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MATERNAL EDUCATIONAL ATTAINMENT FACTOR ON ACADEMIC ACHIEVEMENTS OF IN-SCHOOL ADOLESCENTS IN ANAMBRA STATE, NIGERIA

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Abstract

This study was embarked upon to determine the influence of maternal educational attainment levels on the academic achievements of in-school adolescents in secondary schools in Anambra state, Nigeria. It utilized the ex-post facto research design. Three research questions and four null hypotheses guided the study. The sample size was 900 students (450 males and 450 females) selected using multistage sampling technique. Students' academic achievements were determined from their first term English Language and Mathematics examination scores. The research questions were answered using the mean while the null hypotheses were tested at 0.05 level of significance, using ANOVA. The major finding from the study was that the mean academic achievement scores of adolescents differed significantly according to their mothers' educational attainment levels. Following the findings, it was concluded that maternal educational attainments significantly influence the academic achievements of adolescents in Anambra State, Nigeria. It was then recommended that teachers should employ individualized instructional strategies in classroom so that adolescents' unique challenges which perhaps emanate from low maternal monitoring and academic support could be addressed. Government and Non-Governmental Organization (NGOs) should also make efforts to give special assistance to mothers so as to enable them engage in adult education programmes. The knowledge and skills acquired through such programmes will equip them to assist their children in their educational pursuits and overall life endeavours.

Keywords: Maternal Educational Attainment, Academic Achievement, In-school Adolescents, Secondary Education, Anambra State.

Introduction

In Nigeria, the national educational goals include: inculcating national consciousness and unity as well as the right types of values and attitudes for the survival of the individual and Nigerian society; training the mind in the understanding of the world around and all the acquisition of appropriate skills to contribute to the development, not only for the individual but also for the society as a whole. Following these, one can be said to be educated, if he/she is found worthy in character and in learning, capable of upholding the norms and values of the society and impacting meaningfully and positively, to the lives of others and by so doing, contributing to making the environment a better and more pleasant place of existence for all. This agrees with UNICEF (2019) which asserts that education reduces poverty, drives sustainable economic growth, prevents inequality and injustice, leads to better health, particularly for women and children, and also helps to protect the planet. UNICEF goes further to say that education empowers children and adolescents. Peter in Okudo (2012) opined that education implies the transmission of what is worthwhile to those who become committed to it. He goes further to define an educated man as one whose form of life as exhibited in the conduct to activities he is committed, his judgment and his feelings, are desirable.

Education can be informal or formal. While the informal type entails the experiences acquired away from the auspices of a school; the formal is the type where the experiences are acquired within the formal school setting. In the education system of the school setting, educational attainment is certified through the acquisition of certificates. In the Nigerian setting, just as in many other countries of the world, education goes through the levels of pre-primary, primary, secondary and tertiary.

Every child, irrespective of gender, colour or culture, needs and is entitled to quality education, and the right to quality education includes the right to guided experiences that build self-esteem, develop decision-making skills and teach children how to respond to conflict in non-violent ways (UNICEF, 2010). Notwithstanding the importance of education to every child, formal education in the Nigerian society was virtually a preserve of the male children in the past while women were left to play the traditional roles of home-keeping which includes: cooking, taking care of the house and keeping it neat with little or no formal education at all. One major factor found to be responsible for this gender discrimination was the patriarchal belief that only sons inherit and carry on the family name (Agulanna, 2014).

However, and quite fortunately, there has been a paradigm shift and the attitude of the society to the education of the women has changed, and women can be found in all fields of profession, at all levels of academics and in all areas of life. Today in Nigeria and especially Anambra State, many women have attained high educational status, some averagely while some achieved the basic academic levels such as First School Leaving Certificate.

A popular Chinese adage states that he who trains a woman, trains a nation. The benefits that accrue from the education of women had made researchers like Sullerot and Taylor in Nwikpo (2016) to note thus:

> To educate the masses of illiterate women is not philanthropy undertaken in a spirit of egalitarian idealism or as a democratic crusade but rather a vital need

> in the modern world, a question of life and death for many, and for all, a choice between stagnation and progress.

Given the fact that life begins from the home (Baferani, 2015); where the mother's position has been found to be very pivotal (Nwikpo, 2016), empowering a mother through the instrumentality of education in order to function and be relevant to herself and the family/society, is a choice for progress to the next generation. To churn out well-adjusted children and adolescents to promote the desired virtues of good citizenship requires that the task of parenting be done assiduously with all necessary support system put in place. This is because nobody gives what he does not possess. Consequently, it is pertinent to always consider issues that could empower or hinder mothers from carrying out their all-important parenting roles. According to Jackson, Kiernan, and McLanahan (2017), one of the issues is maternal education. Jackson, Kiernan, and McLanahan asserted that maternal education, among other core dimensions of socioeconomic status, is the most strongly associated with children's cognitive development, and is a key predictor of other resources within the family that strongly predict children's well-being: economic insecurity, family structure, and maternal depression. Like other individuals who need education to function, mothers also require it to maximize their full potential and position them for optimum productivity.

Maternal education is generally defined as the number of years of schooling a mother has completed or the highest educational degree or certificate a mother has achieved (U.S Census Bureau, 2004). Magnuson cited in Nwikpo (2016) also defined maternal education as mother's attainment as accredited in public examinations and national tests. Educational levels of mothers can be appraised using the conventional standard of education attainment. This conventional standard of education varies from non-formal educational attainment to certificates, diplomas, degrees and doctoral awards in various disciplines.

Maternal education is expected to positively impact on children's academic pursuits and general development. This is because, as the mother's background and experiences, cognitions, beliefs and values are touched positively via education, the maternal education will in turn very likely and positively, affects a mother's ability to nurture her children's school interest. It is also capable of equipping them with the wherewithal to introduce these children to popular culture and discipline them according to societal norms. Studies have shown that mothers with higher levels of education value education more and have higher expectations of their children's achievement and adjustment than other mothers (Okeke, Nwikpo & Anierobi, 2019). Some others examined maternal education variable on their children's well-being, and looked more at its impact on health outcomes (Vikram & Vanneman, 2020); maternal Education and other changing family circumstances on children's skill development (Margot Jackson, Kathleen Kiernan, and Sara McLanahan, 2017). Sara R, Vicente M, Ana T, Sergio N, Alicia S, & Mairena S, (2021) examined the relationship between maternal education and academic achievement in schoolchildren, but as mediated by cardiorespiratory. Sara et al studied specifically to determine whether the association between maternal education and academic achievement is mediated by cardiorespiratory fitness. They found out that higher level of maternal education was associated with higher cardiorespiratory fitness level and academic achievement in children; and moreover, that cardiorespiratory fitness level in children was associated with better academic achievement.

Conversely, some researchers did not specify which of the parents' educational attainment impacts more positively on children's academic outcomes. They found no higher relationship existing between children's school adjustment and maternal education than they did between that of the fathers' and the children's school adjustments and outcomes. For example, Sudhir and Lalhirimi (1998) had earlier established that the most important family characteristic influencing students' achievement and adjustment is parents' education. They hold that the exposure education affords parents, in turn, boosts the quality and influence of the other factors that enhance the process of socialization. Also, Fayyaz and Muhammad (2011) while comparing the educated and the uneducated parents elaborated that parental education is an index of class status and personality characteristics of children. They found that children of educated parents have a high level of satisfaction and fewer problems than children of less educated parents or totally uneducated parents. In the same vein, Dibia (2014) maintained that such relationship exists between parenting styles and adolescent child's self-concept, socio-emotional stability and adjustment at school while Li, Roslan, Abdullah and Abdullah (2015) concluded that a child who has any of the parents keeping track of his or her activities and experiences would be better adjusted than another child with similar characteristics but with none of the parents doing likewise.

However, in the light of mothers being the most caregivers to the children because of the bonding that existed from conception and remaining the closest and the most available to them through adolescence, one can reasonably infer that they contribute more to the children's socialization process. For the fact that mothers are the closest to their children, adolescents' education is likely to be influenced by their mothers' educational attainment than that of their fathers. Johnson (2013) in agreement with Hong & Lee (2010) and Marks (2010), noted that because men have stronger attachment to the labour market, striving to fulfill all the economic and other needs of the family, the mother has a greater role in children's socialization.

As Johnson's (2013: 52) puts it:

> "Men want to provide for their families, they want to appear successful in their community, they are concerned with competition for jobs, and they seek high profits…. Men are supposed to make more money than women, women are supposed to care for children."

Marks went further to say that the impact of mother's education is greater than the father's education on the overall performance of their children. Going by the above, one may likely conclude that the more educated women are, the better the academic achievement and adjustment of their children. A child who is well adjusted can also be expected to achieve, averagely at least, in the endeavours he/she sets out to pursue. At this level of development, that is, adolescence, the most outstanding pursuit involving the adolescents is academic.

Academic achievement of adolescents, therefore, was the area of interest for these present researchers. In this investigation, academic achievement is operationally defined as adolescents' achievement on measures of English language and Mathematics. One of the factors that may be considered germane to the academic achievement of the adolescents is mother's education, an important determinant of the quality of the child's adjustment.

The higher the educational level of the mother is, the more it is expected, she will be able to engage her children in more learning-related activities both in the home (e.g. reading books, technological devices) and out of the home (extra lessons). Magnus cited in Okeke, Nwikpo and Anierobi (2019) holds that mothers with higher levels of education typically create enriching language and literacy environment by exposing children to complex language and vocabulary, bringing books and print materials into their homes, engaging children in learning activities such as reading and seeking out structured learning opportunities. Miller and Dilworth-Barth (2014) linked mother's educational expectation and opportunities for children to engage in learning activities, to children's cognitive development and their academic skills. However, much as it is expectedly likely that maternal education may influence children's development by creating positive changes in children's niches, yet, the extent to which these environments of theirs, particularly mother's parenting, change as a result of these mothers' higher education may depend on their ability to successfully combine their care-giving and work roles.

Mothers who are more credentialed are likely to engage in secular jobs with some, being too demanding (banking, media and many more), either to get fulfillment as career women or to assist their husbands in the bread-winning role to better the family financially. With this, such educated mothers face competing roles, which may elevate their levels of stress and reduce the time they spend at home. If, therefore, engaging in long hours in "office" work increases mother's distress, then additional education may not result in improved mother-child interactions or higher-quality learning environments, capable of positively impacting children's academic achievement.

As a result of work engagement at the office, the educated mothers may be less available to care for their children, which may increase the use of non-maternal child care and change of family routines. These adolescent children who need good and quality time with parents particularly their mothers, for proper direction and all-round development, are left at the mercy of the house-maids, nannies and other relatives who may turn out to be evil influences on them. These adolescents may begin to "celebrate" the long hours of absence of their educated-working mothers by engaging in unwholesome activities made possible for them by social media networks such as facebook, twitter, instagram and whatsApp, watching movies and playing games thereby paying little or no attention to their studies. Some of these high-credentialed mothers are too occupied to also visit their children's schools for a parent-teacher interaction to discover who really their wards are in school. Even when the children's teacher seeks their attention on such issues concerning their wards, their work will afford them no chance. Following the above, would it be proper to draw a conclusion, without fear of contradiction and without carrying out a careful study, that attainment of high formal education by women automatically guarantees better adjustment and high academic achievement or otherwise of their adolescent children? The need to answer this question empirically forms the motivation for this work. It, therefore, was against this background that the present researchers were interested in investigating the influence of maternal educational attainments on the academic achievements of adolescents.

Statement of the Problem

The adolescents of today are the adults of tomorrow. They are the future workforce of any society. This explains the desire of every society to have adolescents, who are well-adjusted academically and otherwise, to promote the desired virtues of good citizenship. Unfortunately, this seems yet, far-fetched as available indices on the performances of Nigerian secondary Schools project a very disturbing picture of the system (Onyekwena, Ngwoke, Umeano & Ugwuanyi, 2019).

It is quite worrisome to note that poor performance in academic task and low task persistence among secondary school adolescents in Anambra state and the entire South-East of Nigeria seem to be on the increase as evidenced in the academic records of examination bodies like WAEC and JAMB/UTME (National Bureau of Statistics, 2019). This is understood because a house does not fall, leaving its rafters standing.

The level of the manifestation of academic underachievement of adolescents has become very disturbing to these researchers and other stakeholders (educational psychologists, counsellors, parents and teachers etc), than for any other groups. What would have made these adolescents to .3keep failing in this regard? Some researchers such as Agommuoh (2013), Chau, Causin-Brice, Delacour, Richoux-Picard, Verdi, Armand, & Chau (2016), Ochuko (2018), and Ogu, Ikechukwu and Ringim (2019), have empirically sought to answer this pertinent question of why adolescents have a hard time adjusting academically. They had looked at the adolescents themselves, school and its environmental factors, the facilitators of knowledge (teachers), family etc with some laudable recommendations made, yet, the problem remains unsolved.

It thus necessitates looking beyond the school and the students into their family background factors especially the variable of mother's educational attainment level and the possible influence it may have on these students' academic wellbeing, hence, the fundamental problem of this study was to determine influence of mother's educational attainments on the academic achievement of the adolescents.

Research questions

The following research questions were formulated to guide the study.

1. What are the mean academic achievement scores of adolescents whose mothers have different levels of educational attainment?
2. What are the mean achievement scores of male adolescents whose mothers have different levels of educational attainments?
3. What are the mean achievement scores of female adolescents whose mothers have different levels of educational attainments?

Hypotheses

The following null hypotheses were formulated to guide this study and tested at 0.05 probability level:

1. There is no significant difference in the mean achievement scores of adolescents as a result of their mothers' educational attainment levels.

2. The mean achievement scores of male adolescents do not differ significantly as a result of their mothers' educational attainment levels.
3. The mean achievement scores of female adolescents do not differ significantly as a result of their mothers' education attainment levels.
4. Male and female adolescents' academic achievement scores do not differ significantly as a result of their mothers' educational attainment levels.

Method

The study utilized ex-post facto research design. Ex-post facto design seeks to find out the factors that are associated with certain occurrences, outcomes, or analysis of past events. As Nworgu (2015) puts it, the researcher only attempts to link some already existing effects or observation to some variable(s) as causative agent(s). Therefore, the design was considered appropriate for this study which chose a sample of adolescents from a population of SS 2 students in Anambra State, to investigate the influence of independent variable, that is, maternal education, on the dependent variable, which is academic achievement of these adolescents. The ex-post facto design was used because the researchers had no control over the factors or variables as she could not manipulate them, because they already existed and could not be changed.

The study was carried out in Anambra State of Nigeria in the South East geographical zone of Nigeria. Anambra State has a teaming population of male and female adolescents in different levels of post-primary educational institutions. Anambra State citizens hold high value for education which explains the high literacy rate found in the state, even among women. The population of the study comprised all the adolescent SS 2 students in Anambra State under the management of the Post-Primary School Services Commission (PPSSC). The sample size for the study comprised 900 adolescents, made up of 450 males and 450 females. Multi-stage random sampling technique was used to obtain the sample. This was done by first, sampling the education zones, then schools and finally students used for the study.

To obtain the education zones used for the study, the researchers used simple balloting technique. Three out of the six education zones in the state were selected. These were Awka, Onitsha and Nnewi zones. Each of these selected zones was stratified based on type of schools namely: co-educational and single–sex schools. Only students from co-educational schools were used as the researchers needed students exposed to similar setting and/or environment of learning.

The second major step was the selection of number of schools to be used for the study. The simple random sampling was used in selecting 10 co-educational schools from each of the 3 zones, bringing the number of schools used to 30. In each co-educational school, the SS2 students were stratified according to gender, after which 15 males and 15 females were obtained through simple random sampling. This, therefore, gave a total sample of 900 students.

No instrument was needed to determine the academic achievement scores because the data were already available. It was the result of the first term examination of the SS 2 students for 2017/2018 session as contained in the schools' academic performance records. The study only

considered mean performance in Mathematics and English language to ascertain how the students fared academically. The choice of these two subjects was due to the following reasons:

- English language and Mathematics are compulsory subjects for all students, sitting for both the Junior School Certificate Examination (JSCE) and Senior School Certificate Examinations (SSCE);
- A credit pass in both subjects at the SSCE is a prerequisite for a student to pursue higher education both within Nigeria and other West African Countries.

Data obtained in the study were analyzed in line with research questions and hypotheses using appropriate statistical measures.

Research questions were answered using mean while the analysis of variance (ANOVA) was used to test the hypotheses. The appropriateness in using ANOVA for the analysis of these hypotheses hinged on the fact that the researchers needed to analyze the differences between the mean scores of more than two independent samples.
To detect where the differences lay, Bonferroni post hoc test was performed. All the hypotheses were tested at 0.05 level of significance. The average score of the English Language and Mathematics results were used for the analysis.

Results
What are the mean achievement scores of adolescents whose mothers have different levels of educational attainment?

Table 1: *Adolescents' Achievement Mean Scores Across the Mothers' Educational Attainment Levels.*

Variable	Mothers' educational attainment levels	N	$\bar{x}$	SD
Students achievement score	Highly educated mothers	371	67.83	11.53
	Averagely educated mothers	264	61.48	10.98
	Lowly educated mothers	265	51.43	13.81

The mean scores as shown in the table 1 show the achievement scores for the adolescents based on their mothers' educational attainment levels. The table further reveals that the mean scores vary across the grouping of the students across their maternal education levels. The group with the highest mean score is found to be those whose mothers are highly educated with mean score of 67.83. The table also indicates that the mean scores of the adolescents from averagely educated mothers is 61.48. The lowest mean achievement score ($\bar{x}$ = 51.43) is that of the adolescents whose mothers' educational certification does not go beyond Senior Secondary School Certificates or Primary School Leaving Certificates.

Research Question 2
What are the mean achievement scores of male adolescents whose mothers have different levels of educational attainment?

Table 2: *Male Adolescents' Mean Achievement Scores across the Mothers' Educational Attainment Levels.*

Variable	Mothers' educational attainment levels	N	$\bar{x}$	SD
Students' achievement score	Highly educated mothers	184	67.01	11.65
	Averagely educated mothers	151	62.74	11.71
	Lowly educated mothers	115	51.47	14.53

The table 2 reveals that the students whose mothers are highly educated have the highest mean achievement score of 67.01 while the adolescents with the lowest mean are those whose mothers are lowly educated ($\bar{x}$ = 51.47).

Research Question 3

What are the mean achievement scores of female adolescents whose mothers have different levels of educational attainment?

Table 3: *Female Adolescents' Mean Achievement Scores across the Mothers' Educational Attainment Level*

Variable	Mothers' educational attainment levels	N	$\bar{x}$	SD
Students' achievement score	Highly educated mothers	187	68.63	11.38
	Averagely educated mothers	113	59.81	9.71
	Lowly educated mothers	150	51.40	13.29

The table 3 reveals that the female students whose mothers are highly educated have the highest mean achievement score ($\bar{x}$ = 68.63) while the female adolescents with the lowest mean are those whose mothers are lowly educated ($\bar{x}$ = 51.40).

Hypothesis one

There is no significant difference in the mean achievement scores of adolescents as a result of their mothers' educational attainment levels.

Table 4: *One-way analysis of variance (ANOVA) of the difference in students' achievement scores based on mothers' educational level.*

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	41588.023	2	20794.011	142.079	.000
Within groups	131280.727	897	146.355		
Total	172868.750	899			

Table 4 reveals that there is a significant difference in the achievement scores of the adolescents based on their mothers' educational attainment levels ($F_{(2,897)}$ = 142.08, p< 0.05). Thus, the null hypothesis is rejected.

Table 5: *Multiple comparisons showing the direction of differences of the adolescents' academic scores*

(I)Mothers attainment level	(J)Mothers attainment level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Highly educated mothers	Averagely educated mothers	**6.34454***	.97410	.00	4.0082	8.6809
	Lowly educated mothers	**16.39353***	.97302	.000	14.0598	18.7273
Averagely educated mothers	Highly educated mothers	**-6.34454***	.97410	.000	-8.6809	-4.0082
	Lowly educated mothers	**10.04899***	1.05198	.000	7.5258	12.5721
Lowly educated mothers	Highly educated mothers	**-16.39353***	.97302	.000	-18.727	-14.060
	Averagely educated mothers	**-10.04899***	1.05198	.000	-12.572	-7.5258

*. The mean difference is significant at the 0.05 level.

The result reveals that there is a significant difference between each pair of groups. This means that children from highly educated mothers have significantly higher achievement scores than those from averagely educated mothers, those from averagely educated mothers have higher achievement scores than those from lowly educated and finally those from highly educated, of course, have significantly higher achievement scores than those from lowly educated mothers.

Hypothesis Two

The achievement scores of male adolescents do not differ significantly as a result of their mothers' educational attainment levels.

Table 6: *One-way analysis of variance (ANOVA) of the difference in male adolescents' achievement scores based on mothers' educational level*

	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	17369.159	2	8684.580	55.869	.000
Within groups	69483.577	447	155.444		
Total	86852.736	449			

Table 6 reveals that there is a significant difference in the achievement scores of the male student based on their mothers' educational attainment levels ($F_{(2,447)} = 55.87$, $p < 0.05$). Thus, the null hypothesis is rejected.

Table 7: *Multiple comparisons showing the direction of differences of the male adolescents' achievement scores*

(I)Mothers attainment level	(J)Mothers attainment level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Highly educated mothers	Averagely educated mothers	**4.26974***	1.3690	.06	.9799	7.5595
	Lowly educated mothers	**15.53424***	1.4821	.00	11.9728	19.09
Averagely educated mothers	Highly educated mothers	**-4.26974***	1.3690	.06	-7.5595	-.9799
	Lowly educated mothers	**11.26450***	1.5431	.00	7.5564	14.973
Lowly educated mothers	Highly educated mothers	**-15.53424***	1.4821	.00	-19.0958	-11.973
	Averagely educated mothers	**-11.26450***	1.5431	.00	-14.9726	-7.5564

*. The mean difference is significant at the 0.05 level.

The result reveals that male adolescents from highly educated mothers have significantly higher achievement scores and they are followed by those whose mothers are averagely educated and lastly the adolescents with lowly educated mothers. Significant differences were observed in the achievement scores of students across the different levels of mothers' educational attainment.

Hypothesis Three

The mean achievement scores of female adolescents do not differ significantly as a result of their mothers' education attainment levels.

Table 8: *One-way analysis of variance (ANOVA) of the difference in female students' achievement scores based on mothers' educational level*

	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	24824.757	2	12412.379	90.963	.000
Within groups	60995.723	447	136.456		
Total	85820.480	449			

Table 8 reveals that there is a significant difference in the achievement scores of the students based on their mothers' educational attainment levels ($F_{(2,447)} = 90.963$, $p < 0.05$). Thus, the null hypothesis is rejected.

Table 9: *Multiple comparisons showing the direction of differences of the female adolescents' achievement scores*

(I)Mothers attainment level	(J)Mothers attainment Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Highly educated mothers	Averagely educated mothers	**6.34454***	.97410	.000	4.0082	8.6809
	Lowly educated mothers	**16.39353***	.97302	.000	14.060	18.727
Averagely educated mothers	Highly educated mothers	**-6.34454***	.97410	.000	-8.6809	-4.0082
	Lowly educated mothers	**10.04899***	1.05198	.000	7.5258	12.5721
Lowly educated mothers	Highly educated mothers	**-16.39353***	.97302	.000	-18.727	-14.060
	Averagely educated mothers	**-10.04899***	1.05198	.000	-12.572	-7.5258

*. The mean difference is significant at the 0.05 level.

The results reveal that female adolescents from highly educated mothers have significantly higher achievement scores, followed by those whose mothers are averagely educated and lastly the adolescents with lowly educated mothers. Significant differences were observed in the achievement scores of female students across the different levels of mothers' educational attainment.

Hypothesis Four

Male and female adolescents' academic achievement will not differ significantly as a result of their mothers' educational attainment levels

Table 9: *Tests of Between-Subjects Effects in relation to gender and mothers' educational attainment on adolescents' academic achievement*

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	42389.450[a]	5	8477.890	58.088	.000	.245
Intercept	3132543.795	1	3132543.795	21463.130	.000	.960
MODASEDULVL	41068.545	2	20534.273	140.70	.000	.239
GENDER	45.637	1	45.637	.313	.576	.000
MODASEDULVL * GENDER	792.957	2	396.479	2.717	.067	.006
Error	130479.300	894	145.950			
Total	3537097.250	900				
Corrected Total	172868.750	899				

a. R Squared = .245 (Adjusted R Squared = .241)

The main effect of the mothers' educational attainment in adolescents made significant difference on the achievement score of the adolescents. ($F_{(2, 894)} = 140.69$, $p < 0.05$, partial $\eta^2 = 0.24$). However, there was no significant main effect of gender with respect to the achievement score of the adolescents. ($F_{(1, 894)} = 0.313$, $p > 0.05$, partial $\eta^2 = 0.000$). Furthermore, there was no significant interaction effect between the factor of mothers' educational level and gender of the adolescents based on their achievement.

Discussion of Findings

The statistical analysis of the study revealed the achievement scores of the adolescents based on their mothers' educational attainment levels and revealed that the mean scores varied across the grouping of the students across their maternal educational attainment levels. The group with the highest mean score was found to be those whose mothers were highly educated. The mean achievement scores of the adolescents were hierarchical in nature with the children of highly educated mothers having the highest mean achievement scores and those of the lowly educated mothers having the lowest. This is in agreement with Sara R, Vicente M, Ana T, Sergio N, Alicia S, & Mairena S (2021) that higher level of maternal education was associated with higher cardiorespiratory fitness level and academic achievement in children.

This study revealed that there was significant difference in the mean achievement scores of adolescents based on their mother's educational attainment levels. This could be attributed to the reason that the scores of adolescents from mothers of high educational attainment level are higher than the adolescents with mothers of average educational attainment level. This agrees with Vagi (2008) who examined the effects of specific SES variables (household income, maternal education, paternal education, maternal occupation, and paternal occupation) and home social capital variables (parental involvement, parental expectations, family type, number of siblings, maternal employment prior to kindergarten and changes in the home) on the reading and mathematics achievement of children in kindergarten through the fifth grade, found a strong relationship between mothers' education and their children's reading and mathematics achievement. Also the work agrees with that of Carneiro, Meghir and Parey (2013), which revealed that additional years of mothers' education was positively related to African American children's mathematics and reading achievement. Also, Roberts, Bellinger, and McCormick (2007), and Miller, Dilworth-Bart and Hane (2011), in their separate studies found that lower maternal education was a major risk factor linked to children's low reading scores. Andrabi, Das and Khwaja (2009) sought to find out if maternal education has a causal impact on children's educational outcomes. They did not only find a relationship between maternal education and mathematics and English language achievement, but also between the maternal education and children's high achievement in their vernacular which is Urdu language. By combining a nationwide census of schools in Pakistan with household data, they used the availability of girls' schools in the mother's birth village as an instrument for maternal schooling to address this issue. Since public schools in Pakistan are segregated by gender, the instrument affects only maternal education rather than the education levels of both mothers and fathers. The analysis finds that children of mothers with some education spend 75 minutes more on educational activities at home compared with children whose mothers report no education at all. Mothers with some education also spend more time helping their children with school work; the effect is stronger (an extra 40 minutes per day) in families where the mother is likely the primary care-giver. Finally, test scores for children whose

mothers have some education are higher in English, Urdu (the vernacular), and mathematics by 0.24-0.35 standard deviations. The study also collaborated with Jackson, Kiernan, and McLanahan (2017) in their studies which examined maternal education, changing family circumstances, and children's skill development in the United States.

However, this present study contrasted with that of Magnuson cited also Nwikpo (2016) who examined whether increases in mothers' educational attainment were associated with changes in children's academic achievement and the quality of their home environments using data from the National Longitudinal Survey of Youth on children between the ages of 6 and 12. Results suggested that children of young mothers with low levels of education performed better on tests of academic skills and had higher quality home environments when their mothers completed additional schooling, whereas increased maternal education did not predict improvements in the achievement or home environments of children with older and more highly educated mothers. The difference in the result might have been as a result of difference in age. While the present study used adolescents, Magnuson's used middle childhood. Actually, Magnuson's subjects may not have come to age of consciously appreciating their mother's educational attainments, making it impossible for them to see them as role models. Adolescents are able to appreciate their parents' achievement in life which can motivate them to also strive to do so in life.

Conclusion

This study provides empirical evidence that maternal educational attainment significantly influenced the academic achievements of adolescents in Anambra State of Nigeria. It implies that adolescents whose mothers are not well educated would need perhaps individualized help that will bridge the gap between them and those from highly educated ones. In this direction, teachers should endeavour to know the background of the students and make use of appropriate individualized instructional activities to achieve such goals.

Recommendations

Based on the findings and implication of the findings of this study, the following recommendations are made:

1. Efforts should be made by the government and international donors to give special assistance to mothers, especially younger mothers with low educational attainment, to enable them engage in Adult Education Programmes. This will widen their knowledge and skills to assist their own children in their educational pursuits.
2. There should be awareness campaign for parents by the government and NGOs on the importance of giving high level of education to female children instead of giving them out for marriage at tender age. If this is done, these female children will become better equipped in readiness for the socialization and education of their own children.
3. There should be conscious and conscientious efforts made by school authorities to determine adolescents' maternal educational levels. This should be integrated in decisions to be made on a child. For example, instead of embarrassing and/or sending away a child for failing to do home assignment, the school may realize that the child has no home support to supervise him/her and help in the assignment. Consequently, that knowledge will enable the school authority to give individualized attention to

such a child to make up for the lack or inadequate home education support. Such steps may include; advocating for scholarships or sponsorship by PTA, provision of appropriate learning materials, exempting the child from payment for extension lessons etc.

4. Teachers should additionally employ individualized instructional strategies in classrooms so that adolescents' unique characteristics will be taken into consideration since it is an undeniable fact that they are coming from different homes with different backgrounds and ideologies.

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