N=30		N=30		N=60	
	N	%	N	%	N (%)	p-value
Gender						
Male	16	53.3	15	50.0	31 (51.7%)	
Female	14	46.7	15	50.0	29(48.3%)	0.798
Academic class						
SSS1	10	50	10	50	20(33.3)	
SSS2	10	50	10	50	20(33.3)	
SSS3	10	50	10	50	20(33.3)	
Ethnic						
Yoruba	26	86.7	24	80.0	50(83.3)	0.748
Igbo	3	10.0	5	16.7	8(10.0)	
Hausa	1	3.3	1	3.3	1(3.3)	

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Others	0	0	0	0	0	
Religion						
Christianity	23	76.7	14	46.7	37(61.7)	0.047
Islam	7	23.3	15	50.0	22 (36.7)	
Tradition	0	0	1	3.3	1(1.7)	
Others	0	0	0	0	0	
Parent/Guardian occupation						
Professional/ white collar	10	33.3	10	33.3	20(33.3)	0.079
Business/trading	16	53.3	9	30.0	25(41.7)	
Artisan	4	13.3	7	23.3	11(18.3)	
Unemployed	0	0	4	13.3	4(6.7)	
Age (mean)	15.70 ± 0.88		15.50±1.04		15.61±0.99	0.425

Baseline knowledge of Sexual health services among in-school adolescents in selected Secondary Schools in Lagos state, Nigeria

Baseline Knowledge of Sexual Health Services Table 3 highlights baseline knowledge regarding sexual health services among participants. Knowledge scores ranged from 0 to 6, with the control group showing a significantly lower mean of 1.00 ± 0.59 compared to the experimental group's mean of 2.13 ± 0.73 (p = 0.000, t58 = 4.264). Both groups, however, fell into the low knowledge category, indicating substantial potential for improvement.

Table 3 Summaries of independent sample test for knowledge of in-school adolescents on Sexual health services at Baseline for control and experimental groups

Variables	**Maximum Points on Scale of Measure**	**Baseline**				p-value
		Control Group		**Experimental Group**		
		N=30		**N=30**		
		X̄(SE)	±SD	X(SE)	±SD	
Total Knowledge Low (<1) Moderate (1-2) High (2>)	3	1.20(0.08)	0.48	1.30(0.12)	0.65	0.502

***Not Significant at P>0.05, t_{58}=0.675**

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Attitude of participants towards Sexual health services utilization among in-school adolescents at baseline

Baseline Attitude Towards Utilization of Sexual Health Services Table 4 presents baseline attitudes towards utilizing sexual health services. Both groups showed low attitude scores, with the control group averaging 7.81 ± 3.55 and the experimental group 6.67 ± 0.58. The difference between groups was statistically insignificant (p = 0.596, t58 = 0.545).

Table 4 Summaries of independent sample t-test on attitude towards Sexual health services utilization among in-school adolescents at baseline stage for control and experimental groups

Variables	Maximum Points on Scale of Measure	Baseline phase				p-value*
		Control Group		Experimental Group		
		N=30		N=30		
		X̄(SE)	±SD	X(SE)	±SD	
Total Attitude Low (0-20) Moderate (21-40) High (41>)	48	15.43(1.37)	7.05	14.27(1.18)	6.46	0.521

***Not Significant at P>0.05, t_{58}=0.645**

Post intervention knowledge of Sexual health services among in-school adolescents in selected Secondary Schools in Lagos State, Nigeria

Post-Intervention Knowledge of Sexual Health Services Post-intervention assessments at the 12th week (Table 5) showed a significant increase in knowledge among the experimental group (mean = 5.97 ± 0.18), placing them in the high knowledge category, compared to the control group which remained low at 1.04 ± 0.19. The difference was highly significant (p = 0.000, t57 = 102.869), with an effect size of 26.64.

Table 5 Summaries of independent sample test for Knowledge of Sexual health services among in-school adolescents at 12th week Follow-up for control and experimental groups

Variable	Maximum Points on Scale of Measure	12th week Follow-up					
		Control		Experimental			
		N=30		N=30			
		X(SE)	±SD	X (SE)	±SD	*ES (95%CI)	p-value
Total Knowledge Low (<1) Moderate (1-2) High (2>)	3	1.24(0.08)	0.44	3.00(0.0)	0.00	-5.75 (-5.83 to -5.7)	<0.001*

***Significant at P<0.05. t_{57}=19.80**

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Post intervention attitude towards Sexual health services utilization among in-school adolescents in selected Secondary Schools in Lagos State, Nigeria

Post-Intervention Attitude Towards Utilization of Sexual Health Services Attitude towards sexual health service utilization post-intervention (Table 6) significantly improved in the experimental group (mean = 40.40 ± 1.10), contrasting sharply with the control group's low attitude (mean = 7.93 ± 2.99). This difference was statistically significant (p = 0.000, t58 = 39.29), with a substantial effect size of 14.41, demonstrating the effectiveness of the intervention.

Table 6 Summaries of independent t-test analysis of in-school adolescents' attitude towards Sexual health services utilization at 12th week Follow-up for control and experimental groups

Variable	Maximum Points on Scale of Measure	12th week Follow-up					
		Control		Experimental			
		N=30		N=30			
		X(SE)	±SD	X (SE)	±SD	*ES (95%CI)	p-value
Total Attitude Low (0-20) Moderate (21-40) High (41>)	48	17.34(1.18)	6.34	47.53(0.20)	1.11	6.75 (7.88 to 5.61)	<0.001*

***Significant at P<0.05. t_{58}=25.28**

DISCUSSION

The study's findings indicated a significant improvement in adolescents' utilization of sexual health services (SHS) following the edutainment intervention. At baseline, both control and experimental groups exhibited low utilization rates, reflecting widespread barriers such as inadequate awareness, stigma, and insufficient adolescent-friendly services. However, post-intervention data revealed substantial positive changes exclusively within the experimental group. At the 12th-week follow-up, the experimental group showed significantly increased utilization scores compared to the control group, demonstrating the effectiveness of edutainment in addressing the barriers adolescents face in accessing sexual health services.

This significant improvement aligns with existing literature highlighting edutainment as an effective approach in promoting behavioral change. Prior studies have emphasized that engaging adolescents through educational entertainment significantly enhances their knowledge, attitudes, and practices concerning sexual health. The intervention's format, combining drama, digital media, and interactive discussions, effectively captured adolescents' attention and promoted meaningful engagement, overcoming traditional barriers of embarrassment and stigma commonly associated with sexual health discussions. Consequently,

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the experimental group's enhanced awareness and positive attitudes translated into improved utilization behaviors.

Conversely, the control group showed minimal to no improvement in service utilization, underscoring the limitations of traditional health education methods that often fail to engage adolescents effectively. These findings further reinforce the critical role of innovative educational strategies tailored specifically to adolescents' unique learning preferences and cultural contexts.

CONCLUSION

The study concludes that edutainment is an effective intervention for improving the utilization of sexual health services among adolescents in Lagos State. The intervention effectively addressed common barriers such as misinformation, social stigma, and inadequate knowledge by utilizing engaging and relatable content. This resulted in significantly increased utilization of sexual health services within the experimental group compared to the control group. Therefore, incorporating edutainment strategies into existing adolescent health programs is essential for improving health outcomes and fostering positive sexual health behaviors among adolescents.

RECOMMENDATIONS

Based on the study's findings, several recommendations are proposed:

1. Integration of Edutainment: Educational and health authorities should incorporate edutainment approaches into the school curricula at junior and senior secondary levels. These strategies should be culturally sensitive, age-appropriate, and evidence-based to effectively resonate with adolescents.

2. Training for Educators: Teachers and school counselors should receive specialized training on delivering edutainment programs to ensure effective implementation and sustained engagement among adolescents.

3. Addressing Sociocultural Barriers: Edutainment interventions should explicitly address social and cultural stigmas surrounding sexual health to foster more positive attitudes towards service utilization. Peer-led programs should be encouraged to normalize conversations around sexual health.

4. Expansion and Scaling-Up: Health policymakers should consider scaling up successful edutainment interventions across Lagos State and potentially nationwide to maximize impact and reach broader adolescent populations.

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