

Impact of Parents' Educational Status on Infant Mortality in Wukari Local Government Area of Taraba State

Ameh Sunday Ojonugwa¹, Geoffrey Nanbal Shipurut², Gana Chuseh Damian³

Federal University Wukari, Taraba State, Nigeria

Sunnyameh2000@gmail.com; geoffreynanbee@gmail.com

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Abstract

Infant survivability remains a critical public health concern, particularly in regions where access to healthcare and essential knowledge about child-rearing practices are limited. Parental education, especially for mothers, has been recognized as a vital tool in improving infant health outcomes. Educated parents are more likely to adopt healthy practices such as exclusive breastfeeding, immunization, and the early recognition of danger signs in infants. This study examines the impact of parents' educational status on infant mortality in Wukari Local government area of Taraba state. The paper used a descriptive, cross-sectional survey research design. A sample size of 400 respondents was selected from the total population of 374,800 using the Tare Yamane formula. Questionnaires were distributed to 400 respondents who were randomly selected across the wards in Wukari LGA. Interviews were also conducted with six key informants to complement the data gathered from the questionnaires. Responses from the questionnaires were analyzed using descriptive statistics. Quantitative data were analyzed while outlining the key point presented by the key informant. The study revealed that Infant mortality rates are positively correlated with parents who have neither formal nor secondary education, indicating that low levels of education may be a

contributing factor to lower infant health outcomes. The study recommended that increasing access to high-quality education, especially for women, through community programs and adult literacy initiatives is essential to giving parents the information they need to make better health decisions and take better care of their children.

Keywords: Parents, Education, Infant, Mortality

INTRODUCTION

The infant mortality rate is a global phenomenon that has been of concern globally. Countries worldwide use infant mortality as an indicator of development, society's living standard and socioeconomic well-being (Kiross, Chojenta, Barker, Tiruye & Loxton, 2019). This phenomenon is not restricted to any region, race or religion. Both developing and developed countries are experiencing a significant prevalence of infant mortality (UNICEF, 2014). For example, infant mortality remains an important public health concern in Europe, with approximately 1.4 million infant deaths occurring annually (World Health Organization, 2020). At the end of the Millennium Development Goals in 2015, despite the policy support provided during this period, 4.5 million infant deaths occurred globally; and most of these deaths were in developing countries. Africa has the highest infant mortality rate of all the regions of the world (WHO, 2018). According to the World Health Organization report in 2015, the global infant mortality rate was 32 per 1000 live births compared to the Sub-Saharan Africa region rate of 56 per 1000 live births (Kiross et al., 2019).

However, over the past decades, significant improvements in infant health have been made with rates of infant mortality falling from 10.9 infant deaths per 1,000 live births in 1983 to a record of 5.8 infant deaths per 1,000 births in 2019 (Okui, 2023). Even though mortality rates have declined, substantial differences exist across socioeconomic and racial/ethnic groups. For instance, infants born to mothers with less than 12 years of schooling are approximately twice as likely to die than are infants born to mothers with 16 or more years of education (Singh and Kogan 2017; RWJF America's Health Starts with America's Children 2018). Similarly, infants born to mothers with 12 years of education (high school degree) and to mothers with 13-15 years of education (some college), have mortality rates

that are 1.8 and 1.4 higher than those of infants born to mothers with 16 or more years of education (RWJF America's Health Starts with America's Children 2018).

Thus, parents' education significantly determines infant health outcomes (Choudhury, 2015). Maternal education leads to higher use of the modern health care system. Mothers with higher education levels are more likely to make decisions on personal illness control which helps prevent premature deaths and increases the autonomy and empowerment of women concerning health care and decision-making (Aslam and Kingdon, 2012). Also, educated women have higher levels of physical mobility which is further associated with their uptake of antenatal care and treatment seeking for a sick child (Choudhury, 2015).

Thus, education for parents is very vital in improving the survivability of the infant. When the parents of an infant are literate, they can access vital health preventive information that is essential in decreasing the probability of infant or child mortality (Keats 2016). In a similar vein, several scholars (Ayenigbara & Olorunmaye 2016, Keats 2016) have studied Nigerian belief systems around newborn mortality and have identified cultural beliefs as one of the causes contributing to the country's high infant mortality rate. The research by Ayenigbara and Olorunmaye (2016) indicated that mothers, instead of seeking prompt medical attention to treat their infants, rely on cultural beliefs about spirits, witchcraft, and God's will to either engage in certain cultural practices that can increase the risk of their children becoming ill or to explain their infants' poor conditions. Oftentimes, available information on the cause of infant death in Nigeria is misleading, resulting in confusion and a high infant mortality rate (Woodruff, Darrow & Parker, 2015). To solve this problem, the study seeks to know the level of education of parents in Wukari, and how it contributes to infant mortality.

Literature review

The value of children to their parents in the form of social capital and their consequent translation into human capital, all else held constant, is necessary for economic growth and development. The hope of children becoming human assets has motivated parents and society to demonstrate their commitment to children's development through enduring the challenges and cost of bearing and rearing children. Since children are considered as assets, they are equally vulnerable, thus requiring special care and attention for their survival. As proof of the world's commitment to children's rights, in September 2000 the United Nations (UN) sanctioned Millennium Development Goal (MDG). As part of a continuum,

the Sustainable Development Goal (SDG) which has it that “by 2030 we should reduce the global maternal mortality ratio to less than 70 per 100,000 live births” and “end preventable deaths of new-born and children under 5 years of age” was sanctioned in September 2015 by the UN (Amega, 2020).

Evidence from UNICEF (2018) indicates that across the globe, more quality of among children has decreased substantially, yet in 2017, the number of children and young adolescents who died is estimated at 6.3 million. As many as 85% of these deaths were five years old and below. Most of these deaths continue to occur in Sub-Saharan Africa (SSA). For instance, from 1990–2017, there was a 58% decline in the under-five mortality rate in SSA. Nonetheless, in 2017, the region recorded 76 deaths per 1,000 live births. This implies that, currently, regarding mortality rates, the region has the highest scores in the world. The main objective of this study was to investigate whether empowering a mother through education correlates with the probability that their child will survive. (Okui, 2023).

Several studies in developing countries have revealed that infant mortality is largely correlated with maternal education, suggesting that maternal education might be associated with the reduction of infant mortality. Kiross et al. (2019) in employing systematic review and meta-analysis examined the impact of different levels of maternal education on infant mortality in Ethiopia. An I-square test and a funnel plot were employed to examine possible heterogeneity and publication bias respectively. The authors noted that attending primary education was associated with a 28% reduction in the odds of infant mortality compared to those infants born to illiterate mothers. Besides, they found that attending secondary education and above was correlated with a 45% reduction in the odds of infant mortality as opposed to those infants born to illiterate mothers. Other studies have also confirmed that maternal education is one of the most important factors that have an association with infant mortality; educated mothers are also likely to carry out key components of newborn care such as weighing the infant at birth.

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According to Abuqamar, Coomans and Louckx (2011), maternal education is one of the most important determinants of infant mortality. Education is proposed to increase a mother's knowledge of healthcare practices related to contraceptive utilization, nutrition, hygiene and disease prevention. Education is also an important determinant of social and economic development and is strongly associated with various socioeconomic measures such as lifestyle, income, and fertility for both individuals and society.

Educated mothers have been found to use information more effectively when caring for children and tend to seek appropriate health care more effectively than mothers who are not educated (Abuqamar, et al., 2011). Research conducted in Nigeria showed that education has also been found to enable mothers to be more autonomous, to resist harmful traditional influences and practices, and to make economic decisions to spend more on caring for children (Caldwell, 1999).

Furthermore, maternal education increases women's involvement in family decisions and increases demand for health services such as antenatal care utilization and institutional delivery. Educated mothers are also likely to carry out key components of newborn care such as weighing the infant at birth and not giving a prolateral feed (Shahraki, Agheli, Arani & Sadeghi, 2016). Maternal education is also more likely to generate income for the family and increase total family resources [19]. This may be through employment, as educated women are more likely to have paid work than uneducated women (Shahraki, et al., 2016).

According to Keats (2016), women with higher levels of education are probably wealthier and have better occupations. People with less education typically work in the unofficial economy, whereas those with more education are paid more in the formal sector. Similarly, education can change perceptions of contemporary health care by promoting acceptance of modern medicine and its logical explanations of illness rather than conventional methods. Also, through preventative care, education may support individual sickness control.

Based on data from a study conducted in India by Basu and Stephenson in 2005, women who have completed their primary education are more likely to take various personal illness

control measures, such as getting their child's cough and fever under control, getting prenatal care while pregnant, and getting prenatal care in the first trimester. In Uganda, children of better-educated moms are more likely to get vitamin A supplements and vaccinations to protect against measles, diarrhoea, and blindness (Keats 2016).

Additionally, through increased access to healthcare facilities and proper usage of sanitation and hygiene practices at home, mothers' educational attainment may have an impact on environmental factors. Mothers with greater education are more effective in lowering the incidence of diarrheal illnesses (Hatt & Waters, 2016). Furthermore, women who have completed more schooling are more likely to move to areas with improved amenities and easier access to healthcare facilities. Similarly, education could make it easier to learn about health. Education is linked to healthy pregnancy behaviours and an understanding of contraceptive techniques and how to use them more effectively (Grossman, 2017). The degree of education a mother has may present new chances for independence and empowerment in the home. Women's relative status in the home has been demonstrated to benefit from higher levels of female education. According to data from Ethiopia, for example, women's involvement in household decision-making is positively influenced by education (Behrman, 2015).

Increasing the survivability of the baby or child requires education, particularly for the mother. Being literate allows parents to obtain important health preventive knowledge, which is critical in lowering the likelihood of infant or child death. The low rate of child death can be attributed to the very limited number of marriages in which the woman makes all of the childcare decisions and is better educated than her husband. Rather than better nutrition and lower childhood morbidity, medical intervention programs and widespread decreases in exposure to infectious diseases may have contributed to the decline in newborn mortality in sub-Saharan Africa.

Theoretical Framework

Social Determinants of Health (SDOH) Theory

The Social Determinants of Health (SDOH) theory emphasizes how non-medical factors, such as education, income, and living conditions, influence health outcomes. Emerging in the late 20th century and gaining prominence through the WHO's initiatives, the theory assumes that health is shaped by social conditions, inequities drive disparities, and improving these determinants can enhance health outcomes. It recognizes that health

results from the interplay of multiple factors, with education being a critical determinant (Porter, 1997).

In Wukari Local Government Area, parents' educational status significantly affects infant mortality. Educated parents are more likely to access healthcare, practice better health-seeking behaviours, and provide safe environments for their children. Education equips parents with knowledge about immunization, nutrition, and hygienic practices while enhancing their economic stability, enabling better access to resources essential for infant survival. Furthermore, educated mothers, in particular, are empowered to make informed decisions, which positively influence their children's health outcomes.

SDOH theory provides a holistic framework for understanding the impact of education on health disparities, making it highly relevant for addressing infant mortality in Wukari. Its strengths lie in its comprehensive perspective and actionable insights for policy interventions. However, challenges include the complexity of implementing multi-sectoral strategies and difficulties in establishing direct causality between determinants and outcomes. Despite these limitations, the theory offers a robust approach to reducing infant mortality by focusing on improving educational access and related social conditions.

METHODS

The study used a cross-sectional descriptive survey research design. Data was collected from 400 respondents using a multiple-stage sampling method across six wards in Wukari LGA. The study utilized structured questionnaires and in-depth interviews to gather data, while statistical analyses included descriptive statistics and Pearson product-moment correlation to test the study's hypotheses. The Pearson Correlation was used to test the stated hypotheses at a 0.05 level of significance with the use of SPSS (Statistical Package for Social Sciences).

RESULTS

This part of the study discusses the findings generated from the study using the data obtained from the questionnaire. The findings are logically discussed as follows:

Table 1. Respondents' rating of infant mortality in Wukari LGA N=396

Rate	Frequency	Percentage
Low	110	27.8
Average	139	35.0
High	147	37.1

Source: Field Survey, 2023

In the table above, the respondents rated the occurrence of infant mortality in Wukari LGA. A significant majority of the respondents held that infant mortality was average (37.1%) n=147. Another considerable number maintained that; it was high (35.1) n=139. Only (27.8%) n=110 said it was low. Given this, infant mortality calls for concern in Wukari LGA.

Educational Status of Parents and Infant Mortality

Table 2: Impact of Educational Status on Infant Mortality in Wukari LGA N=396

Level of education	SA	A	U	D	SD	Mean	Std Dev.
No formal education	188	112	16	70	10	4.01	1.205
Primary education	88	122	54	98	34	3.33	1.297
Secondary education	174	93	58	40	31	3.86	1.295
Tertiary education	125	115	71	56	29	3.63	1.261
Impact							
Increased infant mortality	88	84	37	114	73	3.00	1.460

Source: Field Survey, 2023

In the table above, the respondents rated the level of parents' education in Wukari. All the associated levels of parents' education that were highly susceptible to infant mortality in

Wukari were given a mean score above the average (2.5). Parents with no formal education (Mean=4.01, Std=1.205) were more susceptible among others. This was succeeded by parents with secondary education (Mean=3.86, Std=1.295). Also, parents with tertiary education and primary education were given 3.33 and 3.63 mean scores respectively. However, the respondents held that the education of parents contributed to increased infant mortality (Mean=3.00, Std=1.460) amid high variability of opinion. All the associated standard deviations were not less than one. This pointed to the presence of high variability of opinion concerning parents' education and infant mortality in Wukari. This implies that infant mortality was pronounced across parents regardless of their level of education.

Findings from in-depth interviews complemented the quantitative data on the impact of parents' education on infant mortality in Wukari.

A male respondent, aged 38, from the Hospital ward in Wukari, expressed that, infant mortality has no boundary since irrespective of parents' education, the infant could die. But one thing I know is that, parents with formal education whether at the secondary or tertiary level are always careful with their infant's health. This could start right from antenatal. And this does have an impact on the health of the infant and in the long run their chances of dying. You know, we are Africans who hold our religious beliefs so high. Whether one is educated or not, we believe infant death is divine. Even with this belief, those who are educated seem to be more inclined to an orthodox health system for their infant's health needs. As such, there could be less infant mortality among parents who are educated (Male respondent in Hospital ward 06/12/2023).

Another respondent, a female, aged 40 residing in the main market square Wukari, shared her perspective on the impact of education on infant mortality in the region. She spoke earnestly, "Education has been a beacon of change in our community, especially for mothers like me. With knowledge comes the ability to make informed decisions about our children's health. I have witnessed the positive effects of understanding proper prenatal and postnatal care, recognizing danger signs, and accessing essential healthcare services. As more women in Wukari receive education, we collectively contribute to lowering infant mortality rates. Education empowers us to provide a healthier and safer environment for our children. It's not just about academic knowledge; it's about practical, life-saving information that transforms our roles as caregivers. I believe that

investing in education is a powerful step towards securing a brighter and healthier future for the next generation in our community."(Female respondent in Market Square 15/12/2023).

Another respondent, a male, aged 35, a GRA Wukari resident, shared his perspective on the impact of education on infant mortality in the area. He reflected, "I've seen positive changes in our community as more people gain access to education. It's not just about reading and writing; it's about understanding how to take care of our children. Education opens our eyes to the importance of vaccinations, hygiene, and proper nutrition. I believe that with increased education, parents become more proactive in seeking medical help when needed, and that makes a significant difference. We are gradually witnessing a decline in infant mortality rates, and I attribute it to the growing awareness that education brings. It's a hopeful sign for the future of our community, and I'm optimistic that continued education will further improve the well-being of our infants."(Male respondent in GRA 15/12/2023).

Test of Hypotheses

Parents’ level of education has no significant relationship with infant mortality in Wukari.

Table 3: Correlation Matrix of Parents’ Education and Infant Mortality

S/N	1	2	3	4	5
Infant Mortality	1.000	.101*	-.002	.144**	.045
No formal education		1.000			
Primary education			1.000		
Secondary education				1.000	
Tertiary education					1.000

**Correlation is significant at 0.01 levels (2 tailed)
*Correlation is significant at 0.05 levels (2 tailed)

The table above revealed the correlation matrix of parents’ education and infant mortality rate. As seen in the table, there was a low positive but significant relationship between parents with no formal education and infant mortality ($r=.101$, $P<.05$). Also, parents with secondary education had a low positive but significant relationship with infant mortality

($r=.144$, $P<.01$). However, parents' primary education had low negative relationship with infant mortality ($r=-.002$), and parents' tertiary education ($r=.045$). This suggested a significant relationship between parents' level of education and infant mortality hence, the null hypothesis is rejected.

DISCUSSION

The analysis reveals intriguing insights into the relationship between parents' education levels and infant mortality rates. The correlation matrix indicates distinct patterns: parents with no formal education and those with secondary education exhibit low positive but significant relationships with infant mortality, implying that higher rates of infant mortality are associated with parents lacking formal education or possessing only secondary education. This suggests that lower levels of education among parents may correlate with increased infant mortality rates in the Wukari Local Government Area. Moreover, the finding that parents with primary education display a low negative relationship with infant mortality while parents with tertiary education show a slight positive correlation adds complexity to the analysis. The negative relationship with primary education suggests a potential protective effect against infant mortality, albeit weak. Conversely, the positive correlation observed with tertiary education, though slight, contrasts with the expectation of improved health outcomes associated with higher education levels. These nuances hint at the multifaceted nature of the relationship between parental education and infant mortality, suggesting that other factors may interact with education levels to influence infant health outcomes. The indications of the relationship between parental education and infant mortality are significant for understanding the socio-economic determinants of child health in the Wukari Local Government Area. Factors such as limited access to healthcare services, inadequate health literacy, and socio-economic instability associated with lower educational levels could contribute to higher infant mortality rates among these groups. This finding aligned with the research by Ojikutu (2018) which has shown that infant mortality is a major problem in Nigeria and has been linked to factors such as inadequate health facilities, lack of financial capacity, and lack of access to appropriate medical care.

Recommendations

- i. Efforts should be made to improve access to quality education for parents, particularly women, through community-based programs and adult literacy

initiatives. Educating parents equips them with the knowledge needed to adopt better health practices and make informed decisions about their children's well-being.

- ii. Government and non-governmental organizations should implement widespread health awareness campaigns focusing on prenatal and postnatal care, proper nutrition, immunization, and hygiene. These campaigns should target communities with high infant mortality rates and use culturally sensitive approaches to reach diverse groups effectively.
- iii. The availability and quality of healthcare services in Wukari LGA should be improved by increasing the number of healthcare facilities, providing adequate medical supplies, and training healthcare professionals. Mobile health services could also be introduced to reach rural and underserved areas.

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