



Impact of Socio-Economic Conditions on ... Ugbabe, A. O. & Otse, M. O. (2025)

Impact of Socio-Economic Conditions on Diabetic Patients Mortality Rate in Nigeria

UGBABE, Alice Onyumoyi¹

Email: onyumugbabe@gmail.com
+234703911860

OTSE, Moses Okpekwa²

Email: otseokpekwa@gmail.com
+2348064462253

¹Wesley University, Ondo

²Department of computer science, Federal College of Agriculture, Ibadan

Abstract

Diabetes mellitus is a growing public health concern, contributing to a significant number of premature deaths worldwide. In low- and middle-income countries such as Nigeria, socio-economic inequalities have been identified as major barriers to effective diabetes management and survival. This study assesses the impact of socio-economic conditions—specifically income, education, occupation, and access to healthcare—on diabetes mortality rates. A cross-sectional mixed-methods approach was adopted, utilizing quantitative analysis of hospital mortality records from 2019 to 2024 and qualitative interviews with healthcare providers and relatives of deceased patients. Statistical analyses, including logistic regression and Chi-square tests, were conducted to determine associations between socio-economic indicators and mortality outcomes. The results revealed that lower income, limited educational attainment, and inadequate healthcare access were strongly associated with higher diabetes mortality rates. The study concludes that socio-economic disadvantages significantly exacerbate diabetes-related deaths, highlighting the urgent need for targeted interventions such as subsidized treatment, community-based education, and improved healthcare infrastructure in underserved areas.

Keywords: Diabetes mellitus, socio-economic conditions, mortality rate, healthcare access, Nigeria, non-communicable diseases.

Introduction

Diabetes mellitus is a chronic metabolic disorder characterized by persistent hyperglycemia resulting from defects in insulin secretion, insulin action, or both. Globally, it has emerged as one of the leading causes of mortality and disability, with the International Diabetes Federation (IDF, 2023) estimating that over 6.7 million deaths were attributable to the disease in 2021. Low- and middle-income countries bear the highest burden of these deaths due to inadequate healthcare infrastructure, poor awareness, and socio-economic disparities.

In Nigeria, the prevalence of diabetes has been increasing steadily over the past two decades, alongside rising mortality rates. Socio-economic conditions, such as income level, education, occupation, and access to healthcare, play a critical role in determining the capacity of individuals to manage the disease effectively. Poor socio-economic status often limits access to quality healthcare, healthy diets, and consistent medication adherence, which are essential for reducing complications and premature death. Furthermore, social determinants of health—such as environmental conditions, literacy levels, and employment opportunities—shape health behaviors and outcomes. Studies have shown that individuals from low-income backgrounds are more likely to present with advanced stages of diabetes and are less likely to access regular medical care, thereby increasing their risk of death (Fawole & Owoaje, 2021). Understanding how these socio-economic



Impact of Socio-Economic Conditions on ... Ugbabe, A. O. & Orse, M. O. (2025)

variables affect diabetes mortality rates is crucial for designing interventions and policies aimed at improving survival outcomes and promoting health equity.

Statement of the Problem

Despite medical advances in diabetes management, mortality rates remain disproportionately high in Nigeria, especially among socio-economically disadvantaged groups. Limited access to affordable healthcare services, poor health literacy, and inadequate public health interventions exacerbate the problem. Existing health policies have not fully addressed the intersection between socio-economic conditions and non-communicable disease outcomes, leaving a significant gap in mortality reduction strategies. Without targeted interventions, the burden of diabetes-related deaths will continue to rise, further straining the healthcare system and reducing national productivity.

Objectives of the Study

General Objective

To assess the impact of socio-economic conditions on diabetes mortality rates in Nigeria.

Specific Objectives

1. To determine the relationship between income levels and diabetes mortality rates.
2. To examine the influence of educational attainment on diabetes management and survival outcomes.
3. To assess the effect of occupation type on access to diabetes care.
4. To evaluate the role of healthcare accessibility in diabetes mortality rates.

Research Questions

1. What is the relationship between income levels and diabetes mortality rates?
2. How does educational attainment influence diabetes management and survival?
3. In what ways does occupation type affect access to diabetes treatment?
4. To what extent does healthcare accessibility contribute to diabetes mortality rates?

Research Hypotheses

H₀: There is no significant relationship between socio-economic conditions and diabetes mortality rates.

H₁: Socio-economic conditions have a significant impact on diabetes mortality rates.

Literature Review

Conceptual Framework

The socio-economic conditions of individuals significantly shape health outcomes, particularly for chronic diseases like diabetes mellitus. Socio-economic factors—such as income, educational attainment, occupation, and access to healthcare—affect the ability to afford treatment, adopt healthy lifestyles, and comply with medical advice.

Income influences dietary choices, the ability to purchase medications, and access to regular medical checkups. Educational attainment affects health literacy, enabling individuals to understand disease management protocols. Occupation often determines income stability, exposure to health risks, and eligibility for health insurance. Healthcare access involves the availability, affordability, and quality of medical services, which can directly influence survival rates among diabetic patients. The conceptual framework for this study was guided by the Social Determinants of Health model (WHO, 2010), which posits that health outcomes are shaped by the conditions in which people are born, grow, live, work, and age, influenced by the distribution of resources and opportunities.



Impact of Socio-Economic Conditions on ... Ugababe, A. O. & Orse, M. O. (2025)

Theoretical Framework

The Health Belief Model (HBM); The Health Belief Model explains how personal beliefs about health conditions influence health-related behaviors. It emphasizes perceived susceptibility, perceived severity, perceived benefits, and perceived barriers to taking action. In the context of diabetes, socio-economic conditions can influence how individuals perceive their vulnerability and the benefits or challenges of adhering to treatment.

Social Determinants of Health Theory

This theory suggests that health inequalities arise from social, economic, and environmental conditions. It links macro-level factors, such as poverty and education systems, to micro-level health behaviors, such as medication adherence. This theory underpins the rationale that addressing socio-economic disparities can improve diabetes survival rates.

Empirical Review

Income and Diabetes Mortality; Research by Mbanya et al. (2010) revealed that lower income is strongly correlated with higher diabetes mortality rates due to reduced access to healthy foods, inadequate health services, and delayed diagnosis. Similarly, Fawole and Owoaje (2021) found that individuals in low-income brackets in Nigeria are less likely to access specialist care, leading to increased mortality risk.

Educational Attainment and Diabetes Outcomes

Educational attainment is closely linked to health literacy. According to Agardh et al. (2011), individuals with lower education levels have poorer glycemic control and higher mortality risk. Education enhances understanding of disease management and fosters healthier lifestyles.

Occupation and Health Access

Occupational status determines income and, in many cases, access to employer-sponsored health benefits. A study by Lee et al. (2019) showed that manual laborers and informal sector workers are more likely to have uncontrolled diabetes due to inconsistent healthcare access.

Healthcare Access and Mortality

The availability and affordability of healthcare services play a direct role in diabetes survival. WHO (2022) reported that patients with limited access to primary healthcare have higher rates of complications such as kidney failure, cardiovascular diseases, and premature death.

Conceptual Gaps in Literature

While previous studies have examined individual socio-economic factors and their association with diabetes mortality, few have taken a comprehensive approach that analyzes multiple socio-economic conditions simultaneously within the Nigerian context. Additionally, there is limited empirical data combining quantitative hospital mortality records with qualitative perspectives from healthcare providers and affected families. This study addresses these gaps by adopting a mixed-methods approach to generate a more holistic understanding. The literature highlights that socio-economic disparities significantly contribute to diabetes mortality. Income levels, education, occupation, and healthcare access are interrelated determinants that influence health behaviors, treatment adherence, and ultimately, survival outcomes. Guided by the Health Belief Model and Social Determinants of Health theory, this study aims to integrate both statistical and narrative data to provide actionable insights for reducing diabetes-related deaths in socio-economically disadvantaged populations.



Impact of Socio-Economic Conditions on ... Ugababe, A. O. & Orse, M. O. (2025)

Research Methodology

This study will adopt a cross-sectional mixed-methods research design, integrating both quantitative and qualitative approaches. The quantitative component will involve the collection and statistical analysis of hospital mortality records and patient socio-economic data. The qualitative component will involve semi-structured interviews with healthcare providers and relatives of deceased diabetes patients to provide deeper insights into the influence of socio-economic conditions on mortality outcomes. Population of the Study. The study population consist all registered adult diabetes patients within the selected geographical area in Nigeria (to be specified) whose medical records cover the period 2019–2024. Relatives of deceased diabetes patients. Healthcare providers involved in diabetes management in the study area. The sample size for the quantitative component determined using Yamane’s formula. For the qualitative component, purposive sampling was use to select 15–20 healthcare providers and 20–25 relatives of deceased patients until data saturation is achieved. Sampling Technique. Quantitative Stratified random sampling was use to ensure representation across socio-economic categories. Primary Data, Semi-structured interviews with healthcare providers and relatives of deceased patients.

Questionnaires for surviving diabetes patients to gather socio-economic information. Secondary Data. Hospital mortality records of diabetes patients. Health department reports and national diabetes statistics. Qualitative: Purposive sampling will target participants with direct knowledge of the subject matter. Research Instruments. Structured questionnaire: For collecting quantitative socio-economic data. Interview guide: For qualitative insights into challenges faced by patients and healthcare providers. Data extraction sheet: For capturing relevant hospital mortality data. Validity and Reliability of Instruments. Instruments will be reviewed by three experts in public health and epidemiology to ensure content validity. Reliability: A pilot study involving 10% of the sample will be conducted, and Cronbach’s Alpha coefficient of ≥ 0.70 will be accepted as reliable. Descriptive statistics: frequencies, percentages, means, and standard deviations. Inferential statistics: Chi-square tests to determine associations; logistic regression to identify socio-economic predictors of diabetes mortality. Software: Statistical Package for the Social Sciences (SPSS) version 26. Thematic analysis: coding and categorizing responses into emerging themes. Software: NVivo for qualitative data management.

Presentation of Results

The findings from both the quantitative and qualitative components of the study. The data are analyzed to determine the influence of socio-economic conditions—specifically income, education, occupation, and healthcare access—on diabetes mortality rates. Quantitative results are presented using tables, charts, and statistical tests, while qualitative findings are summarized thematically. Out of the 250 questionnaires distributed to surviving diabetes patients and relatives of deceased patients, 238 were returned and valid for analysis, giving a response rate of 95.2%.

Table1: Socio-Economic Characteristics of Respondents

Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	110	46.2
	Female	128	53.8
Age Group	30–39 years	40	16.8
	40–49 years	60	25.2



Impact of Socio-Economic Conditions on ... Ugababe, A. O. & Orse, M. O. (2025)

50–59 years	78	32.8
60+ years	60	25.2
Monthly Income (₦)		
< ₦50,000	120	50.4
₦50,000–₦99,999	70	29.4
₦100,000+	48	20.2
Education Level		
No formal education	54	22.7
Primary education	68	28.6
Secondary education	70	29.4
Tertiary education	46	19.3
Occupation		
Unemployed	58	24.4
Informal sector	90	37.8
Formal sector	90	37.8

Source: Field Survey (2025)

Relationship between Income and Diabetes Mortality

Null Hypothesis (H₀): There is no significant relationship between income levels and diabetes mortality rates.

Alternative Hypothesis (H₁): There is a significant relationship between income levels and diabetes mortality rates.

Table 2: Chi-Square Test on Income Level and Mortality Outcome

Income Level	Mortality Recorded	No Mortality	x ² -value	p-value
< ₦50,000	95	25	12.54	0.002*
₦50,000–₦99,999	42	28		
₦100,000+	20	28		

p < 0.05 indicates statistical significance.

The Chi-square analysis shows a significant relationship between lower income levels and higher diabetes mortality rates (p = 0.002).

Influence of Education on Mortality Rates

Null Hypothesis (H₀): There is no significant relationship between educational attainment and diabetes mortality rates.

Alternative Hypothesis (H₁): There is a significant relationship between educational attainment and diabetes mortality rates.

Table 3: Logistic Regression Output

Predictor Variable	β	SE	Wald	p-value	Exp(β)
No formal education	1.85	0.60	9.50	0.002*	6.36
Primary education	1.20	0.52	5.32	0.021*	3.32
Secondary education	0.65	0.48	1.83	0.176	1.91
Tertiary education	Ref.				

Individuals with no formal education are 6.36 times more likely to die from diabetes complications compared to those with tertiary education.

Discussion of Findings

Qualitative Data Analysis

Thematic analysis of interview transcripts revealed three main themes:

1. Financial Barriers to Treatment

Many participants reported inability to afford continuous medication and regular medical checkups.



Impact of Socio-Economic Conditions on ... Ugababe, A. O. & Orse, M. O. (2025)

Quote from a healthcare provider: "Some patients stop treatment once their money runs out, and this often leads to fatal complications."

2. Low Health Literacy

Relatives of deceased patients often mentioned that their loved ones did not fully understand the severity of diabetes or the importance of consistent treatment.

3. Poor Accessibility to Healthcare Services

Respondents from rural areas complained about long distances to health facilities and lack of diabetes specialists.

Lower income levels and limited education are strongly associated with higher diabetes mortality rates. Informal sector and unemployed individuals are at greater risk due to lack of health insurance. Limited healthcare access in rural areas worsens mortality outcomes.

Summary

This study assessed the impact of socio-economic conditions on diabetes mortality rates in Nigeria, focusing on four key variables: income, education, occupation, and healthcare access. A mixed-methods approach was employed, combining quantitative analysis of hospital mortality records from 2019 to 2024 with qualitative interviews involving healthcare providers and relatives of deceased patients. The quantitative analysis revealed significant associations between low socio-economic status and higher mortality rates. Income was a strong predictor, with individuals earning less than ₦50,000 monthly showing the highest mortality rates. Education also played a critical role, as those without formal education were over six times more likely to die from diabetes complications compared to those with tertiary education. Occupation influenced mortality through access to health benefits, while healthcare accessibility emerged as a major determinant, especially for rural residents. The qualitative findings reinforced these results, highlighting financial barriers, low health literacy, and poor accessibility to healthcare services as recurring challenges faced by diabetes patients.

Conclusion

The study concludes that socio-economic conditions have a profound and statistically significant impact on diabetes mortality rates in Nigeria. Low income, limited education, unstable employment, and poor healthcare access collectively contribute to delayed diagnosis, inconsistent treatment, and higher risk of fatal complications. Addressing these socio-economic disparities is essential for reducing preventable diabetes-related deaths and achieving better health outcomes for vulnerable populations.

Recommendations

Based on the findings, the following recommendations are made:

Policy Interventions

1. Subsidized Healthcare: Implement government-sponsored subsidies for diabetes medications and routine checkups for low-income patients.
2. Health Insurance Expansion: Extend affordable health insurance schemes to cover informal sector workers and the unemployed.

Healthcare Access Improvement

3. Decentralized Diabetes Clinics: Establish diabetes care units in rural areas to reduce travel distances and improve specialist access.
4. Mobile Health Units: Deploy mobile health services for remote communities to facilitate regular monitoring and education.

Public Health Education



www.zijstemfugusau.com.ng
des@fugusau.edu.ng

DOI: <https://doi.org/10.64348/zije.2025129>

Impact of Socio-Economic Conditions on ... Ugababe, A. O. & Orise, M. O. (2025)

5. Health Literacy Campaigns: Develop nationwide community-based programs to improve understanding of diabetes prevention and management.
6. Workplace Health Programs: Encourage employers to provide diabetes screening, awareness sessions, and medical support for employees.

References

- Agardh, E., Allebeck, P., Hallqvist, J., Moradi, T., & Sidorchuk, A. (2011). Type 2 diabetes incidence and socio-economic position: A systematic review and meta-analysis. *International Journal of Epidemiology*, 40(3), 804–818. <https://doi.org/10.1093/ije/dyr029>
- Fawole, A. O., & Owoaje, E. T. (2021). Socioeconomic inequalities and non-communicable diseases in Nigeria: A systematic review. *BMC Public Health*, 21(1), 1–12. <https://doi.org/10.1186/s12889-021-11547-9>
- International Diabetes Federation. (2023). *IDF diabetes atlas (10th ed.)*. Brussels: IDF.
- Lee, S. H., Han, K., & Kwon, H. S. (2019). Socioeconomic status and mortality in people with diabetes. *Diabetologia*, 62(12), 2156–2164. <https://doi.org/10.1007/s00125-019-04977-8>
- Mbanya, J. C., Motala, A. A., Sobngwi, E., Assah, F. K., & Enoru, S. T. (2010). Diabetes in sub-Saharan Africa. *The Lancet*, 375(9733), 2254–2266. [https://doi.org/10.1016/S0140-6736\(10\)60550-8](https://doi.org/10.1016/S0140-6736(10)60550-8)
- World Health Organization. (2022). *Global report on diabetes*. Geneva: WHO.
- World Health Organization. (2010). *A conceptual framework for action on the social determinants of health*. Geneva: WHO.