



JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)

Vol. 4 AUGUST - SEPTEMBER; 2025
ISSN ONLINE: 3092-9253



Editor in-Chief
PROF. PATRICK C. IGBOJINWAEKWU

JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)
VOL.4, AUGUST – SEPTEMBER; 2025

**JOURNAL OF
SCIENCE
EDUCATION AND
RESEARCH
(JSER), 4, AUGUST-
SEPTEMBER; 2025**

JOURNAL OF SCIENCE EDUCATION AND RESEARCH (JSER)
VOL.4, AUGUST – SEPTEMBER, 2025

© (JSER)

ISSN Online: 3092-9253

Published in August, 2025.

All right reserved

No part of this journal should be reproduced, stored in a retrieval system or transmitted in any form or by any means in whole or in part without the prior written approval of the copyright owner(s) except in the internet

Printed in Nigeria in the year 2025 by:



Love Isaac Consultancy Services (Publication Unit)

No 1 Etolue Street, Ifite Awka, Anambra State, Nigeria

+234-803-549-6787, +234-803-757-7391

EDITORIAL BOARD

Editor-in-Chief

Prof. Patrick C. Igbojinwaekwu

Editors

Dr. JohnBosco O.C. Okekeokosisi

Dr. Chris O. Obialor

Dr. Susan E. Umoru

Dr. Nkiru N.C. Samuel

Dr. Ahueansebhor, Emmanuel

Dr. Loveline B. Ekweogu

Dr. Odochi I. Njoku

Consulting Editors

Prof. Abdulhamid Auwal

Prof. Marcellinus C. Anaekwe

Dr. Peter I.I. Ikokwu

Federal University Kashere, Gombe State

National Open University of Nigeria

Nwafor Orizu College of Education

Nsugbe, Anambra State

EDITORIAL

Journal of Science Education and Research (JSER) is a peer-reviewed published Bimonthly. It aimed at advancing knowledge and professionalism in all aspects of educational research, including but not limited to innovations in science education, educational technology, guidance and counselling psychology, childhood studies and early years, curriculum studies, evaluation, vocational training, planning, policy, pedagogy, human kinetics, health education and so on. JSER publish different types of research outputs including monographs, field articles, brief notes, comments on published articles and book reviews.

We are grateful to the contributors and hope that our readers will enjoy reading these contributions.

Prof. Patrick C. Igbojinwaekwu

Editor-in-Chief

TABLE OF CONTENTS

Influence of Farmers Socio-Economic Variables on Adoption of Improved Cassava Varieties in Anambra State Obiora Charles Chukwuma (Ph.D), Uchegbu Festus Udoka, Ohanu Victor Chibueze	1
Effect of Jigsaw Cooperative Learning Strategy on Mathematics Achievement of Secondary School Students Otumegwu Tina Uchenna, (PhD), Ogoke Chinemeze James, Uguru Ndubuisi Okon, Achugamonu, Pius, C. , Anyanwu Anthony	12
Undergraduate Students’ Perception of the Influence of Team Teaching on their Interest in Biology Courses in Anambra State Nzeakor Onyinyechukwu Jennifer	26
Psychological Impact of Pregnancy on Health Status of Secondary Schools Female Teenagers in Calabar, Calabar, Nigeria Emmanuel Ahueansebhor, Egaga Musa Moses	41
Innovative Curriculum for Self-Reliance through Entrepreneurial Skills in The 21 st Century: A Panacea for Functional Biology Education in Taraba State Umoru, Susan Ene (Ph.D), Edache-Abah, Odachi.Felicia (Ph.D)	53
The Role of AI in Advancing Mathematics Education in Nigeria’s 21st Century Learning Environment Omokaro Blessing, Babundo Philip Ekene	63

**PSYCHOLOGICAL IMPACT OF PREGNANCY ON HEALTH STATUS OF
SECONDARY SCHOOLS FEMALE TEENAGERS IN CALABAR, CALABAR,
NIGERIA**

¹Emmanuel Ahueansebhor, ²Egaga Musa Moses

[¹emmanuelahueans@gmail.com](mailto:emmanuelahueans@gmail.com), [²egagam@yahoo.com](mailto:egagam@yahoo.com)

¹Department of Human kinetics and sports Science, ²Department of Special Education

¹Faculty of Science Education, ¹Faculty of Educational Studies,

^{1,2}University of Calabar , Cross-River State, Nigeria.

Abstract

The study aimed to investigate psychological impact of pregnancy on health status of secondary school female teenagers in Calabar South Local Government Area, Cross River. Two hypotheses were formulate to guide the study, while the survey research design was utilized. The population of the study comprised of eighty-eight (88) pregnant teenagers who visits the health facilities regularly with their various records and files in their health centers. Instrument for data collection was a structured questionnaire title “Psychological Impact of Pregnancy on Health Status Questionnaire (PIPHSQ). The instrument was face validated by three experts, two from Department of Human Kinetics and Sports Science and the other one from measurement and evaluation unit all in University of Calabar. The reliability of instrument was established using split-half method and Pr which yielded a correlation coefficient of 0.82. Data collected were analysed using Pearson Products Moment Correlation Analysis at .05 level of significance. Findings revealed that self-esteem and mental health have significant impact on health status of pregnant secondary school females in Calabar South Local Government Area. Based on the findings, it was recommended amongst others that, female teenagers in secondary school should be properly educated after the effects of early pregnancy, that it does lead to low self-esteem and that unprotected sexual – indulgement should be completely avoided.

Keywords: Psychological Impact, Pregnancy, Health Status

Introduction

One of the major reproductive health problem effecting our society today is teenage pregnancy. Teenage is a period of major biological, social, physiological and psychological changes/development. It is a time of opportunity during which a range of actions can be taken to set the stage for healthy adulthood (Glynn & Howland, 2018). Teenage pregnancy is generally referred to as pregnancy is girls who are between the ages of 13 – 17 years or under (Movisak & Zhang, 2016). Pregnancy in the early reproductive life in modern days has been viewed as violations of a right of a girl child due to possible physical emotional and social harm to the well-being of adolescence and its potential adverse consequences on her educational advancement. Teenage pregnancy is a worldwide phenomenon affecting both developed and developing countries (Ahueansebhor, Eyam, & Adie, 2024).

WHO (2018) documented that about 18 million girls aged 12 – 17 years give birth each year and two (2) million of these births are from girls under the age of 15 years. Also almost all adolescent – births (about 90%) occur in low – and middle income countries. According to Mansfield, Humphrey, Patalay, Moore and Stapley, 2021) about 19 million girls aged 15 – 19 years in the developing world become pregnant and give birth every year, respectively. In Africa, the overall pooled prevalence of teenage pregnancy was 18.8%, but Sub-Saharan African accounts for about 19.3% global teenage pregnancy rate. The WHO (2018) reported that, approximately 16 million girls of 15 years and 2.5 million girls under the age of 16 years gave birth in developing regions in 2018. Furthermore, the global adolescent birth rate has declined from 65 births per 1,000 women in 1990 to 47 births per 1,000 women in 2015. Despite this overall progress, the global population of adolescents pregnancies will increase globally by 2030. With the greatest proportional increases in West and Central Africa, Eastern and Southern Africa. Therefore, these statistic, show conducted with the aim of exploring the psychological impact of pregnancy on health status of female teenagers.

Self-Esteem and Health Status

Low self-esteem is an overall reflection on an individual self-worth. It encompasses belief about oneself as well as an emotional response to those beliefs. Representing the capacity to feel worthy of happiness or sad in other to successfully address life challenges (Wikipedia, 2015). Adolescent is the stage of growth and development of great relevance, it is a period that is characterized by biological changes but also by psychological, emotional, behavioural, physiological and social transformation, the

changes and the pressure exerted by peer group, as a result of teenage pregnancy give rise to low vulnerable risky behaviour such as corruption of tobacco, alcohol, and other drugs in order to suppress depressive factors and gain self-confidence (Odok, Ahueansebhor, Apie, Ogabor & Osaji, 2024).

Mora, Canciro, Hernandez and Valenia, (2015) noted that people with low self-esteem have challenging identities and are unstable and are openly vulnerable to criticism and rejection thus sustaining their perceived inadequacy, incompetency and lack of self-worth. But, self-esteem is the most prominent and evidence factor that increases the risk of teenage pregnancy among teenagers since it will lead to insecurity, fear of being rejected, low ambition or insufficient emotional control. By contrast, adolescence with high self-esteem tends to present greater knowledge of sexual education thus, preventing them from maintaining and engaging in risky sexual behaviours (Ahueansebhor, Emeribe & Odok, 2023).

According to Favier – Torres, Samon, and Rejiz (2018) suggest that a pregnant adolescent self-esteem heads for a toss. An adolescent will face cruel banter, which will make her stop going to school, hurt her, make her feel useless and out of place. In a study conducted by Fernandez-Arias and Marin, (2021) highlighted the fact that there was a pregnant girl in a given classroom that was found to be challenged not only by her performance academically, but it also affected the collective academic success of the class and its requisite harmony. Furthermore, many pregnant school girls are usually unable to follow up with the academic criteria of the school due to self-rejection as a result of low self-esteem.

Osok (2016) conducted a study on how self-esteem and the risk associated with teenage pregnancy. The author discovered that teenage girls who indulge in early sex are prone to low self-esteem as a result of rejection by family friends and the community. Akah, Emeribe and Ahueansebhor (2013) stated that stigma, abandonment and hostility from friends, parents and peers has psychological implications for pregnant teenagers, pregnant teenagers may be at a higher risk of low self-esteem and depression than non-pregnant teenagers. Many significant risks of teenage pregnancy birth outcome, repeat are associated with depressive symptoms, mental health issues and health status. WHO (2020) opined that upstream factors such as poverty, insufficient public policy and lower quality of life have led to poor health decisions among teenagers especially those staying in the rural settlement, the factors pose a great risk on the mental stability of teenagers especially those that are expectant mothers. A number of sexual and reproductive health outcomes can be traced back to teenagers who have prominent mental health outcomes.

and predisposes teenage girls to poor physical health outcome and adverse mental health consequences with stress and depression been the most common mental disorder.

Mental health issues such as stress and anxiety among teenagers who are pregnant poses a great impact on the infant and also associated negative outcome ranging from impaired physical health outcome and poor neurocognitive development (Kumar, Huwang & Ottriene, 2018). Odok, Ahueansebhor and Osaji, (2022) postulated that pregnancy is a time of emotional well-being of individuals or teenager. Teenage pregnancy can impact their mental health is a drastic way; which differs from older pregnancy experiences. It is estimated that 20% of pregnant people suffer from mood disorder or anxiety during pregnancy. However, researcher found out that teenagers ranging from 15 to 19 years experiences post-partum depression at a higher – rate twice than people of age 25 years and above. Understanding some of the emotional stages pregnant teenagers goes through is very important because it's help elevate the stress experience throughout the pregnancy. During the beginning stage of the pregnancy among teenagers they may tend to experience some mental health issues such as shock, stress, post-partum depression, fatigue, always feeling tired, moody, forgetful, disorganized, just wanting to eat even when not feeling hungry and feeling of sexual arousal (Gray, & Garcia, 2019).

Barron, Rubedar, Lotsoko, Marcus and Pillary (2022) asserted that the health and well-being of adolescents are very important in the society as it represent the future workforce and contributor to the potential economic productivity. Adolescent is a crucial period, and selected with multiple factors that affect mental health, while mental health has gain recognition as a significant public health concern, teenagers or adolescent who are pregnant are at higher risk of developing mental health issues or problem: during or after their pregnancy. The teenage era is a transitional stage that is characterized by biological, psychological and social changes: the pregnancy interface with normative developmental process and the dual biological transition and the pregnancy and physical vulnerability, Odok, Ahueansebhor, & Osaji, (2022). Ahueansebhor, Osaji, Ogabor, Apie and Odok (2024) stressed that the responsibility and demands of parenting by teenagers, lack of knowledge about child development and social support for the pregnant teenagers associated with high stress, depression and anxiety. This adversely affects the pregnancy and negatively influences the future relationship between the teenagers and their unborn child mental health problems, and adversely affect teenage mothers functioning, parenting behaviour and increase the risk of behavioural issues in their offspring.

Statement of the Problem

Teenage pregnancy is a huge phenomenon that is evident in the society, that has greatly affected majority of teenage girls significantly teenage pregnancy affects teenage girls in diversified ways, these include socially, emotionally, spiritually, economically, mentally and psychologically. It brings about the emotional instability to the pregnant teenage girls due to ill feelings that comes with being pregnant. This could be the result of the society disapproval among other reasons. Teenage pregnancy is one of the current major psychological concern in the society today, young girls are becoming sexually active early in life and this brings about its impact on their health status and on their overall well-being.

Teenage pregnancy has negatively affects school going children making most of them dropout from consequently, as a result of the overall impact of teenage pregnancy, teenage girls who are pregnant are deprive affection and care by their friends and the society which may lead to low self-esteem, depression and suicide as the case may be. However, most girls cannot exercise their right on insisting on the use of condom, or use of contraceptives due to fear of losing a partner and this may expose them to sexually transmitted disease (STD) and unwanted early pregnancy, which may be harmful to their health and well-being.

Purposes of the Study

The main purpose of this study was to examine the psychological impact of pregnancy on health status of secondary school female teenagers in Calabar South Local Government Area of Cross River State, Nigeria. Specifically, the study attempts to;

1. Ascertain how self – esteem relate with the health status of secondary school female teenagers in Calabar South Local Government Area.
2. Determine whether mental health issues relate with the health status of secondary school female teenagers in Calabar South Local Government Area.

Research Questions

The following research questions were raised to guide the study;

1. How does how self-esteem relates with the health status of secondary school female teenagers in Calabar South Local Government Area?
2. Does mental health issues relate with the health status of secondary school female teenagers in Calabar South Local Government Area?

Hypotheses

The following hypotheses were formulated to guide the study;

1. There is no significant relationship between self-esteem and health status of secondary school female teenagers Calabar South Local Government Area.
2. There is no significant relationship between mental health issues and health status of secondary school female teenagers in Calabar South Local Government Area.

Methodology

The research design utilized for this study is a survey research design. Survey research design is a method of descriptive research that is used for collecting primary data based on verbal or written communication with a representative sample of individuals or respondents from the target population. The population of the study comprises of five health care facilities which comprises of government and private health facilities, with files and records of (88) eighty eight pregnancy teenagers who visits the health facilities regularly. The sample size of the study was also eighty eight (88) respondents which was also the total population. The sampling technique utilized for the study was the census sampling technique. The instrument used for data collection was a 16 item questionnaire titled “Psychological Impact of Pregnancy on Health Status of Secondary School Female Teenagers Questionnaire” (PIPHSQ). The questionnaire was constructed on a four point modified Likert scale options of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Face validity of the instrument was done by two experts in Human Kinetic and Sports Science Education and one expert from Test Measurement and Evaluation Unit all in University of Calabar. The reliability of instrument was established using split-half method and r of 0.82. The statistical tool employed for the analyses of data was Pearson Product Moment Correlation Analysis at .05 level of significant.

Results

Research Question 1: How does self-esteem relates with the health status of secondary school female teenagers in Calabar South Local Government Area.

Table 1: Self-esteem and Health Status of Secondary School female Teenagers in Calabar South Local Government Area.

Variable	N	Mean	SD	Minimum	Maximum
Self-esteem	44	12.8	5.28	20	24
Health Status	44	14.2	5.26	18	26

The self-esteem score of 12.8 (SD=5.28) in Table 1 Suggests a moderately low level self-esteem among Secondary School female Teenagers. The Corresponding Health Status means of 14.2 (SD=5.26) show a moderate relationship of Health Status, possibly impacted by self-esteem. The pearson product Moment correlation analysis result of Cal-r-Value of .52 is greater than the p-value of 0.00 at .05 level of Significance with 42 degree of freedom. It confirms a Statistically Significant relationship.

Research Question 2: Does mental health Issues relate with the health Status of Secondary School female teenagers in Calabar South Local Government Area?

Table 2: Mental Health issues and Health Status of Secondary School female Teenagers in Calabar South Local Government Area

Variable	N	Mean	SD	Minimum	Maximum
Mental Health Issue	44	13.4	5.86	16	28
Health Status	44	12.8	4.64	14	30

The mean mental health Issues score 13.4 with SD = Standard deviation Score of 5.86 in Table 2 Suggests that there is a Significant relationship between mental health Issues and health Status of Secondary School female Teenagers. The corresponding Health Status means of 12.8 (SD=4.64) show a moderate developed relationship on the health status, possibly due to impact by mental health Issues. The pearson product-moment correlation analysis result of Cal-r-value of .48, p-value of 0.00 at .05 level of Significance with 42 df confirms a statistically Significant relationship.

H0₁: There is no significant relationship between self-esteem and health status of secondary school female teenagers in Calabar South Local Government Area, Cross River State.

Table 3: Pearson Product Moment Correlation analysis of relationship between self-esteem and health status of secondary school female teenagers in Calabar South Local Government Area

Variables	Σx	Σx^2	Σxy	Cal-r	P-value
	Σy	Σy^2			
Self-esteem	4662	19344			
			212622	*.52	0.000
Health status	4124	17342			

*significant at .05 level, df = 86

As presented in Table 3, the result obtained from analysis of data indicated that the calculated r-value of .52 is greater than the P-value of 0.000 at .05 level of significance with 86 degree of freedom. This implies that the null hypothesis accepted. Therefore, there is a significant relationship between self-esteem and health status of secondary school female teenagers in Calabar South Local Government Area of Cross River State.

H0₂: There is no significant relationship between mental health issues and health status of secondary school female teenagers in Calabar South Local Government Area, Cross River State.

Table 4: Pearson Product Moment Correlation Analysis of the relationship between mental health issues and health status of secondary school female teenagers in Calabar South Local Government Area

Variables	Σx	Σx^2	Σxy	Cal-r	P-value
	Σy	Σy^2			
Mental health issues	4120	17360			
			201324	*.48	0.000
Health status	3816	16634			

*significance at .05, df = 86

Table 4 points at the calculated r-value of .48 is greater than the P-value of 0.000 at .05 level of significance, with 86 degree of freedom. This implies that the null hypothesis is rejected and the alternate hypothesis accepted. This therefore means that there is a

significant relationship between mental health issues and health status of secondary school female teenagers in Calabar South Local Government Area of Cross River State.

Discussion

The finding obtained from analysis of data and testing of hypothesis one in the study. The implication of this finding is that there was a significant relationship between self-esteem and health status of secondary school female teenagers in Calabar South Local Government Area, Cross River State. The reason for this finding could be that female teenagers that are still in secondary do indulge in sexual practices without protection due to probably lack of awareness on the consequences of getting involved in early sexual without protection, this usually lead to unwanted pregnancy which will definitely lead to low-self-esteem because of probable seclusion and rejection from friends and family members.

The finding of this study is in agreement with that of Mora et al (2015) who noted that people with low self-esteem have challenging, identities and unstable and are openly vulnerable to criticism and rejection thus, sustaining their perceived inadequacy, incompetency, and lack of self-worth. But, self-esteem is the most prominent and evident factor that increase the risk of teenage pregnancy among teenagers. Since it will lead to insecurity, fear of being rejects, low ambition or insufficient emotional control. By contrast, adolescence with high self-esteem tend to present greater knowledge of sexual education thus, preventing them from maintaining and engaging in risky sexual behaviour.

The finding of this study is also supported that of Odok (2016) who conducted a study on low self-esteem and the risk associates with teenage pregnancy. The author discovered that teenage girls who indulge in early sex are prone to low self-esteem as a result of rejection by family, friends and community.

The findings obtained from analysis of data and testing of hypotheses two in the study revealed that the null hypothesis was rejected. The implication of this finding is that there was a significant relationship between mental health issues and health status of secondary school female teenagers in Calabar South Local Government Area, Cross River State. The finding of this study could be attributed to the fact that the secondary school female teenagers are supposed to be properly guided and educated on sex and sexuality issues, the female teenagers are supported to be properly enlightened at home by parents and elders, in schools by teachers. In that they can to a high extent avoid the consequences of early unprotected sex which is always unwanted pregnancies. The

stress they undergo at this very crucial period usually lead to mental health issues at most cases.

The finding of this study is in agreement with that of WHO (2020) who opined that upstream factors such as poverty, insufficient public policy and lower quality of life have led to poor health decision among teenagers especially those staying in the rural settlement the factors poses a great risks on the mental stability of teenagers especially those that are expectant mothers. A number of sexual and reproductive health outcomes in true back to teenagers who have prominent mental health outcome and predisposes teenage girls to poor physical health outcomes and adverse mental health consequences with stress and depression been the most common mental disorder. Mental health issues such as stress and anxiety among teenagers who are pregnant poses a great impact on the infant and also associated negative outcome ranging from impaired physical health outcome and poor neurocognitive development (Kumar, Huang & Othiene, 2018).

Conclusion

Based on the findings, the following conclusion are drawn. The early involvement in sexual activities by teenagers should be completely avoided because of its huge consequences on the, female teenagers when they engage in unprotected sex from time to time. It can lead to an unplanned pregnancy, this will make them to be expelled from schooling, and people whether family and friends will tend to abandon them and this will in turn resort to low-self-esteem. The female teenagers in secondary schools must be counselled on a regular bases, so as to avoid the mistakes of early pregnancy.

Recommendations

The following recommendations are made sequel to the findings from the study;

1. The female teenagers in secondary schools should be properly educated about the after effect of early pregnancy and that it does lead to low self-esteem and that unprotected sexual indulgence should be completely avoided.
2. School councellors should provide regular assistance to female teenage students with low self-esteem in order to prevent teenage pregnancy and help them live a healthy.
3. Reproductive health educators should regularly engage female teenagers in secondary schools in pep-talk that will help them prevent premarital sex and unplanned pregnancies, in order to avoid/reduce the incidence of mental health issues among pregnant female teenagers in secondary schools.

References

- Ahueansebhor, E., Emeribe, V. C. & Odok, E. (2023). Sports for gender quality and women empowerment. *Journal of Sports Psychology Association of Nigeria*, 16, 52 – 59.
- Ahueansebhor, E., Eyam, D. E & Adie, B. U. (2024). Impact of psycho-social well-being on sports and recreational activities of human kinetics and health education students in University of Calabar Cross River State Nigeria, *Journal of Contemporary Research (JOCRES)*, 3(4); 107 – 115.
- Ahueansebhor, E., Osaji, N. N., Ogabor, J. O., Apie, M. A. & Odok, E. A. (2024). Influence of depression and anxiety on sports participation among secondary schools athletes in Calabar South Local Government Are, Cross River State. *Farfaru Journal of Multi-Disciplinary studies* 14(1); 14 – 19.
- Akah, L. U., Emeribe, V. C. & Ahueansebhor, E. (2013). Stigmatization as correlate of disposition in utilization of HIV/AIDS services among students in tertiary institution in Calabar Metropolis. *Global Journal of Educational Research*, 12(1); 31 – 33.
- Barron, P., Subedar, H., Letsoko, M., Makus, M., & Pillay, T. (2022). Teenage births and pregnancies in South Africa, 2117 – 2021. A reflection of a troubled country: Analysis of public sector data. *South African Medical Journal*, 112(4); 252 – 258.
- Favier-Torres, M. A., Samon-Leyra, M. Ruiz-Faran, T, (2018). Factors de negos T. Consecuencias, del embrazo en la adolescencia (factors of risk consequences of pregnancy in adolescence), *Revisa de in formacion centificia*, 97: 205 – 214.
- Fernadez-Areas, M. J. & Marin-Saabria, V. (2021). La educacion para la salad en la adolescencia temprana para afrontar cos cambios fisicos T. emocionales (Education for health in early adolescence to face the physical and emotional changes).
- Glynn, L. M., & Howland, M. A. (2018). Prenatal maternal mood predicts child temperament and adolescent mental health, *Journal of Affective Disorder*, 228; 83 – 90.
- Gray, P. B. & Garcia, J. R. (2019). Age – related patterns in sexual behaviours and attitudes among singles. U. S. Adults: An evolution any approach, *Evolutionary Behavioural Sciences*, 13(1); 111 – 126.

- Kumar, M., Huang, K. T., Othieno, C. (2018). Adolescence pregnancy and challenges in the Kenyan context: perceptive from multiple community stakeholders. *Global Social Welfare*, 5(1): 11 – 21. <https://doi.org/10.1007/s400609-017-0102-7>.
- Mansfield, R., Humphrey, N., Patalay, P., Mood, A. & Stapley, E. (2021), adaptation of a school-based mental health literacy curriculum: from Canadian to English classroom. *Global Mental Health*, 8, <https://doi.org/10.1017/gmh>.
- Mora-Cancino, A. M. & Heinandez-Valencia, M. (2015). Embarazo en la adolescencia (Teenage pregnancy) *Cinecology Obstetricia de mexico* 83; 294 – 301.
- Morisak, T. & Zhang, L. (2016). Sexual attitude's and behaviours in adolescence: A pioneer study in Portugal in private schools. *Acta Paediatrica Portuguesa*, 48: 295-303.
- Odok, E. A., Ahueansebhor, E. & Osaji, N. N. (2022). Predictors of pregnant women participating in physical exercises in Boki Local Government Area, Cross River State, Nigeria. *International Journal of Vocational Education*, 12(1); 50 – 58.
- Odok, E. A., Ahueansebhor, E., Apie, M. A., Ogabor, J. O., Osaji, N. N. & Shantala, S. A. (2024). Personal characteristics and sports participation among secondary school students in Obudu Local Government Area of Cross River State, Nigeria. *Farfarms Journal of Multi-Disciplinary Studies*, 14(1); 1 – 8.
- Osok, L. (2016). Teacher's attitude towards teaching of sexuality education in federal government colleges in Nigeria: Implications for counseling. *Higher Education Studies*, 8(4); 162 – 167, <http://doi.org/10.5539/les.v8n4p162>,
- Wikipedia (2015). Self-esteem. Retrieved from <https://en.wikipedia.org/wiki/self-esteem> cite ref-8.
- World Health Organization (2016). Adolescent development. Retrieved December 18, 2020, from <https://www.who.int/maternalchildadolescent/de/es>.
- World Health Organization (2018). Guidance on ethical considerations in planning and reviewing research studies on sexual and reproductive health in adolescents. Retrieved from: <http://www.who.int/reproductivehealth/publication/adolescence/ethicalconsideration-research-in-adolescents/en/>.