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

ABSTRACT

Background. Diarrhoea remains one of the leading causes of morbidity and mortality among children under five in resource-limited countries. In Guinea, its national prevalence is estimated at 14.6% according to the 2018 Demographic and Health Survey (DHS-V). This study aimed to identify the factors associated with diarrhoea among children under five in Guinea.

Methods. This was a cross-sectional descriptive and analytical study based on secondary analysis of DHS-V Guinea 2018 data, collected from 27 March to 28 June 2018 from a nationally representative sample obtained through two-stage stratified sampling. The analysis included 7,951 children under five matched with their mothers. Associations between sociodemographic, health and nutritional characteristics and diarrhoea occurrence were assessed using multivariable logistic regression, with adjusted odds ratios (aOR) and their 95% confidence intervals (95% CI).

Results. Mothers were mostly aged 20–39 years (74.9%), had no education (77.1%) and lived in rural areas (71.8%). Among children, exclusive breastfeeding (14.7%) and full vaccination coverage (15.7%) remained low, and 36.6% presented some form of malnutrition. In multivariable analysis, young maternal age (15–19 years; aOR = 1.35), no maternal education (aOR = 1.40), low household incomewealth quintile (aOR = 1.32), rural residence (aOR = 1.45) and distance to a health facility (aOR = 1.28) were associated with increased risk of diarrhoeasignificantly higher adjusted odds of diarrhoea ($p < 0.05$). Conversely, exclusive breastfeeding (aOR = 0.50), full vaccination (aOR = 0.65), at least three antenatal care visits (aOR = 0.80), media access (aOR = 0.78) and normal nutritional status (aOR = 0.60) were protective factors ($p < 0.05$).

Conclusion. Diarrhoea among children under five in Guinea is associated with largely modifiable sociodemographic, economic and health-related determinants. Strengthening maternal education, access to care and preventive services (vaccination, antenatal care, breastfeeding), and improving living conditions in rural areas appear essential to durably reduce this burden.

Keywords: Diarrhoea; Child under five; Associated factors; Guinea; Demographic and Health Survey; Logistic regression

LIST OF ABBREVIATIONS

- **ANC** : Antenatal care
- **aOR** : Adjusted Odds Ratio
- **CAPI** : Computer-Assisted Personal Interviewing
- **CI** : Confidence interval
- **CSPro** : Census and Survey Processing System
- **DHS (V)** : Demographic and Health Survey (fifth round, Guinea)
- **EA** : Enumeration area
- **GPHC** : General Population and Housing Census

- **INS** : National Institute of Statistics (Guinea)
- **OR** : Odds ratio
- **UNICEF** : United Nations Children's Fund
- **WHO** : World Health Organization

1. INTRODUCTION

Diarrhoea is defined as the passage of three or more loose or watery stools within a 24-hour period, or an abnormal increase in stool frequency relative to an individual's usual pattern [10].

It is generally caused by intestinal infections of viral, bacterial or parasitic origin [9]. Severe forms can lead to acute dehydration, serious complications, and even death in the absence of adequate management [10].

Worldwide, diarrhoea constitutes a genuine public health problem, particularly among children under five [9,6]. According to the World Health Organization (WHO), nearly 444,000 children under five die every year as a result of diarrhoea [10].

Sub-Saharan Africa and South Asia bear the largest share of the global burden of childhood diarrhoea [7]. In these regions, children's vulnerability is heightened by poverty, inadequate sanitation infrastructure, low health service coverage, limited access to safe drinking water and sanitation, and poor hygiene and housing conditions [8,12]. Numerous studies have shown that diarrhoea is closely linked to socioeconomic inequalities and unfavourable living conditions [12].

Repeated diarrhoeal episodes contribute to malnutrition and stunted growth, with consequences for children's physical and cognitive development [3]. In the long term, these consequences can compromise human development, school performance and the economic productivity of affected populations [1].

The occurrence of diarrhoea in children results from the interaction of multiple environmental, socioeconomic and behavioural factors. Among the main determinants identified are insufficient access to safe drinking water, inadequate sanitation, poor domestic and food hygiene practices, low parental education, insufficient access to health services, and a lack of information on preventive measures [8–12]. These factors remain particularly common in rural and disadvantaged areas of resource-limited countries [12].

In West Africa, the average prevalence of diarrhoea among children under five is estimated at 13.7%, ranging from 7.2% in Sierra Leone to 19.7% in the Gambia [2]. In Guinea, according to the 2018 DHS, this prevalence is estimated at 14.6% [5]. Despite the existence of some research on the determinants of diarrhoea in the country [13], the evidence base remains insufficiently up to date to effectively inform policies and programmes aimed at controlling this condition.

A better understanding of the factors associated with diarrhoea among children under five therefore appears essential to guide public health interventions and strengthen prevention and management strategies. It is within this context that the present study was conducted, with the aim of identifying the determinants associated with diarrhoea among children under five in Guinea using data from the 2018 Guinea Demographic and Health Survey.

1.1. Research question

General question. What factors are associated with diarrhoea among children under five in Guinea?

Specific questions

- What are the sociodemographic, economic and health characteristics of mothers and children under five in Guinea?
- What sociodemographic and economic factors influence the occurrence of diarrhoea among these children?
- What health and nutritional factors are associated with diarrhoea among these children?

1.2. Objectives

General objective. To identify the factors associated with diarrhoea among children under five in Guinea using data from the 2018 Guinea DHS-V.

Specific objectives

- To describe the sociodemographic characteristics of mothers and households of children under five.
- To describe the health and nutritional characteristics of children under five.
- To determine the association between maternal sociodemographic and economic factors and diarrhoea among children.
- To determine the association between children's health and nutritional factors and diarrhoea.
- To identify the factors independently associated with diarrhoea among children under five using multivariable analysis.

2. METHODS

2.1. Study design, period and setting

This was a cross-sectional descriptive and analytical study based on the secondary use of data from the 2018 Guinea DHS-V. Data collection was carried out from 27 March to 28 June 2018 by the National Institute of Statistics (INS), with technical support from The DHS Program.

The study covered the entire territory of Guinea. Guinea is divided into eight administrative regions, comprising the capital, Conakry, and seven inland administrative regions (Boké, Kindia, Mamou, Labé, Faranah, Kankan and N'Zérékoré). The survey covered both urban and rural areas across the whole national territory (Figure 1).

Figure 1. Administrative map of the Republic of Guinea.

2.2. Source population and study population

Source population. The source population consisted of all ordinary households enumerated in Guinea during the 2014 General Population and Housing Census (GPHC 2014).

Study population. In line with the objectives of the 2018 DHS-V, the study population comprised women aged 15–49 years, men aged 15–59 years, children under five, and the households selected. The present analysis specifically focuses on the sub-sample of children under five matched with their mothers (n = 7,951).

2.3. Eligibility criteria

Inclusion criteria. The study included all households selected in the 2018 DHS-V; all eligible women aged 15–49 years who were interviewed; and all children under five meeting the study's criteria, whose mother was interviewed and for whom data on diarrhoea and the main variables of interest were available.

Non-inclusion criteria. The study excluded households that were absent or not surveyed; individuals who refused to participate; and children with an incomplete questionnaire or missing data for the variables of interest.

2.4. Sampling

The 2018 DHS-V used a nationally representative sample obtained through two-stage stratified area sampling, based on the GPHC 2014 sampling frame.

Stratification. The national territory was divided into 15 strata, corresponding to the urban and rural areas of the seven administrative regions, plus the city of Conakry.

First stage. 401 enumeration areas (EAs) were selected with probability proportional to size (138 urban clusters and 263 rural clusters).

Second stage. After cartographic updating and household listing in each selected EA, a systematic sample of 20 households per cluster was drawn.

In total, 8,020 households were drawn, and 7,912 households were successfully surveyed; 10,874 women aged 15–49 years and 4,117 men aged 15–59 years were interviewed. Sample size was calculated to ensure national and regional representativeness of the main demographic and health indicators.

Sampling unit. The primary sampling unit was the enumeration area (EA); the secondary unit was the household.

Study unit. Depending on the research objective, the study unit could be the household, the woman aged 15–49 years, the man aged 15–59 years, or the child under five; for the present study, the study unit was the child under five.

2.5. Variables and measurements

Dependent variable. The dependent variable was the occurrence of diarrhoea in children under five, defined as the presence of at least one diarrhoeal episode (as defined in the Introduction) reported by the mother or caregiver during the two weeks preceding the survey. This variable was coded as binary (1 = Yes, 0 = No).

Independent variables. Two groups of explanatory variables were considered, in line with the study's specific objectives:

- **Maternal sociodemographic and economic factors**: maternal age, maternal education, place of residence, household wealth quintile, distance to a health facility, media access.
- **Child health and nutritional factors**: exclusive breastfeeding, vaccination status, number of antenatal care (ANC) visits attended by the mother, and the child's nutritional status.

Anthropometric measurements. Children's weight was measured using SECA electronic scales and height using graduated measuring boards, following standardised DHS Program protocols. These measurements were used to calculate the height-for-age, weight-for-age and weight-for-height indices used in the present study.

2.6. Data collection method and tools

Data were collected using standardised questionnaires adapted to the Guinean context: household questionnaire, woman's questionnaire, man's questionnaire, and biomarker questionnaire.

Interviews were conducted by trained fieldworkers using electronic tablets with direct data capture via the CAPI (Computer-Assisted Personal Interviewing) system, using CSPro software.

The information collected covered, among other things, sociodemographic characteristics, maternal and child health, nutrition, family planning, communicable diseases, hygiene and sanitation conditions, and anthropometric indicators.

2.7. Operational definitions

- **Household**: a group of persons usually living together in the same dwelling, sharing meals, and under the authority of the same head of household.
- **Place of residence**: classified as urban or rural.

- **Education level**: the highest level of schooling attained by the mother (none, primary, secondary or higher).
- **Wealth quintile**: the household's socioeconomic level, assessed using the wealth index calculated by the DHS from housing characteristics and household assets (very poor, poor, medium, rich, very rich; grouped into low/medium/high in the present analysis).
- **Diarrhoea**: the occurrence of at least one episode of loose or watery stools, at an abnormally high frequency, reported by the mother for the child during the two weeks preceding the survey.
- **Stunting**: a height-for-age index below –2 standard deviations (< –2 SD) relative to WHO growth standards.
- **Underweight**: a weight-for-age index below –2 standard deviations (< –2 SD).
- **Wasting**: a weight-for-height index below –2 standard deviations (< –2 SD).
- **Prevalence**: the proportion of individuals presenting the characteristic or condition under study at the time of the survey.

2.8. Data quality assurance

Fieldworker training. Interviewers and supervisors received thorough training covering interview techniques, questionnaire administration, anthropometric measurement, and the use of electronic tablets.

Pre-testing of tools. A pilot survey was conducted prior to the main survey to test the data collection tools and methodological procedures.

Field supervision. Data collection teams were regularly supervised by controllers to verify questionnaire completeness, response consistency, and adherence to standardised procedures.

Electronic data capture. The use of the CAPI system with CSPro software enabled direct data entry, reduced data entry errors, and allowed automatic consistency and validation checks.

Data cleaning. The databases underwent consistency checks, outlier detection, and cleaning prior to final analysis.

2.9. Statistical analysis

Data were analysed using appropriate statistical software (IBM SPSS Statistics, Stata, Microsoft Excel), according to the specific needs of each analytical step.

Descriptive analysis. This was used to calculate frequencies, proportions, means and standard deviations for sociodemographic, health and nutritional variables. Results are presented in tabular form.

Bivariate analysis. The association between each independent variable and the occurrence of diarrhoea was assessed using the chi-squared (χ^2) test for categorical variables and Student's t-test for continuous variables, according to the conditions of application of each test.

Multivariable analysis. Logistic regression was used to identify the factors independently associated with diarrhoea, while controlling for confounding factors. Results are expressed as crude odds ratios

(OR) and adjusted odds ratios (aOR), with their 95% confidence intervals (95% CI). The statistical significance threshold was set at 5% ($p < 0.05$).

Complex survey design. Because the 2018 DHS-V relies on a multi-stage stratified cluster sample (Section 2.4), valid estimation of standard errors and confidence intervals requires accounting for unequal selection probabilities, clustering of children within enumeration areas, and stratification; ignoring the survey design in an unweighted, non-clustered model tends to understate standard errors and overstate statistical significance.

Variable selection. Candidate variables corresponded to the maternal sociodemographic/economic and child health/nutritional factors described in Section 2.5.

2.10. Ethical considerations

This study is based on the secondary analysis of anonymised data from the 2018 Guinea DHS-V, made available by The DHS Program (ICF International) and the National Institute of Statistics of Guinea. The 2018 DHS-V protocol was approved by Guinea's national health research ethics committee and by the Institutional Review Board (IRB) of ICF International. Free and informed consent was obtained from each participant (or from the legal guardian, for children) prior to questionnaire administration and anthropometric measurement, in accordance with the principles of the Declaration of Helsinki. As the data were fully anonymised prior to release, no additional authorisation was required for the present secondary analysis.

3. RESULTS

The analysis included a sample of 7,951 children under five matched with their mothers, drawn from the 2018 Guinea DHS-V database.

3.1. Sociodemographic and economic characteristics of mothers

Table 1. Sociodemographic and economic characteristics of mothers (n = 7,951)

Variable	Category	n	%
Maternal age	15–19 years	842	10.6
	20–29 years	3,214	40.4
	30–39 years	2,746	34.5
	≥ 40 years	1,149	14.5
Maternal education	None	6,126	77.1
	Primary	1,245	15.7
	Secondary or higher	580	7.2
Place of residence	Urban	2,244	28.2
	Rural	5,707	71.8
Household wealth quintile	Low	3,615	45.5

	Medium	2,768	34.8
	High	1,568	19.7

The 20–29 year age group was the most represented (40.4%; n = 3,214), followed by the 30–39 year age group (34.5%; n = 2,746). Adolescent mothers aged 15–19 years represented 10.6% (n = 842) of the sample.

Regarding education, more than three-quarters of mothers had no education (77.1%; n = 6,126). Women with primary education represented 15.7% (n = 1,245), and those with secondary or higher education represented 7.2% (n = 580).

The majority of participants resided in rural areas (71.8%; n = 5,707), compared with 28.2% (n = 2,244) in urban areas.

In economic terms, 45.5% of households (n = 3,615) fell into the low wealth quintile, 34.8% (n = 2,768) into the medium wealth quintile, and 19.7% (n = 1,568) into the high wealth quintile.

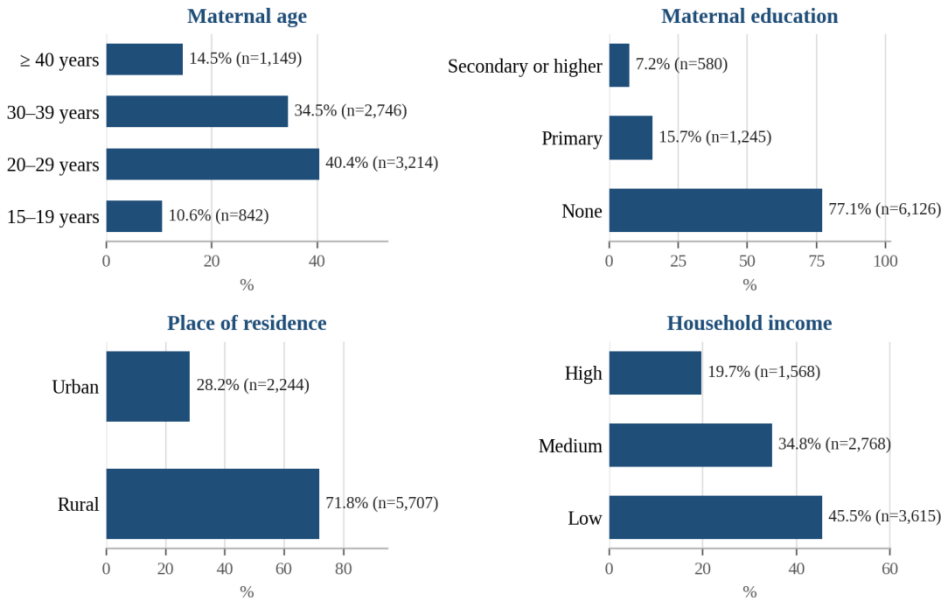

Figure 2. Distribution of mothers by age, education level, place of residence and household wealth quintile (n = 7,951).

Comment. This figure highlights the dominant sociodemographic profile of the sample: one in two mothers falls within the most fertile age range (20–39 years), while education and household wealth show a markedly skewed distribution, with the large majority of mothers having no education and belonging to a lowor medium-wealth-quintile household. The predominance of rural residence (nearly three mothers out of four) completes a picture of socioeconomic vulnerability shared by most of the families studied.

3.2. Health and nutritional characteristics of children

Table 2. Health and nutritional characteristics of children under five (n = 7,951)

Variable	Category	n	%

Child's age	0–11 months	1,782	22.4
	12–23 months	1,946	24.5
	24–35 months	1,589	20.0
	36–59 months	2,634	33.1
Exclusive breastfeeding	Yes	1,169	14.7
	No	6,782	85.3
Full vaccination	Yes	1,248	15.7
	No	6,703	84.3
Nutritional status	Normal	5,043	63.4
	Malnutrition	2,908	36.6

Children aged 36–59 months constituted the most frequent age group (33.1%; n = 2,634), followed by children aged 12–23 months (24.5%; n = 1,946).

Exclusive breastfeeding concerned only 14.7% of children (n = 1,169), while 85.3% (n = 6,782) had not benefited from it.

Full vaccination coverage remained low, with only 15.7% of children fully vaccinated (n = 1,248) compared with 84.3% (n = 6,703) who were not.

In nutritional terms, 63.4% of children (n = 5,043) had a normal nutritional status, while 36.6% (n = 2,908) presented some form of malnutrition.

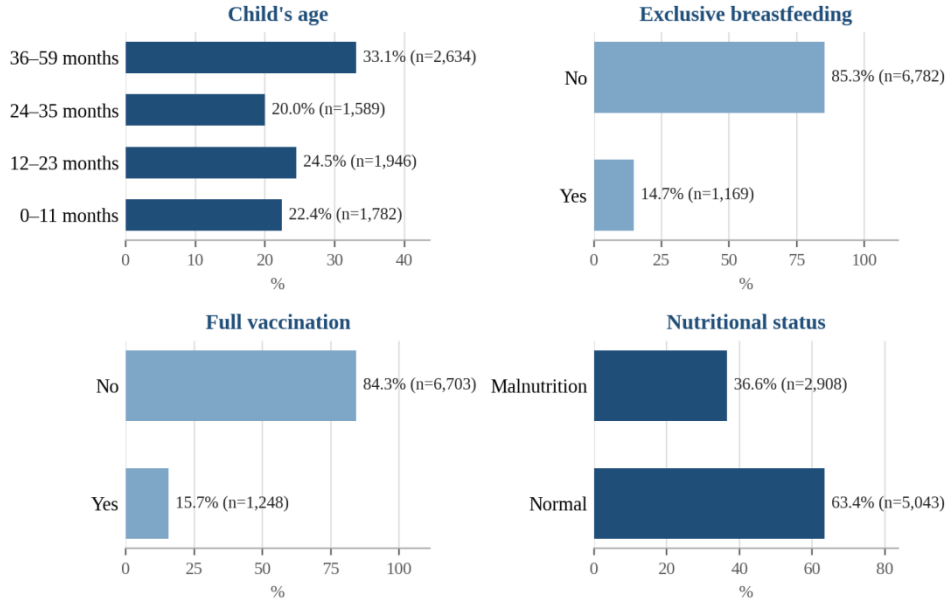

Figure 3. Distribution of children by age, exclusive breastfeeding, full vaccination and nutritional status (n = 7,951).

Comment. This figure underscores the contrast between very low coverage of preventive interventions fewer than three children in twenty are exclusively breastfed or fully vaccinated and an already substantial nutritional burden, with more than one child in three presenting some form of

malnutrition. This combination of weak protection and nutritional vulnerability creates conditions conducive to the occurrence and severity of diarrhoeal episodes.

3.3. Factors associated with diarrhoea among children under five: multivariable analysis

Table 3. Factors associated with diarrhoea among children under five in multivariable analysis (logistic regression)

Variable	Category	aOR[a]	95% CI	p
Maternal age	15–19 years	1.35	1.08–1.69	0.008
Maternal education	None	1.40	1.16–1.69	< 0.001
Household wealth quintile	Low	1.32	1.10–1.59	0.002
Place of residence	Rural	1.45	1.20–1.75	< 0.001
Distance to health facility	Far	1.28	1.04–1.58	0.020
Exclusive breastfeeding	Yes	0.50	0.40–0.63	< 0.001
Full vaccination	Yes	0.65	0.52–0.81	< 0.001
≥ 3 antenatal care (ANC) visits	Yes	0.80	0.66–0.97	0.026
Media access	Yes	0.78	0.64–0.95	0.014
Normal nutritional status	Yes	0.60	0.50–0.72	< 0.001

aOR: adjusted odds ratio; 95% CI: 95% confidence interval; ANC: antenatal care. [a] Adjusted for all variables shown in the table.

Multivariable analysis identified several factors significantly associated with the occurrence of diarrhoea among children (Table 3).

Among the risk factors, young maternal age (15–19 years), no maternal education, low household wealth quintile, rural residence, and distance to a health facility were all associated with significantly higher adjusted odds of diarrhoea, with adjusted odds ratios ranging from 1.28 (distance to a health facility) to 1.45 (rural residence), for p-values ranging from < 0.001 to 0.020.

Conversely, five factors showed a statistically significant protective effect: exclusive breastfeeding (aOR = 0.50; 95% CI: 0.40–0.63), full vaccination (aOR = 0.65; 95% CI: 0.52–0.81), at least three antenatal care visits (aOR = 0.80; 95% CI: 0.66–0.97), media access (aOR = 0.78; 95% CI: 0.64–0.95), and normal nutritional status (aOR = 0.60; 95% CI: 0.50–0.72).

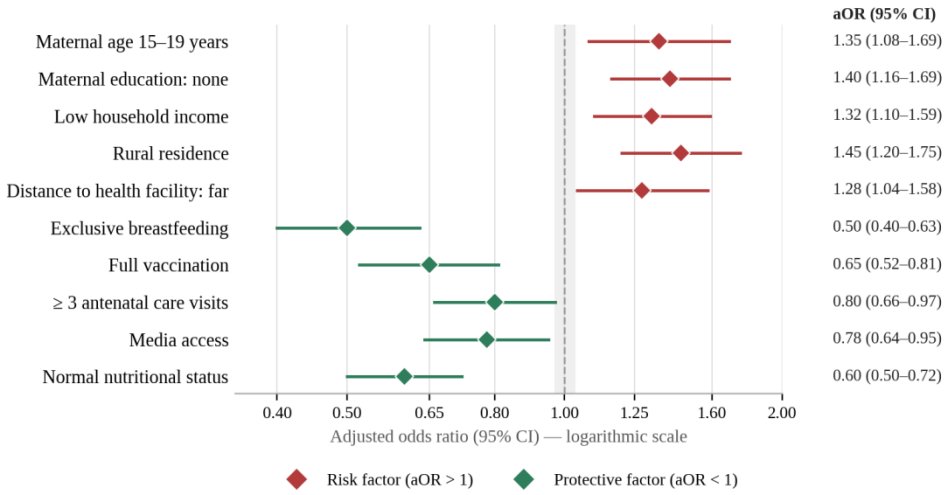

Figure 4. Forest plot of factors associated with diarrhoea among children under five (adjusted odds ratios and 95% CI, logarithmic scale).

Comment. The forest plot situates each factor relative to the null value (aOR = 1, dashed line): the five risk factors (red diamonds) lie entirely to the right of this value, while the five protective factors (green diamonds) lie entirely to the left. For all ten factors retained, the 95% confidence interval does not cross the value 1, which visually confirms the statistical significance of each association. Rural residence and exclusive breastfeeding show, respectively, the strongest detrimental and protective effects among all the factors studied.

4. DISCUSSION

Taken together, these results paint a fairly intuitive picture: diarrhoea among children under five in Guinea is shaped by a web of sociodemographic, economic, and health-related factors rather than any single cause.

4.1. Sociodemographic characteristics of mothers

Most mothers in the sample were aged 20–39 years (74.9%) unsurprising, since this is the age range in which women are most likely to be having children, and a pattern echoed in DHS-based studies elsewhere in Africa.

Maternal education levels were strikingly low: more than three-quarters of mothers (77.1%) had received no formal schooling at all. This mirrors the persistent barriers to girls' education in Guinea, particularly in rural areas, and matters well beyond literacy itself, educated mothers are generally better placed to adopt sound hygiene, nutrition, and care-seeking practices for their children.

Rural households made up the majority of the sample (71.8%), consistent with Guinea's broader demographic profile, where access to safe water, sanitation, and health facilities remains uneven and often limited outside urban center.

Nearly half of all households (45.5%) fell into the lowest wealth quintile. Taken together with the patterns above, this points to a compounding of disadvantage low education, rural isolation, and economic precarity among many of the families in this study.

4.2. Health and nutritional characteristics of children

The largest age group among children was 36–59 months (33.1%), likely shaped by both the underlying sample structure and Guinea's relatively high fertility.

Exclusive breastfeeding was uncommon, practised by only 14.7% of mothersfar short of WHO's recommendation that infants be exclusively breastfed for their first six months. Limited awareness among mothers, sociocultural beliefs around infant feeding, and the early introduction of water or solid foods most likely all play a part.

Full vaccination coverage was similarly low, at 15.7%. Difficulty accessing vaccination services, gaps in awareness-raising, and uneven geographic distribution of care all plausibly contribute to this shortfall.

More than a third of children (36.6%) showed some form of malnutrition, underscoring how persistent a problem child nutrition remains in Guinea most likely the product of food insecurity, recurrent infections, poverty, and inadequate feeding practices acting together rather than separately.

4.3. Determinants of diarrhoea

Maternal age. Children born to mothers aged 15–19 had significantly higher odds of diarrhoea than children of older mothers (aOR = 1.35; 95% CI: 1.08–1.69; p = 0.008). Inexperience is the most plausible explanation: very young mothers often have had less practice with child care, feeding, and recognising the early signs of diarrhoeal illness, compounded by the limited decision-making autonomy and restricted access to health information reported among adolescent mothers in other African studies.

Maternal education. Children of mothers with no formal education had significantly higher odds of diarrhoea (aOR = 1.40; 95% CI: 1.16–1.69; p < 0.001) among the more pronounced associations in the model. Education appears protective for much the same reasons documented elsewhere: it tends to equip mothers to adopt better hygiene practices, recognise illness earlier, and make fuller use of health services and preventive care.

Socioeconomic status. Diarrhoea was also more common among children from the poorest households (aOR = 1.32; 95% CI: 1.10–1.59; p = 0.002), which tend to face several disadvantages at once: substandard housing, unsafe drinking water, inadequate sanitation, and less money to spend on care once a child falls ill.

Place of residence. Rural residence showed the strongest association with diarrhoea among the sociodemographic factors examined (aOR = 1.45; 95% CI: 1.20–1.75; p < 0.001). Limited sanitation infrastructure, less reliable access to safe water, and lower levels of health education in rural communities together offer a plausible explanation.

Distance to a health facility. Living far from a health facility was likewise associated with higher odds of diarrhoea (aOR = 1.28; 95% CI: 1.04–1.58; p = 0.020). Distance is rarely just distance: it tends to delay care-seeking and reduce exposure to preventive services more broadly.

Protective factors

Exclusive breastfeeding. Exclusively breastfed children had roughly half the odds of diarrhoea of their peers (aOR = 0.50; 95% CI: 0.40–0.63; p < 0.001) the strongest protective effect observed in this study, and exactly what WHO guidance would predict: breast milk both confers immunological protection and removes the need for water or food that may be contaminated.

Full vaccination. Full vaccination was associated with notably lower odds of diarrhoea (aOR = 0.65; 95% CI: 0.52–0.81; p < 0.001), most plausibly through the direct protection that certain vaccines the rotavirus vaccine in particular provide against diarrhoea-causing infections.

Antenatal care. Mothers who attended at least three antenatal care visits had children with lower odds of diarrhoea (aOR = 0.80; 95% CI: 0.66–0.97; p = 0.026). These visits double as a teaching opportunity, exposing mothers to guidance on hygiene, breastfeeding, vaccination, and preventive child care well before any of it becomes urgent.

Media access. Households with access to media radio, television, or newspapers also had lower odds of childhood diarrhoea (aOR = 0.78; 95% CI: 0.64–0.95; p = 0.014), plausibly reflecting greater exposure to public health messaging and prevention campaigns.

Normal nutritional status. Well-nourished children were significantly less likely to develop diarrhoea (aOR = 0.60; 95% CI: 0.50–0.72; p < 0.001), consistent with the broader role good nutrition plays in strengthening a child's immune defences against infection.

5. CONCLUSION

This study, based on data from the 2018 Guinea DHS-V, identified several factors associated with diarrhoea among children under five in Guinea.

The results show that diarrhoea remains influenced by sociodemographic, economic and health-related factors. Children of young, uneducated mothers, living in rural areas and belonging to low-wealth-quintile households had significantly higher odds of diarrhoea; distance from health facilities was likewise an aggravating factor.

Conversely, exclusive breastfeeding, full vaccination, attendance at antenatal care visits, media access, and good nutritional status were identified as protective factors.

These findings highlight the need to strengthen health education programmes, women's empowerment, access to health care, vaccination, nutritional interventions, and policies to improve hygiene and sanitation conditions, particularly in rural areas.

Multisectoral strategies involving the health, education, water and sanitation sectors appear essential to durably reduce diarrhoeal morbidity among children in Guinea.

6. STRENGTHS AND LIMITATIONS OF THE STUDY

6.1. Strengths

This study has several strengths. It is based on data from the 2018 Guinea DHS-V, a standardised national survey conducted using a rigorous methodology that is internationally recognised through The DHS Program.

It also benefits from a large, nationally representative sample, good statistical power, and satisfactory data quality, owing to the quality-control and supervision procedures implemented during the survey.

Furthermore, the use of multivariable analysis made it possible to identify the factors independently associated with diarrhoea while controlling for confounding factors. The results obtained can thus help inform public health policy and the planning of interventions targeting child health in Guinea.

6.2. Limitations

The cross-sectional design of the survey does not allow a causal relationship to be established between the variables studied and diarrhoea.

As the study is based on secondary data, some potentially important variables (water quality, detailed hygiene practices, concurrent infectious episodes) were not available or were incomplete in the database.

Some information collected from mothers relied on their recall, exposing the study to recall bias; social desirability bias may also exist, particularly regarding hygiene practices, breastfeeding, or care-seeking behaviour.

Finally, the results reflect the situation observed at the time of the 2018 DHS-V and may not fully represent current realities.

Acknowledgements

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Data availability

The data used in this study come from the 2018 Guinea Demographic and Health Survey (DHS-V). The DHS dataset is available on request from The DHS Program (https://dhsprogram.com) and the National Institute of Statistics of Guinea, subject to authorisation.

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