

Effects of Maternal Status on Cognitive Performance of Preschool Children in Nsukka Local Government Area, Enugu State, Nigeria

Okoye Obiageli Ifeyinwa¹, Owoh Ngozi Priscilla¹, Isife Chima Theresa² & Onyike Nkechi Georgina¹

¹Department of Home Science and Management, University of Nigeria, Nsukka, Nigeria.

²Institute for Development Studies, University of Nigeria, Nsukka, Nigeria

IJASR 2021

VOLUME 4

ISSUE 5 SEPTEMBER – OCTBER

ISSN: 2581-7876

Abstract: The general objective of this paper was to examine the association between pre-school children's cognitive performance and their mothers' socio-economic characteristics in Nsukka, Enugu State, Nigeria. Specifically the study was to determine socio-demographic/economic characteristics of mothers of the children, cognitive performance of preschool children aged 3-5 years in Nsukka rural and urban areas, association between mothers' occupation, income level and educational attainment on children's cognitive performance of children studied. Four hundred children (3-5) year old segregated into equal urban and rural sub samples, were studied. A structured questionnaire captured information on socio demographic and socioeconomic characteristics of the respondents. Ziler's "Draw- a -person-test" was used to capture cognitive performance of the children. Descriptive statistics, Chi-square and the SPSS computer software were used for data analysis. Findings showed a strong association between location and cognitive performance. There were significant associations between mothers' education, income and children's cognitive performance in the rural ($P=0.027$) and urban ($P=0.029$) areas. There was a significant difference ($P<0.05$) between mothers occupation and children's cognitive performance in the rural area. Cognitive test score appeared to be a strong function of income with significant differences in both locations. In conclusion, investing in female education will improve the cognitive performance and standard of living of children.

Keywords: Socio-Economic Status, Mothers, Cognitive Performance, Preschool Children, rural, urban, location

Introduction

Preschool age (2-5 years) is a crucial period for the development of mental health and cognitive skills. Cognitive skills can be defined as the ability to learn categories, process, structure information and react to social and environmental cues (Mclead, 2018). These crucial skills enable children to process sensory information, learn to evaluate, analyze, remember and make comparisons within a given environment. The foundation for sound mental health is built early in life (Robson, 2014). Children develop psychological structures for learning and build on them progressively during their early years than at any other time in life. They need conducive environment, healthy nutrition and educated mother to nurturing their brain for cognitive development. Improved maternal socioeconomic status can be pre-requisite for good nutritional status and conducive environment that can significantly contribute to cognitive development in children.

Cognitive development for children include the acquisition of age-appropriate reading, writing, and numeracy skills, as well as decision-making, critical-thinking, problem-solving, and self-regulatory learning skills. It also includes the ability to ask appropriate questions and provide appropriate answers within a given environment and to identify and solve relevant problems. Cognitive tests and what they measure in children vary. Thus, cognitive tests are often grouped into tests of ability and tests of achievement. However, both types of tests involve what the test-taker has learned and can do. Most ability tests assess learning that has occurred in one's environment. These tests are broken into verbal and performance tests. However, achievement tests typically involve learning from very specialized education and training experiences. Verbal tests use language to ask questions and demonstrate answers. Performance tests on the other hand minimize the use of language. They can involve solving problems that do not involve language. They may involve manipulating objects, tracing mazes, placing pictures in the proper order, drawing and finishing patterns.

Cognitive assessment for children usually includes gathering comprehensive background information through interviews with the child, parents and school teachers and the administration of standardized tests by trained

psychologists. There are various standardized test that can be used to assess or evaluate cognitive performance of children, one of which is 'Ziler's Draw-a-Person Test.' This test involves measurement of intelligence by drawings. This can be used to assess nonverbal intelligence or cognitive abilities of children (Ziler 1973).

Piaget's cognitive development theory stated that this preoperational stage involves the use of their imagery and memory skills for learning and memorizing in order to test the limits of their cognitive abilities (McLeod, 2018). Thus adequate responsive stimulation during the first years of life is also crucial for children to reach their developmental potential. However, it requires the mother's strong influence on attitudes, abilities and behavior of the children. Their cognitive, affective and psychomotor development is based on their earliest attachment to their mothers.

Socioeconomic status of the mother is one of the conditions that can have effect on child's cognitive performance. It may be a critical factor that can affect children's mental health, wellbeing and development. Socioeconomic status indicates a measure of social standing which includes income, education and occupation. They are important predictors of children's cognitive performance. These are crucial to the child's nutrition status and other environmental factors which support their cognitive and social development.

A variety of socioeconomic status of mothers such as education, household income, and occupation may have very strong influence and lasting effects on early childhood cognitive performance which determine their intelligence quotients (IQ). Studies have shown that mothers' socioeconomic status is a good indicator of children's cognitive performance (Brooks-Gunn, Han & Waldfogel, 2010). Studies have shown that intelligence is improved by education and may be hindered by environmental factors such as poverty (Berkowitz, Moore, Astor & Benbenishty, 2017; Piccolo et al., 2016).

In developing countries, especially Nigeria, many low socioeconomic status children face deprivation, emotional and social instability which affect their cognitive developmental outcome (Akinyemi, Bolajoko & Gbadebo, 2018). Turkheimer and Horn (2014) highlighted that socioeconomic status is associated with a wide array of health, cognitive, and socio emotional outcomes in children, with effects beginning prior to birth and continuing to adulthood (Jordan & McDowell, 2013; Tucker-Drob, 2012). Numerous studies have documented that poverty and low maternal education are associated with lower levels of school achievement and IQ later in childhood (Berkowitz, Moore, Astor & Benbenishty, 2017; Piccolo et al., 2016).

Lower cognitive performance is associated with poorer health and functioning throughout lifespan (Berkowitz, Moore, Astor & Benbenishty, 2017). Poor cognitive abilities impair functional performance in adulthood. Most successful and well-adjusted children are likely to come from homes where parental socioeconomic status are favorable. Children from deprived families are often ill-equipped to overcome hardship and break out of the vicious circle of poverty. Piccolo et al. (2016) stated that children with lower socioeconomic status tend to have lower performance regarding IQ, verbal episodic and semantic memory, working memory, written language, verbal, memory and inhibitory control tasks than those with higher socioeconomic status.

Poor maternal socioeconomic status is more likely to influence children to exhibit behavior problems, drop out of school, child abuse and neglect, delay in cognitive abilities and health problems in adulthood. Mothers with low status tend to have weaker control over household resources, tighter time constraints, less access to information and health services, poorer mental health and lower self esteem (Piccolo et al., 2016). Cleland and Van Ginneken (2001) reported in a study that children from families with higher socio-economic status do better on a number of cognitive tests, including IQ scores, reading, language batteries and tests. Mothers with high socioeconomic status often are able to provide their young children with learning materials such as quality child care, books and toys and conducive child friendly environment that can promote learning at home. Higher levels of maternal educational attainment have been consistently linked to their children's better academic achievement (Cleland & Van Ginneken, 2001; Brooks-Gunn, Han & Waldfogel, 2010). A study in Uganda highlighted that more-educated women are likely to have better jobs and more wealth (Keats, 2016).

Stable maternal employment in the first five years of a child's life is likely to improve children's better cognitive development at later ages. Prior research has demonstrated strong association between mothers occupation and children's health outcomes (Bates & Lewis, 2013). Low income and educational status have shown to be strong predictors of a range of physical and mental health problems due to lack of finance to meet up with conducive

environmental conditions and better nutrition that can improve cognitive behaviors (Turkheimer & Horn, 2014). Poor nutrition as a result of low socio-economic background is one of the causes of malnutrition and has a significant impact on the growth and development of the brain and later cognitive functioning. Negative influence on preschool children as a result of poor maternal status can lead to exhibit of poor behavioral problems, drop out of school, child abuse and neglect, delay in cognitive abilities and outcome.

Report on maternal influence on cognitive performance among preschool children is limited in Nsukka rural and urban, Enugu State. Therefore, there is urgent need to have an insight on the relationship between maternal socioeconomic status on cognitive performance of preschool (2-5) years children in the study areas. Thus, this paper was to assess the relationship between maternal status and cognitive performance of children in Nsukka urban and rural in Enugu state, Nigeria.

Objective of the study

The generally objective of the study was to investigate the relationship between maternal status and cognitive performance of children in Nsukka urban and rural in Enugu state, Nigeria.

Specifically, the study was to determine the:

- i. socio-demographic/ economic characteristics of families of the children
- ii. cognitive performance of preschool children aged 3-5 years in Nsukka rural and urban areas
- iii. association between mothers' socioeconomic status and cognitive performance of children in rural and urban areas

Methodology

Design of the study: The study adopted a Cross-sectional survey research design. Mothers and their children aged 3-5 years were involved in the study.

Area of the study: The study was carried out in Nsukka rural and Urban communities in Nsukka Local Government area (L.G.A) of Enugu State, Nigeria. It is located in the northern part of Enugu state, south eastern Nigeria.

Population for the study: A total of 400 preschool children from public and private schools were used for the study. This study was carried out among preschool children in Nsukka rural and urban. The sample population consists of both males of females children from rural and urban areas and their mothers in Nsukka Local Government Area of Enugu State.

Sample of the study: A random sampling technique was used in the study. The names of all nursery schools in Nsukka Local Government Area (LGA) were collected from Nsukka Local Government Area education authority. Two schools each were randomly selected from the list of schools in Nsukka urban and Nsukka rural areas in Enugu state. Altogether four schools were used for the study in Nsukka Local Government Area (LGA), in each of the schools, one hundred children were randomly selected from each school.

Instrument for data collection: Data was collected using structured questionnaire which was developed by the researcher based on research objectives. Standardized questionnaire was used to collect information on cognitive test score.

Data collection methods: A structured questionnaire was used for interviewing the respondents. The questionnaire was divided into sections. Section A sought information on personal data and background of the respondents. Section B sought information on child- related factors and health data. Section C sought information on socioeconomic factors affecting cognitive performance of children such as mother education, income and occupation. Section D used standardized questionnaire to obtained information on the cognitive performance.

Cognitive Assessment : Ziler's "Draw a person test" was used to assess the cognitive performance of the children. The purpose is to test children's drawings has been thought to provide indications of visual motor development,

levels of cognitive functioning, and intellectual maturity. The draw –a-person test was used to assess nonverbal intelligence and cognitive abilities of the children. A 52 item test was designed to score the drawing as put forward by Ziler. To evaluate intelligence, the test administrator used the Draw-a-Person: Quantitative Scoring system (QSS). Each child was given a sheet of paper and pencil to draw. The children were guarded against any child tracing or any child helping another during the drawing sessions. The instruction was simple to draw a person as good as they can. The time given to complete the drawing was 15 minutes. Some of the items listed for scoring are the head, hair, eyes, eyelashes, eyebrows, nose, mouth, chin, ears, neck, shoulders, arms, elbows, hands, torso, waist, hips, legs, knees, ankles, feet, different aspects of the drawings, such as specific body parts including presence or absence of a specific body part. In all, there are 52 scoring items for each drawing. The items were aimed at testing the presence in the drawing of definite parts of the body and in their correct numbers such as the hand with five fingers. Some of the items aimed at testing whether the drawings have the correct proportions, or if some details were correctly related, such as whether the legs close before the waist. To obtain the standardized IQ score, the 52 items scores are summed into a raw score. The intelligent quotient of the pupils studied was calculated using the Ziler’s designed criteria and the table of Draw-A-Person-intelligent Quotient. The intelligence quotient (IQ) is a measure of intelligence that is adjusted for age.

$$\text{Draw-A-Person intelligent quotient} = \text{mental age} \div \text{chronological age} \times 100.$$

The Draw-A-Person intelligent quotient (DAPQ) score obtained was compared with the expected DAPQ score for age using the table for average DAPQ scores (Ebigbo and Izuora, 1981)

The scores of the children were correlated to the teachers’ rating of the children in general class performance. Academic performance of the children was studied using the average scores achieved in the three term examinations in an academic year with the help of the class teachers.

Four categories were used to classify the performance of the children depending on the score. The categories were; very good, good, poor and very poor.

Candidates who score below fifty percent were this cut-off

Statistical Analysis

Data were analyzed using the statistical package for social sciences (SPSS) version 23 computer software. Descriptive statistics such as frequencies and percentages, mean and standard deviation as well as Chi-square analysis were used to determine relationship between variables, appraise the validity and reliability of the dependent variables such as cognitive performance of the children and socioeconomic status of mothers (education, income, occupation). The significance level was set at $p < 0.05$.

Findings/Results

The results in Table 1 showed the socio-demographic characteristics of the families of the children

Table 1: Socio-demographic characteristics of the families of the children.

Variables	Frequency				Total	
	Rural		Urban		No	%
	No	%	No	%		
Household size (persons)						
1-4	67	33.5	118	59.0	185	46.2
5-7	116	58.0	68	34.0	184	46.0
8 and above	17	8.5	14	7.0	31	7.8
Total	200	100	200	100	400	100
Type of housing						
Bungalow	59	29.5	55	27.5	114	28.5

Flat	53	26.5	80	40.0	133	33.3
Duplex	22	11.0	47	23.5	69	17.2
One room	66	33.0	18	9.0	84	21.0
Total	200	100	200	100	400	100

Source of drinking water

Borehole	28	14.0	91	45.5	119	29.7
Well	77	38.5	28	14.0	105	26.3
Pipe borne water	47	23.5	40	20.0	87	21.7
Stream	32	16.0	30	15.0	62	15.5
Harvested rain water	16	8.0	11	5.5	27	6.8
Total	200	100	200	100	400	100

Type of toilet facility

Water system	27	13.5	123	61.5	150	37.5
Bush	121	60.5	16	8.0	137	34.4
Pit	45	22.5	58	29.0	103	25.9
Bucket	7	3.5	3	1.5	9	2.2
Total	200	100	200	100	400	100

Source of cooking fuel

Gas	13	6.5	100	50.0	113	28.2
Kerosine	50	25.0	45	22.5	137	23.8
Charcoal	12	6.0	30	15.0	42	10.5
Firewood	114	57.0	12	6.0	126	31.5
Others	11	5.5	13	6.5	24	6.0
Total	200	100	200	100	400	100

Source: Compiled from field data

A total of 59.0% of the respondent families in the urban area had a household size of 1-4 persons while majority (58.0%) of the rural households had a size of 5-7 persons. A higher percentage (33.0%) of the rural children shared accommodation in a single room and 40.0% of the households in the urban area lived in flats.

As many as 38.7% of the respondents in the rural area drank water from wells unlike those in the urban (14.0%). A total of 45.5% of the respondents in the urban sourced water from boreholes. However, in the rural area, a few (14.0%) did collect water from borehole. As many as 60.5% of the respondents in the rural area had no toilet facility. They defecated in the bush as compared to the urban families 61.5% of who used water system toilets. In the urban area, half (50.0%) of the families used gas as their major cooking fuel as compared to only 6.5% of the rural families using gas. Conversely, while 57.0% of rural families cooked with firewood relative to 6% of the urban families.

Table 2 presents the socioeconomic characteristics of mothers of the children. A total of 28.0% of the mothers in rural area were artisans, 20.0% were farmers, others were 10.5% and 22.0% businesswomen/traders. A very few (5.5%) of the mothers were housewives. In the urban area, 29.0% were civil servants, 18.5% artisans, 11.5% farmers, only a very few (3.5%) were housewives and others, formed 12.5%. of the respondents.

Table 2: Socioeconomic characteristics of the mothers in rural and urban areas.

Variables	Frequency					
	No	Rural %	Urban No	Urban %	Total No	Total %
Occupation						
Farmer	40	20.0	25	12.5	65	16.3
Civil /public servant	28	14.0	58	29.0	86	21.5
Business/trader	44	22.0	50	25.0	94	23.5
Artisans	56	28.0	37	18.5	93	23.2
House wives	11	5.5	7	3.5	18	4.5
Others	21	10.5	23	11.5	44	11.0
Total	200	100	200	100	400	100
Educational attainment						
No formal education	42	21.0	30	15.0	72	18.0
Primary	71	35.5	39	19.5	110	27.5
Secondary	43	21.5	40	20.0	83	20.7
Tertiary	44	22.0	91	45.5	135	33.8
Total	200	100	200	200	400	100
Income level						
Low income	103	51.5	42	21.0	145	36.3
Middle income	33	16.5	88	44.0	121	30.2
High income	64	32.0	70	35.0	134	33.5
Total	200	100	200	100	400	100

Source: Compiled from field data

A total of 35.5% of the mothers in the rural area had primary education as compared to a few (19.5%) in the urban area. Higher percentage (45.5%) of mothers in the urban area had tertiary education as compared with a few (22.0%) in the rural area. More than a half (51.5%) of the respondents in the rural area were low income earners, and a few (21.0%) were low income earners in urban area. In both communities (32.0% and 35.0%) were high income earners. middle income earners as compared to rural where a few (16.5%) were middle income earners.

Table 3: Cognitive test score and performance(non- verbal and academic test) of children studied.

Cognitive Performance	Rural		Urban		Total	
	No	%	No	%	No	%
Above average	50	25.0	142	71.0	192	48.0
Below average	150	75.0	58	29.0	208	52.0
Total	200	100	200	100	400	100

Key : $\geq 50\%$ = above average
 $\leq 50\%$ = below average
 rural = $\chi^2 = 1.239$; df = 1; P = 0.037;

Table 3 shows the cognitive performance and percentage scores of the children. The tests were scored following the 52 items as put in the draw a –person- test as put forward by Ziler. More so, the scores of the children were correlated to the teachers’ rating of the children in general class performance Majority (71.0%) of the children in the urban area were above average compared to just 25.0% in the rural area. A total of 75.0% of the children in rural area scored below average as compared with a few urban children (29.0%) who scored below average in the cognitive test. There was a significant difference between locations with respect to cognitive performance of children ($P = 0.037$ and cognitive performance of children).

Table 4: Mothers’ occupation by cognitive performance of children in rural and urban areas.

Location	Variable	Number Examined	Above Average No	Average (%)	Below Average No	(%)
Rural	Occupation					
	Farmers	40	4	8.0	36	24.0
	Civil /public Servants	28	18	36.0	10	6.7
	Business/Traders	44	5	10.0	39	26.0
	Artisans	56	4	8.0	52	34.7
	House wives	11	6	12.0	5	3.3
	Others	21	13	26.0	8	5.3
	Total	200	50	100	150	100
Urban						
	Farmers	25	12	8.5	13	22.4
	Civil /public Servants	58	52	36.6	6	10.3
	Business/Traders	50	25	17.6	25	48.2
	Artisans	37	31	21.8	6	10.3
	House wives	7	5	3.5	2	3.5
	Others	23	17	12.0	6	10.3
	Total	200	142	100	58	100

Source: Compiled from field data

Table 4 shows the effect of mothers` occupation on cognitive performance of the children. In urban and rural areas respectively, 36.0 % and 36.6% of the children whose mothers were civil servants scored above average. Very few (6.7% and 10.3%) scored below average in both areas respectively. In both areas, 34.7% and 10.3% of the children whose mothers were artisans scored below average in the cognitive test. Again, in both areas, a very few children (3.3% and 3.5%) whose mothers were housewives scored below average in the test.

Table 5 : Mothers` income level on cognitive performance of the children in both locations.

Location	Variable	Number	Cognitive performance			
			Above	Average	Below	
Average		Examined	No	(%)	No	No
(%)						
Rural	Income level					
	Low income	103	8	16.0	95	63.3
	Middle income	33	12	24.0	21	14.0
	High income	64	30	60.0	34	22.7
	Total	200	50	100	150	100
Urban	Family income level					
	Low income	42	14	9.9	28	48.3
	Middle income	88	62	43.7	26	44.8
	High income	70	66	46.4	4	6.9
	Total	200	142	100	58	100

Source: Compiled from field data

Table 5 demonstrated the effect of mothers` income level on cognitive performance of the children in both locations. More than 50.0% of the children in both communities (60.0% and 46.4%) from high income families had an edge in cognitive test score over the other urban and rural areas respectively. Most children in both areas born of low income earners performed below average (63.3% and 48.3%). There was significant difference between income and cognitive performance in both areas.

Table 6: The distribution of mothers' educational status by cognitive performance of the children in areas.

Location	Variable	Number	Cognitive Performance			
			Above Average	Below Average		No
(%)		Examined	No	(%)		No
Rural	Educational Attainment					
	No formal education	42	5	10.0	37	24.7
	Primary	71	7	14.0	64	42.7
	Secondary	43	10	20.0	33	22.0
	Tertiary	44	28	56.0	16	10.6
	Total	200	50	100	150	100
Urban						
	No formal education	30	12	8.5	18	31.0
	Primary	39	18	12.6	21	36.2
	Secondary	40	24	16.9	16	27.6
	Tertiary	91	88	62.0	3	5.2
	Total	142	142	100	58	100

Source: Compiled from field data

Table 6 shows that in both locations, children whose mothers had tertiary education scored better in the cognitive test, with an above average performance of In both areas as many as 56.0% and 62.0%, of the children whose mothers had tertiary education performed above average. In both rural and urban areas 10.6% and 5.2%, of the children whose mothers had tertiary education, performed below average. A total of 24.7% of the children whose mothers had no formal education performed below average.

However, only a very few (10.0%) performed above average in the rural area. In urban area, a total of 31.0% of the children whose mothers had no formal education performed below average. Only a very few (8.5%) performed above average. There was significant association between mothers' education and cognitive performance of the children in the rural ($\chi^2 = 3.118$; $df = 2$; $p = 0.027$) and urban ($\chi^2 = 2.891$; $df = 2$; $P = 0.029$) areas. Again, in both areas, 42.7% and 36.2% of the children whose mothers had primary education performed below average in the cognitive test.

Discussion of findings

Socio-demographic/economic characteristics of the children and their mothers' in rural and urban areas

The study revealed that household size and living conditions of the children. Majority (58.0%) of the rural households had a higher household size unlike their counterpart. Moreso, a good percentage (33.0%) of the rural children shared accommodation in a single room. As many as 60.5% of the respondents in the rural area had no toilet facility as compared to the urban families 61.5%. These poor living conditions could have a negative influence on their health. Studies have shown that risk factors affecting children's mental health. Studies have shown that housing is an important determinant of health, and substandard housing is a major public health issue. poor quality and inadequate housing contributes to health problems such as chronic diseases and injuries, and can have harmful effects on childhood development (Liddell & Guiney, 2015). This is in line with the findings by Bates and Lewis (2013), which showed that individuals are able to secure housing on the basis of their existing projected resources. He explained that neighborhoods vary greatly in terms of safety, environmental conditions and availability of services and public facilities. Disadvantaged individuals and people in low socio-economic class are the ones mostly found residing in ghetto environment. In this deprived communities, high unemployment and menial jobs opportunities abound and this places strong strains on family life.

The findings showed the occupational, educational attainment and income status of the mothers. Greater percentage (45.5%) of mothers in the urban area had tertiary education as compared with a few (22.0%) in the rural area. Higher percentage (45.5%) of mothers in the urban area had tertiary education as compared with a few (22.0%) in the rural area. A higher percentage of the mothers were petty traders. More than a half (51.5%) of the respondents in the rural area were low income earners. Studies have shown that poverty and poor socio-economic status stem from inadequate health services, low income, an unhealthy environment, improper care and food insecurity (Liddell & Guiney, 2015). Research has found that there is a high risk of educational underachievement for children who are from low-income housing circumstances (Dearing, McCartney & Taylor, 2001).

Cognitive performance of the children

The study evaluated the cognitive performance of the children in rural and urban areas using Draw-a-Person Quantitative Scoring system (QSS). Different aspects of the drawings, such as specific body parts, including presence or absence of a specific body part. In all, there are 52 scoring items for each drawing. The scores of the children were correlated to the teachers' rating of the children in general class performance. A total score on both gives the cognitive test score.

A total of 200 children each from rural and urban areas participated in the study respectively.. Majority (71.0%) of the children in the urban area was above average and a few (25.0%) were above average in rural area. A total of 75.0% of the children in rural area scored below average as compared with a few urban children (29.0%) who scored below average in the cognitive test. There was a significant difference between locations with respect to cognitive performance of children ($P < 0.05$). There was strong association between locations (rural = $\chi^2 = 1.239$; $df = 1$; $P = 0.037$ and cognitive performance of children. Numerous researches have found that children growing up in rural poverty score significantly lower on visual working memory tests than their urban counterparts (Banks, Kuper & Polack, 2017; Cleland & Van Ginneken, 2001; Brooks-Gunn, Han & Waldfogel, 2010).

Influence of mothers' income on children's cognitive performance

The study revealed that there was a strong positive correlation between mothers' income and children's academic performance in Nsukka. Children from higher income mother had cognitive outcome. This is in line with studies that showed that higher income mothers are able to acquire conducive and child friendly learning environment, pay school fees in time, avail the adequate learning materials at home and school (Berkowitz, Moore, Astor &

Benbenishty, 2017; Piccolo et al., 2016). At the household level, income and wealth are linked to child wellbeing through the effects purchased goods and services have on the proximate determinants of child cognitive development (Boyle et al., 2006). Even among low-income families, mothers with greater social and economic resources were more supportive in parenting their children than those with fewer resources, which in turn influenced the children's cognitive performance (Society for Research in Child Development, 2008). Selzam (2017) showed that low income children exhibited lower levels of cognitive-linguistic skills, lower verbal interactions and lower phonological awareness and generally lower academic performance than their counterparts from high and middle income families. Numerous studies have documented that poverty and low maternal education are associated with lower levels of school achievement and IQ later in childhood (Dearing, McCartney & Taylor, 2001; Akinyemi, Bolajoko, Gbadebo, 2018).

Influence of mother's educational attainment on children's cognitive performance.

The study revealed that there is strong positive correlation between mother's level of education and children's academic performance. This is in line with other studies that reported that mothers with higher education attainment are likely to monitor children's educational progress, assist in homework, provide learning/playing materials that can help in development of cognitive behavior and are able to enroll in good schools (Barrera, 2003; Cleland & Ginneken, 2001). Mothers with higher education attainment are likely to monitor children's educational progress, assist in homework, enroll in provide learning/playing materials that can help in development of cognitive behaviour and are able to enroll in good schools (Parcel, Campbell & Zhong, 2012). This is in line with studies that mothers with higher levels of education on average provide cognitively stimulating learning environment and literacy activities in the home (Turkheimer, Haley, Waldron, Onofrio & Gottesman, 2003). Mothers educational level is an important predictor of children's educational and behavioral outcomes (Davis, 2005; Dearing, McCartney, & Taylor, 2002; Turkheimer & Horn 2014). Mothers with low educational attainment may lack the ability for providing tutorship for their children's academic attainment. This can have negative influence on children's cognitive performance over time.

Influence of mother's occupation on children's cognitive performance.

There was a significant difference ($P < 0.05$) between mothers occupation and children's cognitive performance in the rural area. Very few (3.3% and 3.5%) children whose mothers were housewives scored below average in rural and urban areas respectively. Studies have shown that overall, the impact of maternal employment on child's cognitive status was linked not only to income, but to other related factors such as type of work, wage labour and self employment, place of work, length of working day, the amiability and quality of substitute child care and the child age Boyle et al., 2006). Evidence from Uganda suggests that more-educated women are likely to have better jobs and more wealth (Keats, 2016).

Higher household income and assets directly raise the ability to purchase sufficient quantities of nutritious foods, clean water, clothing, adequately ventilated housing, fuel for proper cooking, safe storage of food, personal hygiene items and health services (Boyle et al., 2006; Khan, Walsh, Fafer, Vaughan, Hyglt & Walton, 2007). A paper published in the National Bureau of Economic Research shows the psychological, social or other benefits of mother's employment that children of working mothers were more assertive (Brooks-Gunn et al. 2010). Mothers employment have a influence on preschooler intelligent quotient. Research shows the psychological, social or other benefits of mother's employment. Children of working mothers were more assertive (Brooks-Gunn et al. 2010). Pilkauskas et al. (2018) highlighted that stable maternal employment in the first five years of a child's life is associated with decreased externalizing behavior problems at ages five and nine. Prior research has demonstrated strong associations between mothers occupation and children's health outcomes (Bates & Lewis, 2013).

Conclusions

The study assessed the socioeconomic status of mothers and cognitive performance of their children. The findings of this study concluded that there was a significant positive correlation between mothers' income and children's cognitive performance in both locations Occupation, educational level of mothers income were strongly associated with cognitive performance of children in the study areas. The socioeconomic conditions in both locations were poor. However, urban dwellers had better living conditions than rural households. This association appears to be

mediated by aspects of the family environment, particularly factors involving the quality of the mother-child relationship.

Early child care and educational measures could impact the associations. With the above results, policy makers should deliberate a plan on how to deliver necessary resources to the target population. Government should provide the target resources to the most disadvantaged population. The low proportion of disadvantaged children reported as having a high level of cognitive performance points to a potential area of focus in developing strategies to help this population of children get closer to reaching their full developmental potential. There should be policies targeting levels of socioeconomic inequality in society and a range of comprehensive early childhood interventions and programs. Policies to promote the family relationship should be encouraged. Moreover, specially designed programs should be promoted by government and non-governmental organizations towards investment in women education to improve standard of living. It is recommended that intervention strategies to raise mothers aspirations for their children on parenting behaviors and child cognitive outcomes should be done especially in rural areas in form of education services, particularly given to mothers on the importance of cognitive development of children. Government (State and LGA) should provide employment opportunities for the people to help increase the income level of the mothers, especially in the rural areas. This would improve the cognitive status of the children by enabling the mothers to provide playing materials that can help in the development of cognitive behavior.

REFERENCES

1. Akinyemi, J.O., Bolajoko, I., & Gbadebo, B. M. (2018). Death of preceding child and maternal healthcare services utilisation in Nigeria: investigation using lagged logit models. *J Health Popul Nut*;37(1):23.
2. Banks, L.M., Kuper, H., & Polack, S.(2017). Poverty and disability in low-and middle-income countries: a systematic review. *PLoS One*.;12(12):e0189996.
3. Brooks-Gunn, J., Han, W., & Waldfogel, J. (2010). First year maternal employment and child development in the first 7 years: What distinguishes women who work full-time, part-time, or not at all in the 1st year?*Monographs of the Society for Research in Child Development*, 75, 35–49.
4. Bates T. C., & Lewis, G.J. (2013) Childhood socioeconomic status amplifies genetic effects on adult intelligence. *Psychol Sci* 24:2111–2116.
5. Barrera, A. (2003). The role of maternal schooling and its Interactions with public health programs in child health production. *Journal of Development Economics*, 38(5), 207-212.
6. Berkowitz, R., Moore, H., Astor, R. A., & Benbenishty, R. (2017). A research synthesis of the associations between socioeconomic background, inequality, school climate, and academic achievement. *Rev. Educ. Res.* 87, 425–469. doi: 10.3102/00346543.16.669821
7. Bhatnagar, S., & Taneja, S. (2001). Zinc and cognitive development. *British Journal of Nutrition*, 85(2),139-145.
8. Boyle, M., Y., Racine,L., Georgiades, K., Snelling, S., Hong. W., Omariba, P., & Ramelacini, O. (2006). The influence of economic development level, household wealth and maternal education on child health in the developing world. *Social Science and Medicine*: 63, 2242-54.
9. Cleland, J.C., & Van Ginneken, J. K. (2001). Maternal education and child survival in developing countries. The search for pathways of influence. *Social Science and Medicine*. 27 (2),1357-1368.IU.
10. De Onis, M., & Branca, F. (2016). Childhood stunting: a global perspective. *Matern. Child Nutr.* 12, 12–26. doi: 10.1111/mcn.12231
11. Dearing, E., McCartney, K., & Taylor, B.A. (2001). Change in family income matters more for children with less. *Child Development*. 2001;72:1779–1793
12. Fergusson, M. D., Horwood, J. L, & Boden, M. J. (2008). The transmission of social inequality: Examination of the linkages between family socioeconomic status in childhood and educational achievement in young adulthood. *Research in Social Stratification and Mobility*, 26; 277-295.
13. Feinstein, L., & Bynner, J. (2004) ‘The importance of cognitive development in middle childhood for adulthood socioeconomic status, mental health, and problem behavior, *Child Development*, 75(5): 1329-1339.
14. Figlio, D., Guryan, J., Karbownik, K., & Roth, J. (2014) The effects of poor neonatal health on children’s cognitive development. *Am Econ Rev*: 3921–3955.
15. Frye, D., Baroody, A., Burchinal, M., Carver, S. M., Jordan, N. C., & McDowell, J. (2013). *Teaching maths to young children: A practice guide*. Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education.

16. Harding, J. F, Morris, P. A., & Hughes, D. (2015). The relationship between maternal education and children's academic outcomes: A theoretical framework, *Journal of Marriage and Family*, 77(1):60–76
17. John, A.M., Kibbe M., & Tarullo, A.R. (2019). A systematic assessment of socioeconomic status and executive functioning in early childhood. *J. Exp. Child Psychol.* 178:352–368. doi: 10.1016/j.jecp.2018.09.003.
18. Liddell, C., & Guiney, C.(2015).Living in a cold and damp home: frameworks for understanding impacts on mental well-being. *Public Health*;129(3):191–9.
19. Nguyen, P. H., DiGirolamo, A. M., Gonzalez-Casanova, I., Young, M., Kim, N., & Nguyen, S. (2018). Influences of early child nutritional status and home learning environment on child development in Vietnam. *Matern. Child Nutr.* 14:e12468. doi: 10.1111/mcn.12468
20. Keats, A. (2016). Women's schooling, fertility, and child health outcomes: Evidence from Uganda's free primary education program. Unpublished manuscript, Department of Economics, Wesleyan University, Middletown, CT.
21. Khan, R. E., Walsh, J. A., Fafer, C.M., Vaughan, L.C., Hyglt, S.A., & Walton, J.(2007). Socioeconomic status and child development. *Annual. Review on Psychology*, 53, 3 71 – 99
22. Piccolo, , Arteche, A., Fonseca, R., Grassi-Oliveira, R., & Salles, J. F.. (2016). Influence of family socioeconomic status on IQ, language, memory and executive functions of Brazilian children. *Psicologia: Reflexão e Crítica*, 29, 23. Epub June 20, 2016.https://dx.doi.org/10.1186/s41155-016-0016-x
23. Robson, L. (2014) "Critical/Sensitive Periods." *Child Development*. Ed.Neil J. Salkind. New York: Macmillan Reference USA, 2002. 101-103. GaleVirtual Reference Library. Web.
24. Society for Research in Child Development (2008). Family resources, parenting quality influence children's early cognitive development, Family Resources, Links to Children's Cognitive Development across the First Three Years, *Journal of Child Development Parenting Quality*: Vol. 79, Issue 4,: 15-JUL-2008
25. Sophie, A. Hartwig, L. R., Robinson, D. L. Comeau, A. H., & Ruth, P. (2017). *Infant Mental Health Journal*, Published online June 28, 2017, 38(4), 499-513.
26. Selzam S (201 & Horn E(2014) (2014) Interactions between socioeconomic status and components of variation in cognitive ability. *Behavior Genetics of Cognition Across the Lifespan*, ed Reynolds C (Springer, New York), pp 41 –68.
27. Turkheimer, E., Haley, A., Waldron, M., D'Onofrio, B., Gottesman, I. (2003).Socioeconomic status modifies heritability of IQ in young children. *Psychol Sci*14:623–628.
28. Tucker-Drob, E.M. (2012). Preschools reduce early academic-achievement gaps:A longitudinal twin approach. *Psychological Science*. 23(3):310–319. doi:10.1177/095679761142 6728.
29. Willingham, D. T. (2012). Ask the Cognitive Scientist: Why Does Family Wealth Affect Learning?. *American Educator*, 36(1), 33-39.
30. Yousafzai, A. K., Obradović, J., Rasheed, M. A., Rizvi, A., Portilla, X. A., Tirado-Strayer, N. (2016). Effects of responsive stimulation and nutrition interventions on children's development and growth at age 4 years in a disadvantaged population in Pakistan: a longitudinal follow-up of a cluster-randomised factorial effectiveness trial. *Lancet Glob. Health* 4, e548–e558. doi: 10.1016/S2214-109X(16)30100-0
31. Zhao, N., Valcke, M., Desoete, A., Verhaeghe, J. (2011). The quadratic relationship between socioeconomic status and learning performance in China by multilevel analysis: Implications for policies to foster education equity. *International Journal of Educational Development*,
32. Ziler, H. (1975). *Measurement of intelligence by drawing*. Musenster-Westfalen: Ascjemdorf.