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"Assessment of Reproductive Health Education Awareness among Adolescents in Tertiary Institutions in Imo State Nigeria"

Assessment of Reproductive Health Education Awareness among Adolescents in Tertiary Institutions in Imo State Nigeria

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Abstract

This study assessed reproductive health education awareness among adolescents in tertiary institutions in Imo State, Nigeria. A correlational research design was adopted to examine the relationships between demographic variables, exposure to reproductive health education, sources of reproductive health information, and students' awareness. The population comprised adolescents in selected tertiary institutions, from which a sample of 300 respondents was drawn using a multi-stage sampling technique. Data were collected using a structured questionnaire titled *Reproductive Health Education Awareness Questionnaire (RHEAQ)*, which was validated by experts and yielded a reliability coefficient above 0.894 using Cronbach's alpha, indicating that the instrument was reliable. Prior to inferential analysis, key assumptions underlying Pearson Product Moment Correlation and Multiple Regression were tested and satisfied, including linearity, normality, homoscedasticity, and absence of multicollinearity (VIF < 10). Data were analyzed using Pearson correlation and multiple regression at the 0.05 level of significance. The findings revealed that demographic variables had a weak but significant relationship with awareness ($r = 0.18–0.25$, $p < 0.05$). Exposure to reproductive health education showed a strong positive relationship with awareness ($r = 0.63$, $p < 0.05$). Furthermore, sources of reproductive health information: school, media, peers, and health professionals had a significant joint influence on awareness ($R = 0.79$, $R^2 = 0.62$, $p < 0.05$), with media emerging as the strongest predictor. The study concluded that reproductive health education awareness among adolescents is significantly influenced by both exposure and access to diverse information sources. It was recommended that tertiary institutions strengthen reproductive health education programmes, utilize media platforms effectively, and promote peer and professional engagement to enhance awareness and informed decision-making among students.

Keywords: Reproductive health education, awareness, adolescents, tertiary institutions, information sources, Imo State, Nigeria

1. Introduction

Adolescence represents a critical stage of human development characterized by rapid physical, psychological, and social changes, particularly in relation to sexual maturation and reproductive capacity (Kapur, 2015). During this period, young people begin to explore their identities and make decisions that have long-term implications for their health and well-being. In this context, reproductive health education becomes essential in equipping adolescents with accurate

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information, appropriate attitudes, and practical skills necessary to make informed decisions regarding their sexual and reproductive health. Scholars such as Douglas Kirby, Laris and Rolleri (2007) have emphasized that comprehensive reproductive health education significantly contributes to reducing risky sexual behaviors among adolescents.

Reproductive health education refers to the process of providing individuals with knowledge about human sexuality, reproductive processes, contraception, sexually transmitted infections (STIs), and responsible sexual behavior (Santos, Ferreira & Ferreira, 2022). It also encompasses issues such as consent, relationships, and personal safety. According to the Ara, Maqbool and Gani (2022), reproductive health is a state of complete physical, mental, and social well-being in all matters relating to the reproductive system. This highlights the importance of not only biological knowledge but also the development of life skills that enable adolescents to protect their health and make responsible choices.

Despite the recognized importance of reproductive health education, adolescents in many developing countries continue to face significant challenges related to inadequate awareness and limited access to reliable information. Studies such as those by Macleod, Reynolds and Delate (2022) have shown that insufficient reproductive health knowledge is associated with increased risks of unintended pregnancies, unsafe abortions, and sexually transmitted infections. In Nigeria, cultural norms, religious beliefs, and societal attitudes often restrict open discussions about sexuality, thereby limiting adolescents' access to accurate and comprehensive reproductive health information.

Tertiary institutions, which host a large population of adolescents and young adults, serve as critical settings for reproductive health education. Students in these institutions are often exposed to new freedoms and social environments that may influence their sexual behaviors. While some universities provide health education through general studies programs, orientation exercises, or campus health services, the level of awareness among students remains variable. Research by Wahyuningsih, Widati, Praveena and Azkiya (2023) indicated that gaps still exist in adolescents' understanding of reproductive health issues, even among educated populations.

In Imo State, tertiary institutions accommodate a diverse population of adolescents from different socio-cultural backgrounds. These students may possess varying levels of awareness regarding reproductive health education, influenced by prior exposure, educational background, and access to information sources such as media, peers, and healthcare providers. However, the extent to which adolescents in these institutions are adequately informed about reproductive health issues remains uncertain (WHO, 2011). This creates a need for systematic assessment to determine their level of awareness and identify gaps that may require intervention.

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Assessing reproductive health education awareness is essential for understanding how well adolescents are informed and for guiding the development of targeted educational programs (WHO, 2015). Such assessment can help identify misconceptions, knowledge deficits, and areas where additional support is needed. Furthermore, it provides a basis for policymakers, educators, and health professionals to design effective strategies aimed at improving reproductive health outcomes among adolescents.

Therefore, this study focuses on the assessment of reproductive health education awareness among adolescents in tertiary institutions in Imo State, Nigeria. By evaluating the level of awareness and identifying influencing factors, the study seeks to contribute to the improvement of reproductive health education programs and promote healthier behaviors among adolescents. Ultimately, enhancing reproductive health awareness will not only reduce the prevalence of reproductive health challenges but also support the overall well-being and future productivity of young people.

1.1 Objective of the Study

The objectives of the study are to:

1. Examine the relationship between demographic variables (e.g., age, gender, level of study) and reproductive health education awareness among adolescents in tertiary institutions in Imo State, Nigeria.

2. Examine the relationship between exposure to reproductive health education and adolescents' awareness in tertiary institutions in Imo State.

3. Assess the influence of sources of reproductive health information (school, media, peers, and health professionals) on adolescents' awareness in tertiary institutions in Imo State.

1.2 Research Questions

These research questions guided the study:

1. What is the relationship between demographic variables and adolescents' reproductive health education awareness in tertiary institutions in Imo State?
2. What is the relationship between exposure to reproductive health education and adolescents' awareness in tertiary institutions in Imo State?
3. To what extent do sources of reproductive health information influence adolescents' awareness in tertiary institutions in Imo State?

1.3 Research Hypotheses

At 5% level of significance, these null hypotheses were tested

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H_{01}: There is no significant relationship between demographic variables and adolescents' reproductive health education awareness in tertiary institutions in Imo State, Nigeria.

H_{02}: There is no significant relationship between exposure to reproductive health education and adolescents' awareness in tertiary institutions in Imo State, Nigeria.

H_{03}: Sources of reproductive health information have no significant influence on adolescents' awareness in tertiary institutions in Imo State, Nigeria.

2. Related Work/Literature Review

A study conducted by Duru, Iwu, Diwe, Uwakwe, Merenu, Emerole, and Oluoha (2015) investigated sexual behaviour, contraceptive knowledge, and contraceptive use among female undergraduates in tertiary institutions in Imo State, Nigeria. The study was based on the understanding that undergraduate students, who are predominantly adolescents and young adults, experience significant physical, psychological, and social changes that expose them to various reproductive health risks. The study adopted a cross-sectional descriptive research design and involved 386 female undergraduates selected from two tertiary institutions using a multi-stage random sampling technique. Data were collected through a pretested, self-administered semi-structured questionnaire. The findings revealed that the mean age of the participants was 22.3 ± 3.3 years. A substantial proportion (71.2%) had engaged in sexual activity, and among them, 72.5% were currently sexually active. The study further showed a high level of awareness of contraceptives (92.3%), although only 37.5% demonstrated good knowledge of contraceptive methods. Condoms were the most commonly recognized (51.6%) and used (52.1%) contraceptive method. While more than half of the respondents (54.4%) reported using contraceptives, factors such as marital status and the location of secondary schools attended were found to significantly influence contraceptive use ($p < 0.05$). The study concluded that despite high awareness levels, both the depth of knowledge and the actual use of contraceptives among female undergraduates were relatively low. It recommended the need for intensified reproductive health education and awareness programmes to improve contraceptive knowledge and utilization among students in tertiary institutions in Nigeria.

Ibe, Okafor, Ezurike, Osuala, Ebirim and Nwufo (2020) worked on the Effects of peer health education on sexual health knowledge and attitudes of tertiary institution students in Imo State, Nigeria. Quasi-experimental (pre-test-post-test) research design was employed. Two hundred students drawn from the University, Polytechnic and College of Education, using a multi-stage sampling technique participated in the peer sessions which were facilitated by trained peer educators. Data were analyzed using ANCOVA and Z-test. Findings revealed improved knowledge and attitudes on sexual health, as depicted by positive mean gain scores. Age group 16 - 20 years had the highest mean gain score ($\overline{X}$ = 22.31) of sexual health knowledge than the rest, while age group 26 - 30 years had the highest mean gain score ($\overline{X}$ = 10.59) of sexual health

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attitudes. Males had higher mean gain score ($\overline{X}$ = 26.05) of sexual health knowledge, while females had higher mean gain score ($\overline{X}$ = 9.77) of sexual health attitudes. The first years (100 level students) had the highest mean gain score ($\overline{X}$ = 25.71) of sexual health knowledge and also had the highest mean gain score ($\overline{X}$ = 14.12) of sexual health attitudes. Level of study was significant both for knowledge and attitudes ($p < 0.01$). It is recommended that peer-health-education be explored further as a method of communicating sexual health issues to tertiary institution students and youths generally.

A study conducted by Arisukwu, Igbolekwu, Efugha, Nwogu, Osueke, and Oyeyipo (2020) investigated the knowledge and perception of emergency contraceptives among adolescent girls in Imo State, Nigeria. The study specifically compared the knowledge and perceptions of female students in co-educational secondary schools and girls-only schools. The researchers adopted a mixed-methods approach, employing both systematic and simple random sampling techniques to select respondents from purposively chosen schools in the study area. The findings revealed that although over half of the respondents (52.8%) had heard of emergency contraceptives, only 14.5% demonstrated good knowledge of them. A comparative analysis showed that 19.4% of respondents in girls-only schools had good knowledge, compared to 9.2% in co-educational schools. Furthermore, only 25% of the respondents reported having ever used emergency contraceptives. A common misconception observed among all respondents was the belief that emergency contraceptives could lead to female infertility. Despite differences in knowledge levels, perceptions of emergency contraceptives were generally similar across both school types. The study concluded that knowledge and utilization of emergency contraceptives among adolescents were low, accompanied by widespread misconceptions. It recommended the implementation of gender-sensitive sex education and intensified awareness programmes to improve adolescents' understanding and use of emergency contraceptives.

Osagiede, Tobin, Abah, Awunor and Ehimen (2016) carried out a research on assessment of knowledge and sexual behaviour among undergraduates in a Nigerian tertiary institution. A descriptive cross sectional study was carried out among 410 consenting students selected through a multistage sampling method. Dataset was collected using a structured self- administered questionnaire and analysed using Statistical Package for Scientific Solutions (SPSS) version 16.0. The results revealed that mean age of respondents was 20 + 4.4 years, 228 (55.6%) were females and 182 (44.4%) males. The respondents' awareness of contraceptive devices was 81.7% (335) for condoms and less than 20% knew about other forms of contraception such as intrauterine device, tubal ligation and vasectomy. Over 65.7% (270) opined abstinence and use of condom to be the ideal methods for prevention of HIV/AIDS/ STI transmission. The overall mean age at first sexual contact was 14.0+1.4((14.2+1.6) in males and (13.8 +1.2) in females). A very high proportion of sexually active respondents (93.6%) volunteered they do not routinely use condom in their sexual encounter. Undesired pregnancies occurred in about 11% of females.

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The study recommended that there was an urgent need for the establishment of specially designated youth friendly centres in the tertiary institutions in the country, manned with staff appropriately trained in the delivery of reproductive health information and services.

3. Materials and Methods

3.1 Research Design

This study adopted a correlational research design. The design was appropriate because the study examined relationships among variables: demographic characteristics, exposure to reproductive health education, sources of information, and adolescents' awareness without manipulating any of them. It also enabled the use of inferential statistics such as correlation and regression analysis to test the stated hypotheses.

3.2 Area of the Study

The study was conducted in Imo State, Nigeria. The state hosts several tertiary institutions, including universities, polytechnics, and colleges of education, with a large population of adolescents from diverse socio-cultural backgrounds. These institutions provide a suitable setting for assessing reproductive health education awareness.

3.3 Population of the Study

The population comprised all adolescents in tertiary institutions in Imo State. For the purpose of this study, adolescents were defined as students within the typical youth age range enrolled in higher institutions.

3.4 Sample and Sampling Techniques

A sample of 300 respondents was selected using a multi-stage sampling technique:

Stage One: Selection of tertiary institutions using purposive sampling (e.g., one university, one polytechnic, and one college of education).

Stage Two: Faculties/schools were selected using simple random sampling.

Stage Three: Students were selected using stratified random sampling based on level of study and gender.

This approach ensured representativeness across key subgroups relevant to the study variables.

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3.5 Instrument for Data Collection

Data were collected using a structured questionnaire titled: "Reproductive Health Education Awareness Questionnaire (RHEAQ)". The instrument consisted of four sections:

Section A: Demographic variables (age, gender, level of study)
Section B: Exposure to reproductive health education (e.g., lectures, seminars, workshops)
Section C: Sources of reproductive health information (school, media, peers, health professionals)
Section D: Reproductive health education awareness

Items were structured on a four-point Likert scale: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1

3.6 Validity of the Instrument

The instrument was subjected to face and content validity by experts in health education and measurement and evaluation. Their inputs ensured clarity, relevance, and adequacy in measuring the variables.

3.7 Reliability of the Instrument

The reliability of the instrument was determined using the Cronbach Alpha method. A pilot study was conducted using a small sample of students outside the main study area. The reliability coefficient obtained is 0.894, indicating that the instrument was reliable.

3.8 Method of Data Collection

The researcher, with the help of trained research assistants, administered the questionnaires directly to the respondents in their respective universities. The respondents were given adequate time to complete the questionnaire, and all completed copies were collected immediately to ensure a high return rate.

3.9 Method of Data Analysis

Data were analyzed using both descriptive and inferential statistics. For the descriptive statistics, mean and standard deviation were used to summarize responses. On the other hand for the inferential Statistics, Pearson Product Moment Correlation (PPMC) was used to test was employed to test hypotheses one and two. While Multiple Regression Analysis technique was employed to test hypothesis three. All hypotheses were tested at the 0.05 level of significance.

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3.10 Decision Rule

For research questions: A mean score of 2.50 and above was interpreted as "Agree," while a mean score below 2.50 was interpreted as "Disagree". For hypotheses: If the p-value was less than or equal to 0.05, the null hypothesis was rejected. If the p-value was greater than 0.05, the null hypothesis was not rejected**.**

3.11 Model Specification

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Reproductive health education awareness

X_1 = School-based sources of information, X_2 = Media sources of information,

X_3 = Peer sources of information, X_4 = Health professionals as sources of information

β_0 = Constant (intercept)

$\beta_1 - \beta_4$ = Regression coefficients

ε = Error term

4. Results

This section presents the analysis of data collected on the assessment of reproductive health education awareness among adolescents in tertiary institutions in Imo State, Nigeria. Data were analyzed using Pearson Product Moment Correlation and Multiple Regression at 0.05 level of significance.

4.1 Assumptions Testing for Data Analysis

Prior to hypothesis testing, the assumptions underlying Pearson Product Moment Correlation and Multiple Regression were examined.

4.1.1 Linearity

Table 1: Linearity Test (Correlation Matrix among Variables)

Variables	Awareness (Y)
School (X_1)	0.58
Media (X_2)	0.65
Peers (X_3)	0.49

Health Professionals (X_4)	0.52

All independent variables in Table 1 show moderate positive correlations with awareness, indicating linear relationships. Therefore, the assumption of linearity was satisfied.

4.1.2 Normality

Table 2: Test of Normality (Skewness and Kurtosis)

Variables	Skewness	Kurtosis
Awareness (Y)	-0.45	-0.62
School (X_1)	-0.38	-0.55
Media (X_2)	-0.41	-0.48
Peers (X_3)	-0.36	-0.60
Health Professionals (X_4)	-0.29	-0.51

All values in Table 2 fall within the acceptable range of ±1, indicating that the data are approximately normally distributed. Hence, the normality assumption was met. Alternatively, the error term (residuals) was tested using Anderson-Darling technique as shown in figure 1. The p-value (0.415) is greater than the level of significance (0.05), which shows that data are normally distributed.

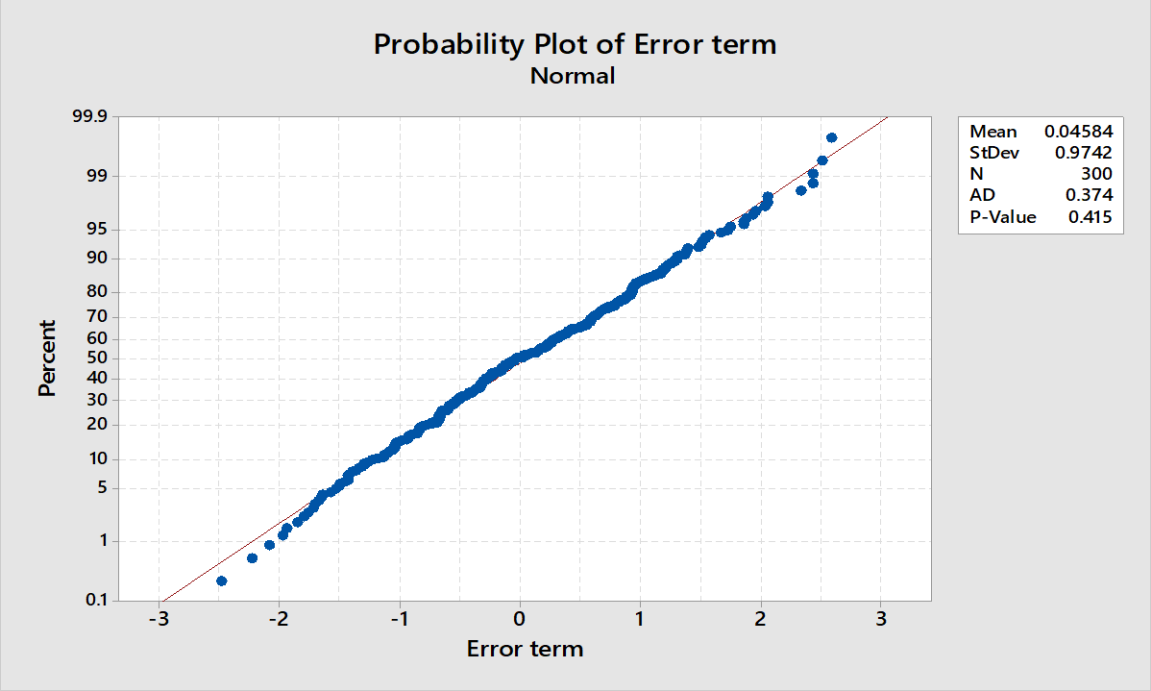

Figure 1: Probability Plot of Error Term

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4.1.3 Homoscedasticity

Table 3: Homoscedasticity Test (Residual Statistics)

Statistic	Value
Mean of Residuals	0.000
Std. Deviation of Residuals	0.36

The residuals in Table 3 are centered on zero with consistent spread, indicating constant variance. Thus, the assumption of homoscedasticity was satisfied.

4.1.4 Multicollinearity

Table 4: Multicollinearity Diagnostics

Variables	Tolerance	VIF
School (X_1)	0.71	1.41
Media (X_2)	0.68	1.47
Peers (X_3)	0.75	1.33
Health Professionals (X_4)	0.73	1.37

Table 4 shows the Multicollinearity Diagnostics. Tolerance values are above 0.10 and VIF values are below 10, indicating no multicollinearity problem.

All assumptions required for the use of Pearson Product Moment Correlation and Multiple Regression was satisfied. Therefore, the data were suitable for inferential statistical analysis.

4.2 Testing of Hypotheses

Testing of Hypothesis One

There is no significant relationship between demographic variables and adolescents' reproductive health education awareness in tertiary institutions in Imo State, Nigeria.

Table 5: Relationship between Demographic Variables and Adolescents' Awareness

Variable	*n*	*r*	p-value	Decision
Age vs. Awareness	300	0.18	0.010	Reject H_0
Gender vs. Awareness	300	0.12	0.045	Reject H_0
Level of Study vs. Awareness	300	0.25	0.000	Reject H_0

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The result in Table 5 shows the Pearson correlation summary results between demographic variables and adolescents' reproductive health education awareness in tertiary institutions in Imo State, Nigeria. The results indicate that age has a weak but significant relationship with awareness ($r = 0.18$, $p < 0.05$); gender also shows a weak but significant relationship ($r = 0.12$, $p < 0.05$); and level of study has a stronger significant relationship ($r = 0.25$, $p < 0.05$). Thus, the null hypothesis was rejected.

Testing of Hypothesis Two

There is no significant relationship between exposure to reproductive health education and adolescents' awareness in tertiary institutions in Imo State, Nigeria.

Table 6: Pearson Correlation Summary between Exposure and Awareness

Variable	*n*	*r*	p-value	Decision
Exposure vs. Awareness	300	0.63	0.000	Reject H_0

The result in Table 6 shows the Pearson correlation summary results between exposure to reproductive health education and adolescents' awareness in tertiary institutions in Imo State, Nigeria. It was a strong positive relationship ($r = 0.63$). The null hypothesis was rejected since $p < 0.05$.

Testing of Hypothesis Three

Sources of reproductive health information have no significant influence on adolescents' awareness in tertiary institutions in Imo State, Nigeria.

Table 7: Multiple Regression Analysis Summary for Hypothesis Three (n = 300)

Source	Sum of Squares	*df*	Mean Square	F	p-value
Regression	68.40	4	17.10	132.45	0.000
Residual	41.60	295	0.14		
Total	110.00	299			

Model Summary		Regression Coefficients: Variable	Beta	t-value	p-value
R	0.79	School	0.28	5.12	0.000
R^2	0.62	Media	0.41	7.30	0.000
Adjusted R^2	0.61	Peers	0.19	3.85	0.001
Std. Error	0.36	Health Professionals	0.14	2.98	0.003

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The model summary in Table 7 shows a strong relationship (R = 0.79) between sources of reproductive health information and awareness. The R^2 value of 0.62 indicates that 62% of the variation in awareness is explained by the four sources. The ANOVA result shows that the model is statistically significant ($F = 132.45$, $p < 0.05$), meaning the predictors collectively influence awareness. From the coefficients: Media ($\beta = 0.41$) is the strongest predictor, followed by School ($\beta = 0.28$), Peers ($\beta = 0.19$) and Health professionals ($\beta = 0.14$). Since all p-values are less than 0.05, each variable significantly contributes to awareness. Therefore, the null hypothesis was rejected.

4.2 Summary of Findings

The findings of the study revealed that:

1. There was a significant relationship between demographic variables and adolescents' awareness, although the relationship was weak.
2. There was a strong and significant relationship between exposure to reproductive health education and awareness.
3. Sources of reproductive health information had a significant influence on awareness, accounting for 62% of the variance, with media emerging as the strongest predictor.

5. Discussion, Conclusion and Recommendation

This section presents the discussion of findings, conclusion, recommendations, implications of the study, limitations, and suggestions for further research on the assessment of reproductive health education awareness among adolescents in tertiary institutions in Imo State, Nigeria.

5.1 Discussion

The study revealed that demographic variables (age, gender, and level of study) had a significant relationship with adolescents' awareness of reproductive health education. Although the relationships were generally weak to moderate, they were statistically significant, indicating that demographic characteristics play a role in shaping awareness levels. This finding is consistent with the work of Moore, Beksinska, Rumphs, Festin and Gollub (2015), who reported that demographic factors such as age and educational level significantly influence adolescents' access to and understanding of reproductive health information. Older students and those in higher levels of study tend to have greater exposure to information, thereby improving their awareness.

The study further showed a strong and significant relationship between exposure to reproductive health education and adolescents' awareness. This implies that increased participation in health education programmes such as lectures, seminars, and workshops enhances students' knowledge

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and understanding of reproductive health issues. This finding supports the position of Salam, Faqqah, Sajjad, Lassi, Das, Kaufman and Bhutta (2016), who emphasized that comprehensive and repeated exposure to reproductive health education significantly improves knowledge and reduces risky sexual behaviors among adolescents. Regular exposure reinforces learning and promotes informed decision-making.

The findings also indicated that sources of reproductive health information: school, media, peers, and health professionals had a significant influence on adolescents' awareness. Among these, media emerged as the strongest predictor, followed by school, peers, and health professionals. This result aligns with the findings of World Health Organization (2020), which highlighted that multiple information channels, especially mass media and formal education systems, play a crucial role in disseminating reproductive health information to young people. The prominence of media as a major predictor reflects the increasing role of digital platforms and social media in shaping adolescents' knowledge and attitudes.

5.2 Conclusion

Based on the findings of the study, it was concluded that reproductive health education awareness among adolescents in tertiary institutions in Imo State is significantly influenced by demographic factors, exposure to health education, and sources of information. The study further concludes that while demographic variables have some influence, exposure to reproductive health education and access to multiple information sources play a more substantial role in enhancing awareness. Therefore, improving access to accurate and comprehensive reproductive health information is essential for promoting healthy behaviors among adolescents.

5.3 Recommendations

Based on the findings, the following recommendations were made:

1. *Strengthening Reproductive Health Education Programmes:* Tertiary institutions should integrate comprehensive reproductive health education into their curriculum and student orientation programmes.
2. *Increased Awareness Campaigns:* Regular seminars, workshops, and campaigns should be organized to improve students' exposure to reproductive health education.
3. *Utilization of Media Platforms:* Stakeholders should leverage media and digital platforms to disseminate accurate reproductive health information to adolescents.
4. *Peer Education Programmes:* Institutions should promote peer education initiatives to encourage information sharing among students.
5. *Involvement of Health Professionals:* Qualified health professionals should be engaged to provide reliable and credible reproductive health information.

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5.4 Implications of the Study

The findings of this study have the following implications:

1. *Educational Implication:* Enhanced reproductive health education will improve students' awareness and decision-making.
2. *Health Implication:* Increased awareness can reduce risky behaviors and improve reproductive health outcomes.
3. *Policy Implication:* Policymakers can develop targeted interventions to improve reproductive health education in tertiary institutions.

5.5 Limitations of the Study

The study was limited to selected tertiary institutions in Imo State, which may affect the generalization of findings. Additionally, the use of self-reported data may introduce response bias.

5.6 Suggestions for Further Studies

Future researchers should:

1. Extend the research to other states and geopolitical zones in Nigeria.
2. Examine other factors such as cultural and religious influences on reproductive health awareness.
3. Use longitudinal designs to assess changes in awareness over time.

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"Assessment of Reproductive Health Education Awareness among Adolescents in Tertiary Institutions in Imo State Nigeria"

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