An Empirical Analysis of Parental Age on Child Nutritional Status in Plateau State, Nigeria

Gwaison, Panan Danladi
Economics Department
Nigeria Police Academy
Wudil-Kano
panan_gwaison@yahoo.com
07068147148

Abstract

The nutritional status of children in any society is an indicator of good health and standard of living in any society. This study empirically examined the influence of parental age on child nutritional status in Plateau State, Nigeria. A cross-sectional survey design was employed, 200 participants were randomly selected from various health centers in the 17 Local Government Areas in the State for the study. Collection of data was done by distributing questionnaires and collecting Mid Upper-Arm-Circumference (MUAC) measurements by using a tape measure the best way to measure severe acute malnutrition. Pearson product-moment correlation was used to analyze the data collected with the aid of statistical package for social science (SPSS). The results r (200 = .863, p = .000) indicated that there is a significant positive relationship between parental age and children's nutritional status in Plateau State. The implications of these findings for policy are, preventing child marriage and reducing teenage pregnancy, empowering girls with information, skills, and support networks, and educating and mobilizing parents and community members among others recommendations were made

Keywords: Parental age, child nutritional Status, malnutrition, Anaemia, Mortality.

1.1 INTRODUCTION

Malnutrition among children in developing countries is a major public health concern since it places a heavy burden on already disadvantaged communities. Poor physical growth, an indicator of poor nutritional status, is high in sub-Saharan countries, where approximately 21.9% of children are underweight and 40.1% are stunted (Black et al., 2008). The most vulnerable group of children are those under 5 years of age. Anemia, another indicator of poor nutritional status, is also widespread, with estimates indicating prevalence rates of 40–70% in Sub-Saharan countries. Both growth restriction and anemia in the early years of life increase the risk of mortality and morbidity and are associated with developmental and cognitive impairment (De Onis et al., 2004).

The link between poverty and poor nutritional status among children has been widely reported. Varying indicators of social-economic status (SES) such as maternal and paternal educational level, parental income, and family assets such as the ownership of land, quality of housing, and foods harvested among many SES indicators have all been associated with children's nutritional status (Kikafunda & Tumwine, 2006). Regardless of the method by which SES was estimated, its influence on a child's nutritional status was significant and consistent. It was observed that children from less advantaged families were more likely to experience growth restriction (i.e., stunting and being underweight) compared to their peers from more advantaged backgrounds (Arif, 2004). Despite this link, several factors give compelling reasons to carry out further investigation into the relationship between parental age and the nutritional status of children. One of the most salient reasons for this is the fact that the prevalence of stunting and being underweight has been found to show both between- and within-country variation in sub-Saharan Africa in general and in Nigeria in particular(Ene-Obong,2001). There is thus a need to examine the effects of parental age on the nutritional status of children in Plateau State Nigeria.

Worldwide, malnutrition is seen as a lack of access to highly nutritious foods, especially in the present context of rising food prices. Children and infants aged under five are highly vulnerable when it comes to malnutrition. Poor breastfeeding practices, offering unsuitable foods, and not ensuring that the child gets enough nutritious food are factors that contribute to malnutrition. Other health consequences such as infections – diarrhea, pneumonia, measles, and malaria – affect the child's nutritional status (WHO, 2014). In developing countries, malnutrition is one of the most important risk factors for high child mortality rates (WHO, 2014). Pregnant women and children are highly vulnerable to the consequences of malnutrition. Children in sub-Saharan Africa are 15 times more likely to die before the age of five than children in developed regions(WHO, 2014). One out of six children in developing countries show signs of being underweight, this points out a total number of 100 million children in the developing world (WHO, 2014). In almost every part of the world cases of malnutrition are declining, except for African countries. In large parts of Africa, the number of malnutrition rates does not change (Kikafunda & Tumwine, 2006). In Uganda, research from Kikafunda & Tumwine (2006) showed that many children, aged under five, have to deal with consequences of malnutrition such as diminished mental and physical capabilities.

Malnutrition is an overarching term that includes three different factors; stunting, wasting, and underweight. These three factors all have the same cause in common, they are induced by a deficiency of certain nutrients such as proteins and micronutrients (Caulfield et al., 2006)

A more recent study of Engebretsen et al. (2008). showed evidence for different determinants of malnutrition that are related to child growth. Distal factors such as wealth, land ownership, parental age, marital status, employment of both parents, and education of both parents are associated with (un)healthy growth of the child. Results of the study showed that wealth is the

most important factor to predict malnutrition in children. Parental age plays a significant role in the nutritional status of the child, Children from under-age parents and older parents suffer malnutrition.

Yu, et' al (2016) investigated the differential effects of young maternal age on child growth in a sample of developing countries in Africa, Asia, and Latin America. Cross-sectional data from Demographic Health Surveys from 18 countries were used, to select the first-born child of mothers aged 15_24 years and a range of potential confounding factors, including maternal height. Child length/height-for-age z-scores (HAZs) were estimated in age bands of 0_11, 12_23, 24_35, 36_47, and 48_59 months; The effect of low maternal age on child height restriction from 0 to 11 months occurred in half the countries studied after adjusting for confounders. Poorer growth continuing after 24 months in children of younger mothers was observed in all regions but needs further research to determine the causes. The effects were about double (in stunting prevalence terms) in Africa, where there was an increase in 10 ppts in stunting for children of young mothers.

Novella (2013) studied Parental Education, Gender Preferences and Child Nutritional Status: Evidence from Four Developing Countries in Ethiopia, India (Andhra Pradesh state), Peru, and Vietnam. By adopting a methodology to disentangle gender differences produced by technology and preferences, the study finds evidence that the allocation of household resources varies with the gender of the child and the gender of the parents.it further showed that maternal power has larger effects on girls' health than on boys' health in Peru and Vietnam. In contrast, in India, maternal bargaining power has a negative effect on girls' health, whereas in Ethiopia no differential effect is found.

Umapathi (2008) examined Maternal education, childcare, and nutritional program in Madagascar. The study reveals that the height-for-age of children (a measure of chronic under-nutrition)with the most educated mothers in the participating villages improves by 0.141 SD and by 0.323 SD after five and eight years of program operation, respectively. The heterogeneity in effects on weight-for-age is less stark but statistically significant: impacts are greatest for the most educated subgroup. For the group with no schooling, the impact is not statistically significant for any period.

The above studies reviewed were carried out in foreign countries, the methodology used in carrying the research and the methods of data analysis used are established gaps that this present study will fill

There is a high rate of underage marriage in Plateau State. It is against this background that this study will empirically investigate the impact of parental age on child nutritional status in Plateau State, Nigeria.

1.2 Research Question

The following research questions were posed to guide this study;

i. What is the impact of parental age on children's nutrition status in Plateau State?
ii. What is the impact of parental education level on children's nutrition status in Plateau State?

1.3 Hypothesis

The following hypothesis was formulated and was tested at 0.05 Significance levels.

i. Parental age in Plateau state does not have a significant relationship with the nutrition status of children.

ii. The parental education level in Plateau state does not have a significant relationship with the nutrition status of children.

2.0 Reviewed of relevant literature

2.1 Conceptual framework

Nutritional status is defined as the evident state of nutrition of an individual. A person is said to have a good nutritional status if he shows no evidence of malnutrition, whether open or latent. Nutrition is the aspect of science that interprets the relationship of food to the functioning of living organisms. It includes the uptake of food, the liberation of energy, elimination of wastes, and the biochemical synthesis that are essential for the maintenance of normal growth and development (Laditan, 1983). The nutritional status of any person is his/her health as dictated by the quality of nutrients consumed, and the body's ability to utilize them for its metabolic needs. Thus, being nutritionally vulnerable, under-5 children's nutritional status is generally accepted as an indicator of the nutritional status of any particular community (Davidson et al., 1975). This is due to their easy susceptibility to malnutrition and infection (Uppal Kumari & Sidhu, 2005). Children in this age group require a high supply of nutrients since they are usually very active and their growth is rapid. Also during this period, under-nutrition in the form of kwashiorkor, marasmus, anemia, and xerophthalmia are not uncommon (Ene-Obong, 2001). It has been estimated that approximately one out of every three Under-5 children is chronically malnourished and thereby subjected to a pattern of ill health and poor development in early life (UNICEF, 1998),

with malnutrition being associated with more than half of all deaths of children worldwide (Sobo & Oguntona, 2006).

2.2 Theoretical framework.

Becker (1965) was responsible for putting “family” on the map of academic research in economics in the 1960s. The simplicity and applicability of his models demonstrate the practicality of research at the household level (Grossman, 2003). Most studies on health and nutrition employ the Beckerian model of household utility where utility is derived both from purchased and home-produced goods (Arif, 2004; Chen & Li, 2006).

According to theory, households purchase goods and combine them with time into a household production function to produce commodities. The purpose of purchased goods and time is to serve as inputs to the acquisition of commodities, which, in turn, enter the household's utility function. For example, if the "quality of children" is a commodity, then related inputs might include food, vaccinations, schooling, and parental time. Another example of a commodity is "sleep," which would depend on the availability of a bed, house, and time. Information on inputs is thus essential to estimate the parameters of the production function. Inputs and outputs can often be jointly determined. For example, unobserved—i.e., to researchers—sick individuals are more prone to using health-related inputs, which could cause the estimated results of health inputs to be biased downward. The simultaneity bias caused by joint input-output demands can be removed by implementing instruments such as prices into the function.

3.0 MATERIALS and METHODS,

3.1 Research Design

This research was based on a cross-sectional survey design. Surveys were used to gather information in all the 17 Local governments of Plateau State in different health centers within the state.

3.2 Population

The target populations in this study were all infants and children aged under five years and their parents in Plateau State. The study sample 200 participants from various health centers in the state (N = 200). To determine whether or not parental age influences the nutrition status of the target population, both malnourished and non-malnourished children were incorporated in this study. Parents were asked to provide information about the determinants (parental age) and nutritional status of children. These two populations, children and their parent(s) are involved in the study.

3.2 Data collection

To set up a database, the collection of data was done by conducting questionnaires and collecting Mid Upper-Arm-Circumference (MUAC) measurements. Assessment of malnutrition took place by measuring the Mid Upper-Arm-Circumference (MUAC) of the child. This method was used because it was impossible to obtain weight and height information through the health cards of the children. Most of the time, mothers forgot their child's health cards or the information was not up-to-date. The standards, a cutoff point of 115 mm for MUAC was used to determine severe acute malnutrition. Malnutrition was dichotomized and defined as YES or NO in cooperation with assistant researchers, who summarized the questionnaires administered in the different health clinics in Plateau State. Participants who were able to speak English were responded to the questionnaire by assistant researchers. The dependent variable of this study is children's nutritional

status. The independent variable is parental age, it was categorized into three groups (1) low-level, (2) mid-level, and (3) high-level. Paternal age level was measured by asking the last completed level of age via the mother. Ages between 12-18 are low level, 19-35 middle level 36 and above High level. Several possible confounding variables might influence the association between parental age and child nutrition status. Household income, Employment of the mother, Employment of the father, Child's age in months, Education of th mother/father

3.3 Method of Data Analysis

When all data was collected, both the categorized determinant 'the parental age' and the dichotomized variable 'nutritional status of the children' was analyzed by a Pearson product-moment correlation. This analysis was done with SPSS version 23.

4.0 RESULTS

4.1 Results of Hypotheses Testing

Hypothesis One: Parental age in Plateau state does not have any significant effects on the nutrition status of children.

Table 1: Pearson Product moment Correlation (r) of the relationship between parental age and children nutritional status

Variable	$\bar{X}$	SD	N	r-cal.	A	P	Decision
Parental age	2.30	1.190					
			200	.863	0.05	.000	Significant
Children Nutri. Status	1.36	0.48					

$p < .05$

The findings from Table 1 indicated that there is a significant positive relationship between parental age and children's nutritional status in Plateau state. Thus, the Ho has been rejected since r (200 = .863, p = .000) which implies also that the probability value (p) is less than the level of significance (0.05) used for statistical decisions. The positive nature of the relationship here implies that most parents that married early were not adequately prepared for parenthood hence they could not provide the nutritional requirements for their children.

Hypothesis Two: The parental education qualification in Plateau state does not have any significant effects on the nutrition status of children.

Table 2: Pearson Product moment Correlation (r) of the relationship between parental education qualification and the nutrition status of children

Variable	$\bar{X}$	SD	N	r-cal.	A	P	Decision
Parental Edu. quali.	1.8	1.06					
			200	.693	0.05	.000	Significant
Children Nutri.Status	1.43	0.425					

p< .05

Table 2 showed that r (200 = .693, p = .000), which means that p<.05 and Ho has been rejected. This implies also that there is a significant positive relationship between parental educational qualification and the nutritional status of children in Plateau State, Nigeria. That as parents acquired more educational qualifications, the more he or she gets aware of food and their nutritional values that can provide a well-balanced diet for children. Educated parents are also aware of the benefits of a balanced diet for children's growth and development.

4.2 DISCUSSIONS

The recent economic recession has contributed to the fall in nutritional status in most households. The study reveals that there is a significant positive relationship between parental age and children's nutritional status in Plateau state. These findings agreed with the work of Yu et al. (2016) which concluded that the effect of low maternal age on child height restriction from 0 to 11 months occurred in half the countries studied after adjusting for confounders. Poorer growth continuing after 24 months in children of younger mothers was observed in all regions but needs further research to determine the causes. The effects were about double (in stunting prevalence terms) in Africa, where there was an increase in 10 ppts in stunting for children of young mothers. Most parents that had early marriage were not financially buoyant to provide adequate nutritional requirements for their children, especially in rural areas. Hypothesis two shows that there is a significant positive relationship between parental educational qualification and the nutritional status of children in Plateau State, Nigeria. This is because educated parents are aware of varieties of food that will meet the nutritional requirement of children than parents that are illiterates. These findings agreed with the work of Umapathi (2008) which concluded that the height-for-age of children (a measure of chronic under-nutrition)with the most educated mothers in the participating villages improves by 0.141 SD and by 0.323 SD after five and eight years of program operation, respectively. The heterogeneity in effects on weight-for-age is less stark but statistically significant: impacts are greatest for the most educated subgroup. For the group with no schooling, the impact is not statistically significant for any time.

5.1 CONCLUSIONS

Concerning the main question of the research: What is the impact of parental age on children's nutrition status in Plateau State? and the hypothesis, which states that Parental age in Plateau State does not have a significant relationship with the nutrition status of children. Low maternal age was

associated with low children nutritional status An increased maternal age level, mid and high age level decrease the chance of child malnutrition. This association is influenced by income, educational level of the father, and age of the child. Paternal education was positively related to child nutrition status based on the results of this research. This is because educated parents are aware of varieties of food that will meet the nutritional requirement of children than parents that are illiterates. The results suggest that the infants of mothers below 18years of age should receive particular attention, in Plateau State

5.**2 Policy implications**

The implications of these findings for policy can be viewed in several ways.

First, preventing child marriage and reducing teenage pregnancy are important for many reasons. Among the strategies that should be considered and that are effective are

1) Empowering girls with information, skills, and support networks;

2) Educating and mobilizing parents and community members;

3) Enhancing the accessibility and quality of formal schooling for girls; 4) offering conditional cash transfers economic and other types of incentives for girls and their families to remain in school; and

5) Fostering an enabling legal and policy framework to check early marriage.

5.3 Limitation of the Study

This study had some limitation, this limitation include;

Sample used: The sample of 200 participant used was inadequate, in and ideal situation the sample should be 10% of the population.

Questionnaire administered: The questionnaire administered to the participants suffered some setbacks as most participants (Mothers) cannot read and write in English especially in rural areas. Interview could have been the good option.

Method of Data Analysis and Results: The Pearson product moment was used for the data analysis and result presentations with the aids of SPSS software. There are other techniques that could be used like logistic regression, t-test and multiple regressions with different software like E-view, STATA and Smart PLS.

5.4 Suggestion for further study

Based on the limitation of the study above, I suggested that the following study can be carry out. An Empirical Analysis of Parental Age on Child Nutritional Status in Plateau State using large sample, interview, multiple regression with the aid of STATA software

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