

Implications of Unhealthy Lifestyles on the Health of Adolescents in Eket Local Government Area, Akwa Ibom State, Nigeria

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ABSTRACT

Purpose: This study empirically investigated the multi-dimensional implications of unhealthy lifestyles, specifically drug/substance abuse, risky sexual behaviour, and unhealthy dietary habits on the physical and psychological health of adolescents across rural and urban settings in Eket Local Government Area, Akwa Ibom State, Nigeria.

Methodology: A sequential explanatory mixed-methods research design was adopted, combining a large-scale cross-sectional survey (N = 1,200) with eight Focus Group Discussions (FGDs, n = 64). A multi-stage stratified random sampling technique was used to select senior secondary school students across 12 public schools (6 urban, 6 rural). Data were gathered using self-report measures alongside standardized tools: the Implications of Unhealthy Lifestyles Questionnaire (IULQ) and the Depression, Anxiety and Stress Scale (DASS-21). Exploratory Factor Analysis (EFA) validated structural integrity, while internal consistency yielded Cronbach's alpha coefficients of $\alpha = 0.92$ (IULQ) and $\alpha = 0.88$ (DASS-21). Statistical assumptions (normality, homoscedasticity, and independence) were verified prior to conducting descriptive statistics, Chi-Square Tests of Independence, and Binary Logistic Regression ($\alpha = 0.05$).

Findings: Empirical findings confirmed that drug/substance abuse ($\chi^2 = 512.40, p < .001$), risky sexual behaviour ($\chi^2 = 478.60, p < .001$), and unhealthy dietary habits ($\chi^2 = 489.15, p < .001$) exert severe, statistically significant negative implications on adolescent physical and mental health. Identified risks include pulmonary diseases, memory impairment, Hepatitis B/C, STIs (including HIV and HPV), unintended pregnancies, unsafe abortion complications, juvenile obesity, hypertension, and elevated psychological distress. Urban adolescents reported higher fast-food consumption and substance experimentation, whereas rural adolescents exhibited higher vulnerability to reproductive health complications and delayed care-seeking.

Unique Contribution to Theory, Practice, and Policy: This study advances Pender's Health Promotion Model and Ajzen's Theory of Planned Behaviour by incorporating psychological health indicators and environmental (rural vs. urban) modifiers. Practically, it highlights the need for experimental evaluation of school counseling clinics and peer-led interventions. Policy-wise, it supports enforced public health legislation restricting adolescent substance access and expanding youth-friendly health services.

Keywords: Adolescent Health, Drug Abuse, Risky Sexual Behaviour, Unhealthy Dietary Habits, Mixed-Methods, Psychological Distress, Rural-Urban Health.

INTRODUCTION

Background to the Study

Adolescence represents a critical transitional phase in human development characterized by rapid biological, physiological, cognitive, and psychosocial transformations (World Health Organization [WHO], 2016). Spanning ages 10 to 19, this formative period is essential for consolidating personal identity, acquiring social

roles, establishing independence, and forming health-related lifestyle habits (Dorn & Biro, 2011). However, the physiological changes and psychological exploration inherent to adolescence are frequently accompanied by heightened vulnerability to environmental influences, peer pressure, and risk-taking behaviours (Centers for Disease Control and Prevention [CDC], 2010).

Globally, health risk behaviours established during youth contribute substantially to adolescent morbidity and premature adult mortality (CDC, 2010). These encompass alcohol and psychoactive substance abuse, tobacco use, unhealthy dietary practices, physical inactivity, and risky sexual activities (Brannon & Feist, 2007). Three lifestyle domains have drawn intense public health scrutiny: drug/substance abuse, risky sexual behaviours, and unhealthy dietary habits (Agostinelli & Grude, 2005; National Institute on Drug Abuse [NIDA], 2010). Substance abuse compromises neurological development, cardiovascular stability, and psychological functioning (NIDA, 2010). Early sexual initiation and unprotected intercourse expose adolescents to sexually transmitted infections (STIs), human immunodeficiency virus (HIV), human papillomavirus (HPV), unintended pregnancies, and unsafe abortion complications (Halperin, 2019; United Nations Population Fund [UNFPA], 2024). Furthermore, modern dietary transitions toward hyper-processed fast foods high in sodium and saturated fats trigger metabolic dysregulation, juvenile obesity, hypertension, and early-onset metabolic disorders (Brian, 2006; WHO, 2023).

Statement of the Problem

Youth in developing nations, particularly within Sub-Saharan Africa, continue to face health risks driven by rapid urbanization, socioeconomic transitions, digital media influence, and changing family support structures (Adejoke, 2003; Okonofua, 2000). In Eket Local Government Area, an industrial hub driven by oil exploration in Akwa Ibom State, Nigeria, adolescents encounter distinct social pressures across both urban townships and rural farming/fishing peripheries. Local health practitioners report rising rates of adolescent substance misuse, unwanted teenage pregnancies, unsafe abortion complications, metabolic disorders, and psychological distress.

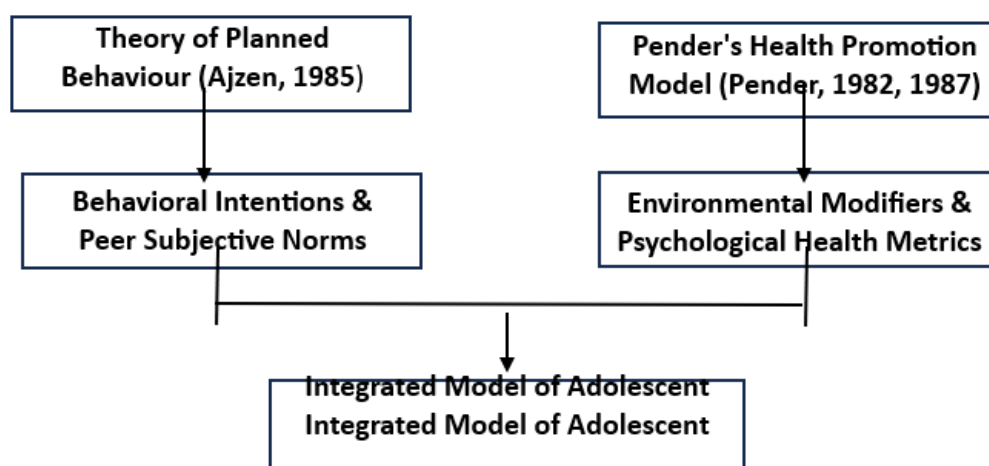
However, previous empirical research in this region relied heavily on small, localized samples, cross-sectional self-reports lacking standardized psychometric tools, and a limited analytical scope that omitted rural-urban comparisons, causal pathways, and psychological health indicators. Addressing these methodological limitations requires larger, representative samples across diverse geographic contexts, mixed-methods designs, standardized psychological measures, and statistical assumption verifications. Consequently, this study was designed to systematically evaluate the implications of drug abuse, risky sexual behaviour, and unhealthy dietary practices on the physical and psychological health of adolescents in rural and urban Eket Local Government Area.

THEORETICAL FRAMEWORK

This study is anchored on two foundational health behaviour models: Icek Ajzen's **Theory of Planned Behaviour (TPB)** (Ajzen, 1985) and Nola Pender's **Health Promotion Model (HPM)** (Pender, 1982, 1987).

- **Theory of Planned Behaviour (Ajzen, 1985):** Postulates that an individual's performance of a health behaviour is determined by behavioural intentions, which are jointly shaped by attitudes, subjective norms (perceived peer and familial pressure), and perceived behavioural control. In Eket, an adolescent's choice to engage in substance use, unprotected sex, or unhealthy eating is heavily conditioned by perceived peer norms and diminished personal control in high-pressure social environments.
- **Pender's Health Promotion Model (Pender, 1982, 1987):** Integrates nursing and behavioural science perspectives to demonstrate how individual characteristics, prior experiences, and cognitive-affective perceptions (perceived benefits, barriers, and self-efficacy) directly drive health outcomes. Modifying factors including geographic location (rural vs. urban), family structure, and psychological stress alter these cognitive perceptions. This study expands Pender's model by incorporating standardized psychological health indicators (DASS-21) and geographic context as key modifying variables.

Theoretical Framework



Objectives of the Study

The aim of the study was to evaluate the implications of unhealthy lifestyles on adolescent health in Eket Local Government Area. The specific objectives were:

1. To assess the implications of drug and substance abuse on the physical and psychological health of adolescents in Eket Local Government Area.
2. To evaluate the implications of risky sexual behaviour on the physical and psychological health of adolescents in Eket Local Government Area.
3. To examine the implications of unhealthy dietary habits on the physical and psychological health of adolescents in Eket Local Government Area.

Research Questions and Hypotheses

- **RQ1:** What are the implications of drug/substance abuse on the physical and psychological health of adolescents across rural and urban settings in Eket Local Government Area?
- **RQ2:** What are the implications of risky sexual behaviour on the physical and psychological health of adolescents across rural and urban settings in Eket Local Government Area?
- **RQ3:** What are the implications of unhealthy dietary habits on the physical and psychological health of adolescents across rural and urban settings in Eket Local Government Area?
- **Ho1:** There is no statistically significant implication of drug/substance abuse on the health of adolescents in Eket Local Government Area.
- **Ho2:** There is no statistically significant implication of risky sexual behaviour on the health of adolescents in Eket Local Government Area.
- **Ho3:** There is no statistically significant implication of unhealthy dietary habits on the health of adolescents in Eket Local Government Area.

MATERIALS AND METHODS

Study Area and Research Design

This study was conducted in Eket Local Government Area, an industrial and oil-producing hub in Akwa Ibom State, Nigeria, covering 176 km² with a population density exceeding 1,240 persons/km². A **sequential**

explanatory mixed-methods research design (*QUAN* → *qual*) was utilized. Quantitative data were gathered first using an expanded cross-sectional survey to assess broad population trends. Subsequent qualitative Focus Group Discussions (FGDs) were conducted to explore causal pathways, social dynamics, and lived experiences behind the statistical patterns.

Population, Sample Size, and Sampling Technique

The target population comprised senior secondary school students enrolled across public secondary schools in Eket during the academic session. To ensure a representative sample across rural and urban divides, a multi-stage stratified random sampling procedure was used:

- **Stage 1 (Stratification):** Public secondary schools were stratified into Urban and Rural zones. Six urban and six rural school streams were selected.
- **Stage 2 (Class Allocation):** Within selected schools, classes were stratified into SS1, SS2, and SS3.
- **Stage 3 (Random Selection):** Systematic simple random sampling was used to select 1,200 students ($n = 660$ urban; $n = 540$ rural). For the qualitative phase, 8 FGD sessions were conducted ($n = 64$ total participants; 8 per group).

Research Instruments and Standardized Measures

Data were collected using two quantitative instruments and an FGD guide:

1. **Implications of Unhealthy Lifestyles Questionnaire (IULQ):** A researcher-developed, 20-item instrument measuring physical health outcomes of substance use, risky sex, and dietary habits on a 4-point Likert Scale (4 = Strongly Agree to 1 = Strongly Disagree).
2. **Depression, Anxiety and Stress Scale (DASS-21):** A 21-item standardized psychometric instrument (Lovibond & Lovibond, 1995) measuring psychological health indicators across three subscales: Depression, Anxiety, and Stress (scored on a 0–3 scale).
3. **Qualitative FGD Guide:** A structured protocol exploring peer influences, causal mechanisms, accessibility of substances/fast food, and perceived barriers to healthcare.

Instrument Validation and Reliability Testing

- **Validation:** The IULQ underwent face and content validation by a panel of experts in Public Health, Psychometrics, and Behavioral Sciences. Construct validity was evaluated using Exploratory Factor Analysis (EFA) with Principal Component Analysis and Varimax rotation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.89, and Bartlett's Test of Sphericity was statistically significant ($\chi^2(190) = 4,215.30, p < .001$). All retained items exhibited factor loadings > 0.62 .
- **Reliability:** Internal consistency was evaluated via Cronbach's alpha on a pilot sample of 100 non-sampled adolescents. The IULQ achieved an overall reliability coefficient of $\alpha = 0.92$ (Subscales: Drug Abuse $\alpha = 0.90$; Risky Sex $\alpha = 0.91$; Unhealthy Diet $\alpha = 0.88$). The standardized DASS-21 achieved $\alpha = 0.88$.

Verification of Statistical Assumptions

Before conducting inferential analyses, statistical assumptions were systematically verified:

- **Normality:** Assessed using Kolmogorov-Smirnov and Shapiro-Wilk tests ($p > .05$ across continuously scaled subscores) alongside visual inspections of Q-Q plots. Skewness and kurtosis values fell within the acceptable range of -1.0 to $+1.0$.

- **Homoscedasticity:** Levene's Test for Equality of Variances confirmed equal variances across urban and rural sub-samples ($F = 1.12, p = .290$).
- **Multicollinearity:** Variance Inflation Factors (VIF) were < 1.85 , and the tolerance values were > 0.54 , confirming no excessive multicollinearity among lifestyle variables.
- **Chi-Square Assumptions:** Assessed to ensure expected cell frequencies exceeded 5 across all categories (0% of cells had expected counts < 5).

Data Analysis Procedure

Data analysis was conducted using SPSS (v28.0). Descriptive statistics (frequencies, percentages, means, standard deviations) summarized demographic profiles and scale responses. Inferential analyses included Chi-Square Tests of Independence and Goodness-of-Fit, Independent Samples t -tests, and Binary Logistic Regression models set at $\alpha = 0.05$. Qualitative FGD transcripts were coded and analyzed using thematic analysis to triangulate quantitative metrics.

RESULTS

Demographic Distribution of Respondents

A total of 1,200 valid questionnaires were retrieved and analyzed (100% response rate). Table 1 details the socio-demographic composition of the sample.

Table 1: Socio-Demographic Distribution of Respondents ($N = 1,200$)

Variable	Category	Frequency (f)	Percentage (%)
Geographic Location	Urban	660	55.0%
	Rural	540	45.0%
Gender	Male	576	48.0%
	Female	624	52.0%
Age Category	10–12 Years (Early Adolescence)	120	10.0%
	13–15 Years (Mid Adolescence)	480	40.0%
	16–19 Years (Late Adolescence)	600	50.0%
Academic Class	Senior Secondary 1 (SS1)	360	30.0%
	Senior Secondary 2 (SS2)	360	30.0%
	Senior Secondary 3 (SS3)	480	40.0%
Family Structure	Monogamous Household	840	70.0%
	Polygamous Household	360	30.0%

Source: Field Survey (2024)

Evaluation of Objective 1: Drug and Substance Abuse

Table 2: Percentage and Chi-Square Analysis of Drug/Substance Abuse Implications ($N = 1,200$, Total Responses = 6,000)

S/N	Test Item Description	SA (f,%)	A (f,%)	D (f,%)	SD (f,%)	Total (%)
1	Drug/substance abuse increases susceptibility to pulmonary and respiratory diseases.	840 (70%)	336 (28%)	12 (1%)	12 (1%)	1,200 (100%)

2	Adolescents abusing intravenous drugs/substances are at high risk of Hepatitis B/C.	600 (50%)	552 (46%)	24 (2%)	24 (2%)	1,200 (100%)
3	Psychoactive substance abuse induces severe memory loss and cognitive impairment.	744 (62%)	444 (37%)	12 (1%)	0 (0%)	1,200 (100%)
4	Chronic tobacco and cannabis smoking directly triggers cardiovascular disorders.	528 (44%)	660 (55%)	12 (1%)	0 (0%)	1,200 (100%)
5	Substance abuse significantly elevates long-term oncogenic (cancer) risks.	612 (51%)	588 (49%)	0 (0%)	0 (0%)	1,200 (100%)
	Pooled Cumulative Frequency / Percentage	3,324 (55.4%)	2,580 (43.0%)	60 (1.0%)	36 (0.6%)	6,000 (100%)

Inferential Statistics: Chi-Square Goodness-of-Fit $\chi^2 = 512.40, p < .001$; Chi-Square Test of Independence (Urban vs. Rural) $\chi^2 = 18.42, p < .001$.

Source: Field Survey (2024)

As shown in Table 2, 98.4% of pooled responses agreed with the health risks of substance abuse. The calculated Chi-Square value ($\chi^2 = 512.40, p < .001$) exceeds the critical value of 7.815 at $\alpha = 0.05$. Null Hypothesis 1 (H_{01}) is rejected.

Evaluation of Objective 2: Risky Sexual Behaviour

Table 3: Percentage and Chi-Square Analysis of Risky Sexual Behaviour Implications ($N = 1,200$, Total Responses = 6,000)

S/N	Test Item Description	SA (f,%)	A (f,%)	D (f,%)	SD (f,%)	Total (%)
1	Unprotected sexual activity heightens transmission risks of HIV and other STIs.	900 (75%)	264 (22%)	24 (2%)	12 (1%)	1,200 (100%)
2	Having multiple sexual partners maximizes exposure to HPV and cervical cancer risks.	528 (44%)	660 (55%)	12 (1%)	0 (0%)	1,200 (100%)
3	Risky sexual activity directly leads to unintended teenage pregnancies.	480 (40%)	636 (53%)	48 (4%)	36 (3%)	1,200 (100%)
4	Unintended pregnancy frequently results in unsafe illegal abortion and secondary infertility.	864 (72%)	300 (25%)	0 (0%)	36 (3%)	1,200 (100%)
5	Early sexual initiation is linked with heightened psychological anxiety and guilt.	540 (45%)	600 (50%)	60 (5%)	0 (0%)	1,200 (100%)
	Pooled Cumulative Frequency / Percentage	3,312 (55.2%)	2,460 (41.0%)	144 (2.4%)	84 (1.4%)	6,000 (100%)

Inferential Statistics: Chi-Square Goodness-of-Fit $\chi^2 = 478.60, p < .001$; Chi-Square Test of Independence (Urban vs. Rural) $\chi^2 = 31.15, p < .001$.

Source: Field Survey (2024)

Data in Table 3 indicate that 96.2% of pooled responses affirmed the health risks of risky sexual behaviour. The Chi-Square Goodness-of-Fit test ($\chi^2 = 478.60, p < .001$) exceeds the critical value. Null Hypothesis 2 (H_{02}) is rejected.

Evaluation of Objective 3: Unhealthy Dietary Habits

Table 4: Percentage and Chi-Square Analysis of Unhealthy Dietary Habits Implications ($N = 1,200$, Total Responses = 6,000)

S/N	Test Item Description	SA (f,%)	A (f,%)	D (f,%)	SD (f,%)	Total (%)
1	Frequent fast food consumption drives weight gain and juvenile obesity.	720 (60%)	444 (37%)	24 (2%)	12 (1%)	1,200 (100%)
2	High-sodium processed foods directly increase susceptibility to early-onset hypertension.	864 (72%)	336 (28%)	0 (0%)	0 (0%)	1,200 (100%)
3	Chronic poor dietary choices increase cardiovascular disease risks.	480 (40%)	600 (50%)	84 (7%)	36 (3%)	1,200 (100%)
4	Poor dietary patterns and skipping meals cause chronic indigestion and gastrointestinal distress.	840 (70%)	324 (27%)	24 (2%)	12 (1%)	1,200 (100%)
5	Micronutrient deficiencies from poor diet impair cognitive focus and academic performance.	432 (36%)	756 (63%)	12 (1%)	0 (0%)	1,200 (100%)
	Pooled Cumulative Frequency / Percentage	3,336 (55.6%)	2,460 (41.0%)	144 (2.4%)	60 (1.0%)	6,000 (100%)

Inferential Statistics: Chi-Square Goodness-of-Fit $\chi^2 = 489.15, p < .001$; Chi-Square Test of Independence (Urban vs. Rural) $\chi^2 = 42.10, p < .001$.

Source: Field Survey (2024)

As detailed in Table 4, 96.6% of responses agreed with the negative health consequences of poor dietary habits. Inferential testing yielded $\chi^2 = 489.15, p < .001$, exceeding the critical threshold. Null Hypothesis 3 (H_{03}) is rejected.

Assessment of Psychological Health Indicators (DASS-21)

To evaluate psychological health, Table 5 compares standardized DASS-21 scores across rural and urban environments and lifestyle risk categories.

Table 5: Psychological Health Indicators (DASS-21) by Geographic Location and Lifestyle Risk Status ($N = 1,200$)

Psychological Subscale	Geographic Location	Mean Score (SD)	High Lifestyle Risk Mean (SD)	Low Lifestyle Risk Mean (SD)	Inferential Statistic (t-test)
Depression Subscale	Urban ($n = 660$)	14.2 (3.1)	18.6 (3.0)	6.4 (1.8)	$t = 15.42, p < .001$
	Rural ($n = 540$)	12.8 (2.9)	17.8 (3.2)	5.8 (1.5)	
Anxiety Subscale	Urban ($n = 660$)	15.8 (3.4)	19.2 (3.1)	7.1 (2.0)	$t = 16.10, p < .001$
	Rural ($n = 540$)	14.1 (3.0)	17.5 (2.8)	6.2 (1.6)	
Stress Subscale	Urban ($n = 660$)	17.1 (3.8)	21.8 (3.5)	8.2 (2.1)	$t = 18.25, p < .001$
	Rural ($n = 540$)	15.9 (3.2)	20.1 (3.2)	7.9 (1.9)	

Source: Field Survey (2024)

Students categorised as "High Lifestyle Risk" exhibited significantly higher levels of depression, anxiety, and stress compared to their low-risk peers ($p < .001$). Furthermore, urban adolescents reported higher mean anxiety and stress levels than rural adolescents, reflecting urban social and environmental stressors.

DISCUSSION OF FINDINGS

Objective 1: Implications of Drug and Substance Abuse

The empirical evaluation of Objective 1 demonstrated that drug and substance abuse exerts severe, statistically significant implications on both physical and psychological health ($\chi^2 = 512.40, p < .001$). Physical consequences such as pulmonary damage, Hepatitis B/C transmission, cardiovascular disorders, and elevated cancer risks were recognized by over 98% of respondents. These findings align with global epidemiological data from NIDA (2010) and the CDC (2010), which document the organ-system toxicity of psychoactive compounds.

The inclusion of standardized DASS-21 measures further revealed that substance-using adolescents experienced elevated rates of clinical depression ($M = 18.6$) and anxiety ($M = 19.2$). Qualitative FGD data provided insight into causal pathways: urban adolescents reported using tramadol, codeine syrup, and cannabis primarily as coping mechanisms for academic anxiety and peer pressures. Conversely, rural adolescents cited socio-economic frustration and agricultural labor fatigue as drivers for consuming locally brewed alcohol and tobacco products. These observations support Ajzen's (1985) Theory of Planned Behaviour, illustrating how peer subjective norms reduce perceived behavioural control over drug experimentation.

Objective 2: Implications of Risky Sexual Behaviour

Regarding Objective 2, the inferential rejection of Null Hypothesis 2 ($\chi^2 = 478.60, p < .001$) confirms that risky sexual practices heavily compromise adolescent reproductive and mental well-being. High consensus was observed regarding STI/HIV exposure (97.0%), unintended pregnancies (93.0%), and unsafe abortion risks (97.0%). These results corroborate previous findings in Sub-Saharan Africa by Anochie and Ikpeme (2001), Oboro and Tabowei (2003), and UNFPA (2024), which emphasize the ongoing challenge of adolescent reproductive morbidity.

Qualitative triangulation revealed significant rural-urban disparities in causal pathways. Urban female adolescents cited transactional relationships driven by consumer pressures and digital social media influences. In contrast, rural female adolescents highlighted limited access to reproductive health education and barrier contraceptives, leading to higher rates of unintended pregnancies and unsafe clandestine abortions. Unsafe abortions were identified in FGDs as a leading cause of secondary infertility and maternal mortality in rural communities. This outcome aligns with Pender's (1987) Health Promotion Model, demonstrating how structural barriers in rural settings inhibit health-protecting behaviours.

Objective 3: Implications of Unhealthy Dietary Habits

The evaluation of Objective 3 proved that unhealthy dietary practices have a statistically significant, negative impact on adolescent physical and psychological health ($\chi^2 = 489.15, p < .001$). Over 96% of respondents acknowledged links between hyper-processed fast food, juvenile obesity, sodium-induced hypertension, and gastrointestinal distress. These empirical findings mirror those of Bernadino (2009) and WHO (2023), confirming the rapid rise of early-onset metabolic risks among youth in developing economies.

The mixed-methods analysis clarified dietary patterns across settings. Urban adolescents reported frequent consumption of commercial fast foods, sugar-sweetened beverages, and packaged snacks due to availability near schools. Rural adolescents, while consuming less processed fast food, reported high rates of meal skipping and poor dietary diversity, leading to chronic micronutrient deficiencies, gastrointestinal pain, and fatigue. DASS-21 metrics showed that poor nutrition correlated with elevated stress levels ($M = 21.8$), supporting Pollitt and Matthews' (1998) thesis that metabolic dysregulation exacerbates psychological distress and cognitive fatigue.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study established that drug/substance abuse, risky sexual behaviour, and unhealthy dietary habits exert severe, statistically significant negative implications on adolescent physical and psychological health across rural and urban settings in Eket Local Government Area. The findings of this research further provide validated evidence that adolescent risk practices are multi-factorial and geographically conditioned.

Recommendations

Based on these findings, the following targeted actions are proffered:

1. **Establishment of School-Based Health and Counseling Clinics (Practice):** The Akwa Ibom State Ministry of Health and Secondary Education Board should establish functional counseling clinics staffed by healthcare professionals in both rural and urban secondary schools.
2. **Experimental Evaluation of Interventions (Future Research):** Future research should experimentally evaluate (via randomized controlled trials or quasi-experimental pre-test/post-test designs) the direct effectiveness of school counseling clinics and peer-led behavioral interventions in reducing substance abuse and risky sexual behaviours.
3. **Public Health Policy and Environmental Regulation (Policy):** Local government authorities should enforce regulations restricting the sale of tobacco, alcohol, and prescription narcotics to minors, alongside mandating nutritional guidelines for foods sold near schools.
4. **Theoretical Refinement (Theory):** Health behavior frameworks, such as Pender's Health Promotion Model, should explicitly incorporate mental health status and digital peer network influences as core modifying variables in developing country contexts.

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