

DETERMINANTS OF CHILDHOOD MORTALITY IN NORTHERN NIGERIA: INSIGHTS FROM HOSPITAL DATA

BY

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Abstract

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Introduction

Throughout most of human history, infectious diseases have been the leading cause of death among both children and adults, often claiming their lives before they could succumb to other causes. The child mortality rate is globally considered a fairly sensitive indicator of societal development because as the standard of living goes up, so does the average level of health in a population and the health of babies typically improves earlier and faster than at other ages.

Available data shows that the leading causes of under-five deaths worldwide and within sub-Saharan Africa are preventable infectious diseases such as pneumonia, diarrheal diseases, neonatal complications, malaria and malnutrition. Within sub-Saharan Africa, malaria accounts for 20% Malaria, followed by Pneumonia (16%), Diarrheal Diseases (12%) and Neonatal Complications (28%) (United Nations Children Fund (UNICEF) (2018).

Worldwide, 16087 infants die every day, with 10 occurring per minute. However, there are sharp differences in occurrences between the developed and less developed countries. Thus, while there are 197 infant deaths per day and 0.1 per minute in the developed countries, it is 14,890 deaths per day and 10 per minute in the less developed countries (<http://www.prb.org/pdf14/2014-world-data-sheet-eng.pdf>). Data from Nigeria Demographic and Health Survey (NDHS), 2018 indicate that under-five mortality rates are still high in Nigeria in spite of the gradual decline over the last 40 years from 193 deaths per 1000 live births in 1990 to 132 deaths per 1000 live births in 2018. (National Population Commission (NPC) and ICF International, 2019).

The data also show that under-five mortality rates are higher in Northern than Southern Nigeria. The North-West records the highest rate of 187 deaths per 1000 live births, followed by the North-East and the North-Central with 134 and 95 deaths per 1000 live births respectively, while the South-East, South-South and South -West record 75, 73, and 62 deaths per 1000 live births respectively. (NPC and ICF International, 2019). Fagbamigbe et al., (2020) further show that mortality rates are influenced by demographic, socioeconomic and cultural factors. Other studies have highlighted poverty, inadequate healthcare infrastructure, poor immunization coverage, and malnutrition as significant contributors to high childhood mortality in the region

At present, a lot of information on morbidity and mortality is derived mainly from clinics and hospitals. Unfortunately, such information on the incidence of most of these childhood diseases and mortality represent only a small proportion of all illnesses and deaths, because many cases do not seek medical attention nor report deaths.

This study intends to ascertain the major diseases that influence childhood mortality and at the same time ascertain the demographic, socioeconomic and cultural factors determining childhood mortality in the study area. Specifically, the research intends to address the following questions: what are the demographic, socio-cultural and economic characteristics of under five children and their mothers or caregivers in the study area? What are the major diseases which influence childhood mortality in the study area? What are the demographic, socio-cultural, economic and environmental factors that influence childhood mortality in the study area?

The objectives of the study were to describe the demographic, socio-cultural and economic characteristics of under five children and their mothers or caregivers in the study area, to identify the major diseases which influence childhood mortality in the study area and to determine the demographic, socio-cultural, economic and environmental factors that influence child mortality in the study area.

A proper understanding of the determinants of childhood mortality in the study area is very crucial to the success of any policy or the health care intervention that may be initiated. Furthermore, it can help in targeting scarce resources for public health interventions to achieve Sustainable Development Goals, SDG-3 which is to ‘ensure healthy lives and promotes well-being for all at all ages’ (sdgs.un.org).

Theoretical Framework and Literature Review

The study was guided by a combination of the theoretical frameworks of Mosley and Chen (1984) ‘proximate determinants framework’, the ‘Social determinants of Health’ framework (Commission on Social Determinants of Health, 2008) and Bronfenbrenner (1979) ‘ecological systems theory’. These frameworks emphasize the intricate interactions between individual, household and environmental factors which influence childhood mortality.

Studies have shown that factors that influence childhood mortality may be demographic, cultural, socio-economic and environmental and health-related (Mosley and Chen, 1984; Woldemicael, 2007, Iyalomhe & Iyalomhe, 2016 and Mundi et al, 2022). Kanmiki, et al., (2014) in a study of the Socio-economic and demographic determinants of under-five mortality in rural northern Ghana revealed that children in polygamous households were at higher risk of mortality than those in monogamous households due to poor access to resources.

United Nations Environmental Programme (UNEP) (2018) notes that no group is vulnerable to environmental harm than children such that about 1.5 million deaths occur to children under age five as a result of the combine effects of air pollution, water pollution and exposure to toxic substances. Some of the environmental risk factors of childhood diseases include geographical location, air pollution, exposure to hazardous chemicals, unsafe drinking water, poor sanitation and hygiene amongst others.

This study was limited to the northern part of Nigeria, consisting of the North-East (Adamawa; Gombe), North-West (Kebbi; Kaduna), and North-Central zones (Benue; Kwara and FCT). The mixed research method was used to acquire data. The quantitative data were sourced from a review of medical records of 46,767 children aged less than 5 years, over a 10- year period (2007-2016) from eight hospitals. Also, questionnaire was administered to 1536 women aged 15-49 years who were selected following a multi-stage sampling. For the qualitative data, interviews were conducted with community leaders, selected medical personnel, women leaders and religious leaders, in addition to 16 Focus group discussions with men and women participants. The study was conducted in compliance with ethical standards of voluntary participation, anonymity, confidentiality, and no harm to study participants. Also consent was sought from the authorities of the sampled health facilities. The data collected were analyzed with Statistical Package for the Social Sciences (SPSS) version 26.

Findings

Majority (41.9%) of the children were aged 1-4 years followed by those aged less than one month old (32.5%) with variations in zones. Overall, majority (57.1%) of the children lived in urban areas. Generally, a higher percentage (59.5%) of the children were from monogamous families. Overall, the children were largely from families with sizes of less than three.

The dominant (33.9%) age group of mothers (of the children) was 25-29 years. The marital status and ethnicity of the mothers were not captured in the hospital records of the children. Most of the mothers attained secondary education (37.3%). The majority of them were Christians (52.2%), and majority of the respondents were full-time housewives (42.7%). The largest group (38.4%) of mothers earned between 1,000 to 10,000 naira on average monthly.

The results show that under-five mortality is still high in the region with about one third of the reported cases being neonates. The major diseases resulting in under-five mortality in the region were malnutrition and yellow fever (26.9%) each, neo-natal sepsis (19.4%) and pneumonia (14.2%). The results further show childhood mortality was higher (56.0%) among infants. Similarly, there were variations in mortality based on the children's sex, place of residence, type of family, family size, birth order and mother's age.

The results also show variation in childhood mortality based on maternal demographic, socio-cultural and economic characteristics across the zones (north-central, north-east and north-west) in the region. The most perceived environmental risk factor for childhood diseases, with its attendant consequences was indoor and air pollution. These results are in line with previous researches that highlight the influence of socio-economic, cultural and environmental factors on childhood mortality across sub-Saharan Africa (Woldemicael, 2007, UNEP, 2018, Ezech et al., 2021).

Conclusion

The study concluded that the determinants of childhood diseases are multifaceted. Insights from hospital records suggest that it is imperative to factor in caregivers' characteristics and behaviour in any future policy and programme to reduce under-five mortality in the region

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