



REVIEWER'S REPORT

Manuscript No.: IJAR-58194

Title: Factors associated with diarrhoea among children under five in Guinea: analysis of the 2018 Demographic and Health Survey (DHS-V) data,

Recommendation:

Accept after minor revision

Rating	Excel.	Good	Fair	Poor
Originality			✓	
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer's ID: JPR-Bilqees Hamza

Detailed Reviewer's Report

Overview of the Article

This article, titled "*Factors associated with diarrhoea among children under five in Guinea: analysis of the 2018 Demographic and Health Survey (DHS-V) data,*" provides a comprehensive epidemiological analysis of childhood diarrheal diseases in Guinea. Utilizing a cross-sectional descriptive and analytical framework based on the 2018 Guinea Demographic and Health Survey, the study evaluates a nationally representative sample of 7,951 children under the age of five paired directly with their mothers. The core objective is to identify the socio-demographic, economic, nutritional, and healthcare-seeking behaviors that dictate the prevalence of diarrhea, which remains a primary driver of juvenile morbidity and mortality in resource-limited contexts.

The methodology is statistically sound, relying on multivariable logistic regression to isolate independent variables while controlling for confounding factors. The results reveal critical public health insights: the national prevalence of childhood diarrhea stands at 14.6%, significantly influenced by systemic socio-demographic vulnerabilities and poor coverage of preventive health measures.

Significance and Contributions

The article makes several vital contributions to the field of maternal and child health in Sub-Saharan Africa:

- **Empirical Foundation for Strategic Policy:** By providing updated, stratified odds ratios on localized determinants, the paper bridges an active data gap for public health planners in Guinea.



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It shifts the discourse from broad generalizations about poverty to specific, actionable variables such as media exposure, physical distance to clinical sites, and maternal age cohorts.

- **Methodological Rigor:** The use of a complex survey design framework—accounting for multi-stage stratified area cluster sampling, unequal selection probabilities, and clustering within enumeration areas—ensures highly accurate standard error estimations and confidence intervals, avoiding the inflation of statistical significance.
- **Holistic Epidemiological Paradigm:** The study effectively demonstrates the intersectionality of economic precarity (wealth quintiles), demographic factors (rurality and adolescent motherhood), and behavioral/preventive variables (exclusive breastfeeding and immunization schedules).

The manuscript exhibits multiple notable strengths that reinforce its scholarly validity:

- **Substantial Sample Volume:** The statistical power of the study is robust, supported by a large sample size ($n = 7,951$) that guarantees regional and national representativeness.
- **Clear Conceptual Demarcation:** Risk factors are clearly separated from protective factors using tight confidence intervals that do not intersect with the null value ($aOR = 1$), visually and statistically validating the conclusions.
- **Candid Structural Assessment:** The authors proactively detail the limitations of their work, including potential recall and social desirability biases inherent in maternal interviews, and the fundamental cross-sectional constraint regarding causal inference.

Recommendations for Improvement

While the article is highly structured and academically sound, the following modifications will significantly enhance its technical precision and overall scholarly impact:

1. Refine the Terminology and Visual Representation of Economic Indicators

In the text (Lines 23, 229, and 239), the variable is properly identified as the "household wealth quintile," which is standard for DHS datasets utilizing asset indices. However, in Figure 2 and Figure 4, the label changes to "Household income." Because the DHS calculates a wealth index based on housing characteristics and asset ownership rather than direct monetary income tracking, using "income" is technically inaccurate. All figures, tables, and forest plots must be standardized to read "Household Wealth Quintile" or "Socioeconomic Status" to maintain rigorous data fidelity.

2. Elaborate on the Context of Rotavirus Vaccine Integration

The multivariable analysis identifies full vaccination as a significant protective factor ($aOR = 0.65$; 95% CI: 0.52–0.81) and correctly attributes this partly to the rotavirus vaccine in the discussion (Line 354). The paper would be greatly strengthened if the authors integrated the specific timeline of the



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rotavirus vaccine introduction in Guinea's Expanded Programme on Immunization (EPI). Providing this context will help readers evaluate whether the low full vaccination coverage observed (15.7%) reflects initial rollout challenges or systemic bottlenecks in the healthcare delivery chain.

3. Expand the Discussion on Water, Sanitation, and Hygiene (WASH) Realities

The authors note in the limitations section that detailed data on water quality and precise hygiene practices were unavailable or incomplete in the secondary database (Lines 392, 393). Given that rural residence emerged as the most powerful socio-demographic risk factor ($aOR = 1.45$; 95% CI: 1.20–1.75), the discussion should link this vulnerability to broader, established infrastructure reports from Guinea. Integrating external data from the WHO/UNICEF Joint Monitoring Programme (JMP) regarding the rural-urban clean water divide would provide a richer structural explanation for why rurality acts as such a distinct driver of disease transmission.

4. Provide Technical Specification on Software Packages

Line 197 mentions that data analysis was executed using IBM SPSS Statistics, Stata, and Microsoft Excel. For replication purposes, the authors should explicitly state the exact version numbers of the software packages used and clarify which specific regression models or steps were performed in Stata versus SPSS. Furthermore, adding a brief sentence confirming that sample weights (v005 in DHS datasets) were applied during the logistic command will reinforce the methodological transparency of the multivariable analysis.

Final Recommendation

This manuscript provides an essential, data-driven diagnostic of childhood diarrheal determinants in Guinea. It aligns smoothly with international public health priorities and offers clear programmatic targets for reducing child mortality.

Therefore, it is recommended that this article be accepted for publication subject to **Minor Revision**. Addressing the minor terminological inconsistencies in the charts and expanding the contextual discussion surrounding vaccine delivery and rural infrastructure will elevate the manuscript to an exemplary level of academic and practical utility.