integrity Research Journals

Journal of Practical Medicine and Medical Science
Volume 3(2), pages 30-37, October 2025
Article Number: 6E535F2D1
https://doi.org/10.31248/JPMMS2025.023
https://integrityresjournals.org/journal/JPMMS

Full Length Research

Pattern of paediatric admissions in a nascent private tertiary healthcare facility in southwest Nigeria: A 12-month Retrospective Study

Lere Peter OLUWADARE[1]*, Pauline Kasarachi AKOWUNDU[2], Sampson Chukwuemeka ALIOZOR[3], Oyindamola Olabisi ADERINTO[4], Olubunmi Olufunke OGEIN[5], Oluwaseye Foluso OYENIRAN[6], Adebowale Tunde ODUNAFOLABI[7], Samuel Titilola OLADEJO[8], Oladotun Victor OLALUSI[9], Christian Esidogho AMIWERO[10], Joshua Oladimeji AWOFESO[11], Olatunbosun Omololu OLAWANLE[12], Temitope OYEWOLE[12], Adedamola DADA[13] and Odutola Israel ODETUNDE[14]

[1]Division of Early Childhood Development, Neurology & Infectious Diseases, Department of Paediatrics, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[2]Division of Neonatology, General Paediatrics & Adolescent Medicine, Department of Paediatrics, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[3]Division of Paediatric Surgery, Department of Surgery, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[4]Department of Family Medicine & Wellness Centre, Redeemer's Health Village, Redemption City, Ogun State and Department of Family Medicine, University College Hospital, Ibadan, Nigeria.
[5]Division of Assisted Reproductive Technique & Urogynaecology, Department of Obstetrics & Gynaecology, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[6]Division of Fetomaternal Medicine & Gynae-oncology, Department of Obstetrics & Gynaecology, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
#Author affiliations continue before the reference section.

*Corresponding author. Email: olerepeter@gmail.com

Copyright © 2025 Oluwadare et al. This article remains permanently open access under the terms of the Creative Commons Attribution License 4.0, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received 9th August 2025; Accepted 30th September 2025

ABSTRACT: Promotion of good health and well-being is the third goal on the list of the United Nations (UN) Sustainable Development Goals 2030 (SDG #3). Attaining that goal faces a significant threat in many low- and middle-income countries (LMICs), including Nigeria, with rapid population growth, high childhood mortality, suboptimal healthcare budgets, and diminishing resources. Understanding admission patterns in a new private tertiary hospital provides insight into disease burden, healthcare access, and health system challenges in Nigeria. The objectives of the study were to describe the pattern of paediatric admissions in a new private tertiary hospital in southwest Nigeria, to compare these findings with previously documented patterns in other Nigerian facilities and to highlight implications for public health education and policy. A descriptive, retrospective study was conducted over 12 months (July 2024 – June 2025). The clinical notes of all the children (aged 0-16 years) who were admitted into the paediatric wards of the study centre were reviewed. The data were extracted from the electronic medical records system of the facility. The statistical approach was descriptive. The results show that the total number of in-patient paediatric admissions was 88. The male-to-female ratio was 1.4:1.0. Children younger than 5 years accounted for 61.4% of the total admissions. Median duration of admission was 4 days. Severe Malaria and Acute Diarrhoeal Disease were the leading causes of admission, while extreme prematurity accounted for the highest number of mortalities. Eighty (90.9%) of the children were discharged, two (2.3%) were referred, while six (6.8%) died. In conclusion, most admissions involved children under 5 years, with infections being the leading cause, and mortality at 6.8%. This highlights the need for preventive interventions targeting early childhood illnesses.

Keywords: Paediatric admissions, morbidity, mortality, Nigeria, retrospective study, tertiary hospital.

INTRODUCTION

The third United Nations' sustainable development goal (SDG #3) is geared towards "promotion of good health and wellbeing (René *et al*., 2025)". Attaining that goal has been fraught with a lot of challenges, especially in sub-Saharan Africa (Aliyu *et al*., 2024). Ranking high among the factors inhibiting good health and wellbeing is ignorance (Udujih *et al*., 2020). The literacy level in the sub-region (including Nigeria) is still very low compared with the developed nations (Zickafoose *et al*., 2024). There are still a lot of out-of-school children and school drop-outs who end up being uneducated adults (Zickafoose *et al*., 2024). Illiteracy impacts the level of knowledge of these adults and, by extension, their health-seeking behaviour (Udujih *et al*., 2020). Identification of early signs of illness in their children is impaired, and as a result, the majority either do not seek medical care promptly or do so when the illness has reached an advanced stage, often with a poor prognosis (Eseigbe *et al*., 2012).

Extreme poverty is another major inhibitory factor to good health and wellbeing (Ahinkorah *et al*., 2021; Awojobi, 2022). For those who desire to seek medical care for their children, the inability to afford the cost of healthcare services precludes such desire (Ahinkorah *et al*., 2021; Awojobi, 2022; Chilot *et al*., 2022). The national health insurance scheme (NHIS) in Nigeria, although gradually gaining popularity and wide acceptance over the years, has not yet enrolled every citizen in the scheme (Imo *et al*., 2022; Ipinnimo *et al*., 2022). Poverty impacts the ability to afford out-of-pocket payment for health services (Ekhator-Mobayode *et al*., 2022). Lack of enrolment in any particular health insurance scheme further worsens the ability of parents to access appropriate healthcare services for their children (Ipinnimo *et al*., 2022; Ekhator-Mobayode *et al*., 2022).

Socio-economic instability also greatly affects the accessibility to and affordability of healthcare services in Nigeria (Berebon, 2025). A major contributory factor to this is protracted insurgency, especially in the northern part of the nation (Berebon, 2025; Anikwudike and Agabi, 2024; Olarewaju, 2021). Funds that rather should have been channelled to the development and sustainability of the health sector are being expended to ensure peace in the nation (Berebon, 2025; Anikwudike and Agabi, 2024).

This audit aimed to: (i) describe the pattern of paediatric admissions in a new private tertiary hospital in southwest Nigeria; (ii) compare these findings with previously documented patterns in other Nigerian facilities; and (iii) highlight implications for public health education and policy.

MATERIALS AND METHODS

Study setting description

This was a descriptive retrospective study conducted at Redeemer's Health Village (RHV), a newly established private tertiary hospital in Ogun State, southwest Nigeria, between July 2024 and June 2025. All children aged 0–16 years admitted to the paediatric wards (emergency, neonatal, and general paediatric) were included. The RHV is located within the grounds of the Redemption City. The expanse of land hosting the Redemption City sprawls along the Ogun axis of the Lagos-Ibadan Expressway, Mowe, Obafemi-Owode Local Government Area, Ogun State, Nigeria. There are three Paediatric wards, viz: a 4-bed children's emergency unit, a 12-bed neonatal ward (for those aged 0-28 days) and a 12-bed children's ward (for those aged 1month-16years). Children in these three wards are under the care of primarily Neonatologists, Paediatricians and a Paediatric surgeon. Other specialities whose patients fall within the paediatric age group also admit children into these wards and their care is jointly supervised by the primary speciality in conjunction with the paediatricians to achieve holistic care. The 12-month audit aimed to identify the following: the total number of paediatric admissions, gender distribution, age at presentation, diagnosis, duration of admission and outcomes.

Data collection process

Data on demographics, diagnosis, length of stay, and outcomes were extracted from patients' electronic medical records using a structured proforma. Diagnoses were based on the clinical notes as documented by the attending physicians. Trained medical records personnel (under the supervision of two senior physicians) helped with the data collection.

Data analysis

Data were analysed using descriptive statistics (frequencies, bar chart, and median) in Excel Software 2024 version. Comparisons were then made with similar studies in Nigeria.

Inclusion/exclusion criteria

All the children aged 0-16 years who were admitted during the study period were included in the analysis. Adolescents who were older than 16 years (who were erroneously included in the initial data collection process) were excluded. There were no cases of incomplete records.

Ethical clearance

Ethical approval with waiver of informed consent was obtained from the RHV Medical Ethics Committee.

Table 1. Summary statistics.

Subject	Number (n)
Total paediatric admissions	88
Male children	51
Female children	37
Neonates	16
Infants	8
Children aged 1-5years	30
Older children (> 5years)	34
Minimum duration of admission (in days)	2
Maximum duration of admission (in days)	15

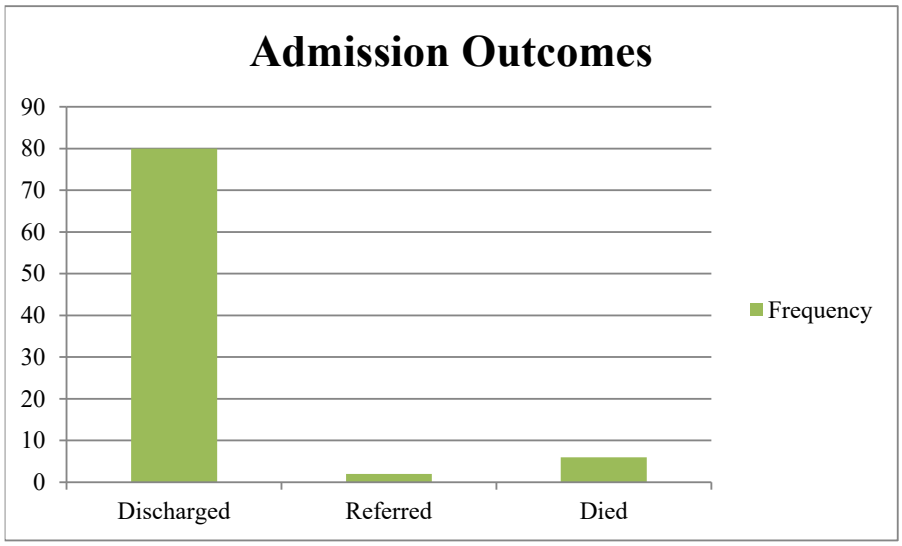

Figure 1. Summary of the outcomes of paediatric admissions.

RESULTS

The total number of paediatric admissions during the period under review was 88. There were 51 males (58.0%). The male to female ratio was 1.4:1.0. Neonates accounted for 18.2%, infants (9.1%), while children aged between 1 to 5 years accounted for 34.1%. Older children (above 5 years) accounted for 38.6% of the total admissions. The median duration of admission was 4.0 days (range 2-15 days). Eighty (90.9%) of the children were discharged, two (2.3%) were referred, while six (6.8%) died (Figure 1). Extreme prematurity accounted for 3 out of the 6 mortalities recorded.

Table 2 presents the spectrum of cases and their corresponding frequencies, based on 88 cases reviewed, which encompass infectious, neonatal, surgical, and other medical conditions. Infectious diseases accounted for the highest proportion of diagnoses, representing 53.5% of all cases. Severe malaria was the most common single condition, comprising 18 cases (20.5%), followed by acute diarrhoeal disease with 10 cases (11.4%). Pneumonia and pharyngotonsillitis contributed 8 (9.1%) and 7 (8.0%) cases, respectively, while bronchiolitis constituted 4 cases (4.5%). Neonatal conditions collectively accounted for 17.0% of the cases. These included prematurity (8 cases; 9.1%), neonatal jaundice (4 cases; 4.5%), and severe perinatal asphyxia (3 cases; 3.4%). Surgical conditions represented 14 cases (15.9%), while the category classified as “others” contributed 12 cases (13.6%). Overall, the distribution indicates a predominance of infectious morbidities among the study population.

DISCUSSION

This study shows that the major childhood killer diseases remain issues of public health concern in our society (Adedini *et al*., 2021; Ayede *et al*., 2018; Olawade *et al*., 2025). The spectra of illnesses that required admission were similar to those of previous studies, both in the southwest region of Nigeria (Agbesanwa *et al*., 2023) and in other parts of Nigeria (Okoronkwo *et al*., 2018; Duru *et*

Table 2. Spectrum of cases and their corresponding frequencies.

Diagnosis	Frequency (n = 88)	Percentage (%)
Infectious		
Severe Malaria	18	20.5
Acute Diarrhoeal Disease	10	11.4
Pneumonia	8	9.1
Pharyngotonsilitis	7	8.0
Bronchiolitis	4	4.5
Neonatal		
Prematurity	8	9.1
Neonatal Jaundice	4	4.5
Severe Perinatal Asphyxia	3	3.4
Surgical	14	15.9
Others	12	13.6

al., 2013; Yusuf *et al*., 2025). The level of health awareness among parents and caregivers still needs to be improved upon (Aliyu *et al*., 2024; Igwe *et al*., 2024; Hile *et al*., 2022). The role of vaccination in the prevention of childhood killer diseases cannot be overemphasised (Alanazi *et al*., 2024; Ozughalu *et al*., 2022; Orjingene *et al*., 2021).

Malaria accounted for the majority of cases (20.5%) that required admission. The persistent burden of malaria, being responsible for a substantial number of in-patient paediatric admissions, is as documented by previous authors (Agbesanwa *et al*., 2023; Okoronkwo *et al*., 2018; Yusuf *et al*., 2025; Hile *et al*., 2022). Nigeria is in a malaria endemic zone (Oluwadare *et al*., 2025; WHO, 2020). The majority of parents and caregivers do not ensure that their children/wards sleep under insecticide-treated bednets (ITNs), and hence, these children are exposed to the bites of the female anopheles mosquitoes, which are the vectors of the *Plasmodium spp* responsible for malaria attacks (O'Meara *et al*., 2010; Iwuafor *et al*., 2016; Touré *et al*., 2022). This implies the need for a greater level of public health awareness and continued interventions, e.g improved access to intravenous artesunate, artemisinin-based combination therapy (ACT) and ITNs to stem the scourge of malaria in our society (Oluwadare *et al*., 2025).

Acute diarrhoeal disease ranked next (11.4%) on the list of illnesses that necessitated in-patient care at our facility. Diarrhoeal disease reflects the level of personal and environmental hygiene, access to potable water and sewage disposal practices (Mernie *et al*., 2022; Babalola *et al*., 2021; Natnael *et al*., 2021). There is a poor level of awareness among caregivers about the need to commence oral rehydration therapy (ORT) and dispersible zinc sulphate when a child starts having bouts of loose stool (Ogbo *et al*., 2023; Egbewale *et al*., 2022). The majority still erroneously commence oral antibiotics against prompt replacement of fluid and electrolyte losses (Egbewale *et al*., 2022; Ezuruike *et al*., 2022). Introduction of the administration of the Rota virus vaccine in the National Programme on Immunisation has reduced the burden of cases of diarrhoeal disease; however, vaccine hesitancy and poor vaccine uptake have impeded the success of this programme. Hence, there is a need for a greater level of public health education to increase awareness about vaccine safety and efficacy in the prevention of childhood killer diseases (Adedini *et al*., 2021; Ayede *et al*., 2018; Oladunni *et al*., 2024).

Pneumonia was the third cause (9.1%) of hospital admissions in this study. This compares closely with the findings of Graham *et al*. (2020). Reasons for this include non-exclusive breastfeeding and poor hygiene. With adequate vaccination coverage, high levels of environmental hygiene and promotion of exclusive breastfeeding, children (especially the under-fives) will be protected against pneumonia (Olawade *et al*., 2025; Ozughalu *et al*., 2022). Regular public health enlightenment will help raise the level of awareness and bring about improvement in health indices in this regard.

Prematurity accounted for the highest cause of inpatient care among the neonatal age group. This is very similar to the findings of Michael *et al*. (2021), Fajolu *et al*. (2022), Fajolu *et al*. (2024), Audu *et al*. (2021), and Abolodje (2021). Inadequate antenatal care and prenatal illnesses were some of the identified risk factors. Apart from the caregiver fatigue associated with nursing a child born before the expected date of delivery, the financial implications are huge (Fajolu *et al*., 2024; Audu *et al*., 2021). This implies the need for early, comprehensive and regular antenatal care to identify high-risk pregnancies and to institute measures to prolong such pregnancies (close to term/maturity) as much as medically and practically feasible (Fajolu *et al*., 2024).

Severe perinatal asphyxia was also ranked a significant cause of inpatient care in the neonatal age group. This

compares closely with the documented literature (Fajolu *et al*., 2024; Audu *et al*., 2021; Abolodje, 2021; Mokuolu *et al*., 2022). Late presentation and a poor referral system were some of the causes identified in these children with severe perinatal asphyxia. The consequences of having a child with neurologic sequelae like cerebral palsy and epilepsy following perinatal asphyxia are enormous (Gabriel-Job *et al*., 2022; Kibrom *et al*., 2024; Okike *et al*., 2022; Okeke *et al*., 2022). These are largely preventable. There is, thus, the need to prioritise health education on skilled birth attendance and prompt referral to a higher level of care when the need arises (Audu *et al*., 2021; Ochoga *et al*., 2021).

There was a case of an unsuccessful attempt at suicide by an adolescent during the period reviewed. The adolescent years are usually very turbulent for both the parents and the adolescents themselves (Wilson and Dumornay, 2021; Grossberg and Rice, 2023; Armitage *et al*., 2024; Bhave *et al*., 2022). This underscores the unique role of paediatricians in adolescent medicine as the requirements of teenagers are very different from those of the general population (Rodrigo *et al*., 2021). It also emphasises the need for integration of child and adolescent psychiatry into core paediatric practice (Ani *et al*., 2022; Shim *et al*., 2022; Hoffmann *et al*., 2022).

The surgical cases included acute appendicitis, intussusception and trachea-esophageal atresia. They represent the spectra of surgical health issues seen in the paediatric population as previously documented by other authors (Ajao and Adeniran, 2022; Abbas *et al*., 2023; PaedSurg Africa Research Collaboration, 2021). Most of these cases were presented to the paediatrician before the specific surgical sub-speciality was involved. They highlight the crucial need for constant multidisciplinary management in order to achieve optimal health outcomes in the care of children (Adeyemi *et al*., 2022).

The two cases that were referred were complex congenital heart defects that required surgical intervention for the survival of those children. They were referred to centres that had established expertise and facilities for such care. The mortality rate in this study (6.8%) was similar to similar studies conducted in Southwest (Adeyemi *et al*., 2022), Southeast (Okoronkwo *et al*., 2018) and South-south Nigeria (Duru *et al*., 2013).

Limitations and strengths

The number of cases analysed over the course of 12 months was relatively very few, and this being a single-centre study design makes it challenging to make definite conclusions. However, this is the first clinical audit in a new tertiary health institution, and it is hoped that it will serve as the basis for further studies.

Conclusion

This study demonstrates that malaria, acute diarrhoeal disease, pneumonia, and neonatal conditions such as prematurity and perinatal asphyxia remain the leading causes of paediatric admissions in a new private tertiary facility in southwest Nigeria. The mortality rate (6.8%) was comparable to other regional studies. These findings highlight the urgent need for strengthened preventive measures, including vaccination, malaria control, improved maternal and neonatal care, and public health education. Further multicentre studies with larger cohorts are recommended to better define paediatric admission trends in private healthcare settings.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

ACKNOWLEDGEMENT

The authors are particularly grateful to the head of the Medical Records Department of the Redeemer's Health Village (Ms Jesupelumi Isaac) for her invaluable efforts in ensuring prompt data availability.

Authors' Affiliation continues

[7]Division of General & Laparoscopic Surgery, Department of Surgery, Redeemer's Health Village, Redemption City, Ogun State and Department of Surgery, Faculty of Clinical Sciences, College of Medicine, Afe Babalola University, Ado-Ekiti, Nigeria.
[8]Division of Orthopaedics & Trauma Surgery, Department of Surgery, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[9]Division of Neurology, Department of Internal Medicine, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[10]Department of Haematology & Blood Transfusion Services, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[11]Department of Radiodiagnosis & Interventional Radiology, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[12]Department of Anaesthesia & Critical Care, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.
[13]Division of Orthopaedics & Trauma Surgery, Department of Surgery, Redeemer's Health Village, Redemption City, Ogun State, Nigeria and Department of Orthopaedics, Federal Medical Centre, Ebute Metta, Lagos.
[14]Department of Paediatrics, Faculty of Clinical Sciences, College of Medicine, University of Nigeria, Nsukka; Paediatric Nephrology Unit, Department of Paediatrics, University of Nigeria Teaching Hospital, Enugu and Division of Nephrology & Paediatric Critical Care, Department of Paediatrics, Redeemer's Health Village, Redemption City, Ogun State, Nigeria.

REFERENCES

Abbas, A., Laverde, R., Yap, A., Stephens, C. Q., Samad, L., Seyi-Olajide, J. O., Ameh, E.A., Ozgediz, D., Lakhoo, K., Bickler, S. W., & GICS. (2023). Routine pediatric surgical emergencies: incidence, morbidity, and mortality during the 1st 8000 days of life—a narrative review. *World Journal of Surgery*, *47*(12), 3419-3428.

Abolodje, E. (2021). Neonatal mortality: morbidity pattern and risk factors in a resource-limited centre in North Central Nigeria. *Sri Lanka Journal of Child Health*, *50*(3), 408-415.

Adedini, S. A., Alaba, O. A., & Alex-Ojei, C. A. (2021). Community perspectives and caregivers' healthcare practices and responses to the four major childhood killer diseases in Nigeria. *African Journal of Reproductive Health*, *25*(6), 121-133.

Adeyemi, E., Oladele, A., Ajigbotosho, S. O., Adaje, A. O., Bolaji, O. B., & Lawal, O. A. (2023). A review of post neonatal paediatric admission pattern and outcome in a public tertiary health facility in Nigeria. *Nigerian Medical Journal*, *64*(5), 604-611.

Agbesanwa, T. A., Babatola, A. O., Fatunla, O. A., Ibrahim, A., Aina, F. O., Ogundare, E. O., Adeniyi, A.T., Egbedi, F., Olubamiwa, T., Olanipekun, B., & Olatunya, O. S. (2023). Pattern of admissions and outcome in the children emergency department of a tertiary health institution in Southwestern Nigeria: A four-year review. *African Journal of Emergency Medicine*, *13*(2), 45-51.

Ahinkorah, B. O., Budu, E., Seidu, A. A., Agbaglo, E., Adu, C., Ameyaw, E. K., Ampomah, I. G., Archer, A. G., Kissah-Korsah, K., & Yaya, S. (2021). Barriers to healthcare access and healthcare seeking for childhood illnesses among childbearing women in sub-Saharan Africa: A multilevel modelling of Demographic and Health Surveys. *Plos One*, *16*(2), e0244395.

Ajao, A. E., & Adeniran, J. O. (2022). Spectrum of paediatric surgical cases in a private mission teaching hospital in Nigeria. *African Journal of Paediatric Surgery*, *19*(1), 18-22.

Alanazi, F. T. H., Alharbi, B. N., Aljuaid, T. H., Alammar, F. A., Almarzouq, Y. F., Albalawi, I., Almutairi, M.N., Alshaghroud, S.M., Alhaosawi, M. E., Albalawi, M. A. S., & Alnefaie, J. S. K. (2024). The impact of vaccinations on disease prevention: A comprehensive analysis of their role in enhancing global public health and reducing morbidity and mortality rates. *International journal of health sciences*, *8*(S1), 1885-1907.

Aliyu, U., Mustapha, A., & Garun Danga, N. R. (2024). Health promotion strategies for sustainable improvement of public health outcomes in Nigeria. *UMYU Journal of Microbiology Research*, *9*(2), 187-193.

Ani, C., Ayyash, H. F., & Ogundele, M. O. (2022). Community paediatricians' experience of joint working with child and adolescent mental health services: findings from a British national survey. *BMJ paediatrics open*, *6*(1), e001381.

Anikwudike, C. N., & Agabi, P. T. (2024). Effects of Insecurity on the Socio-Political and Economic Development of Nigeria's Rural Environment: An Appraisal. *University of Nigeria Journal of Political Economy*, *14*(1), 145–160.

Armitage, J. M., Collishaw, S., & Sellers, R. (2024). Explaining long-term trends in adolescent emotional problems: what we know from population-based studies. *Discover social science and health*, *4*, 14.

Audu, L. I., Otuneye, A. T., Mairami, A. B., Mukhtar-Yola, M., & Mshelia, L. J. (2021). Determination of neonatal case-specific fatality rates in a tertiary health institution in North Central Nigeria. *BMC Pediatrics*, *21*, 302.

Awojobi, O. N. (2022). Cash transfer programmes for reducing poverty and vulnerabilities: Effects on children's health in Sub-Saharan Africa and Latin America. *SocioEconomic Challenges, 6*(1), 5-23.

Ayede, A. I., Kirolos, A., Fowobaje, K. R., Williams, L. J., Bakare, A. A., Oyewole, O. B., Olorunfemi, O. B., Kuna, O., Iwuala, N. T., Oguntoye, A., & Campbell, H. (2018). A prospective validation study in South-West Nigeria on caregiver report of childhood pneumonia and antibiotic treatment using Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS) questions. *Journal of global health*, *8*(2), 020806.

Babalola, M. O., Olaleye, D. O., & Odaibo, G. N. (2021). Epidemiology of group a rotavirus diarrhea among children hospitalized for acute gastroenteritis in ondo state, Nigeria. *Journal of Child Science*, *11*(01), e338-e349.

Berebon, C. (2025). The nexus between security, human development, and economic stability: Addressing insecurity as a threat to national growth in Nigeria. Advances in Law, Pedagogy, and Multidisciplinary Humanities, *3*(1), 28-47.

Bhave, S. Y., Sovani, A. V., & Shah, S. R. (2022). Role of Psychologist in Adolescent Medicine: An International Perspective. *Pediatric Clinics*, *69*(5), 847-864.

Chilot, D., Belay, D. G., Shitu, K., Mulat, B., Alem, A. Z., & Geberu, D. M. (2022). Prevalence and associated factors of common childhood illnesses in sub-Saharan Africa from 2010 to 2020: A cross-sectional study. *BMJ Open*, *12*(11), e065257.

Duru, C., Peterside, O., & Akinbami, F. (2013). Pattern and outcome of admissions as seen in the paediatric emergency ward of the Niger Delta University Teaching Hospital Bayelsa State, Nigeria. *Nigerian Journal of Paediatrics*, *40*(3), 232-237.

Egbewale, B. E., Karlsson, O., & Sudfeld, C. R. (2022). Childhood diarrhea prevalence and uptake of oral rehydration solution and zinc treatment in Nigeria. *Children*, *9*(11), 1722.

Ekhator-Mobayode, U. E., Gajanan, S., Ekhator, C., & Ekhator-Mobayode, U. (2022). Does health insurance eligibility improve child health: Evidence from the national health insurance scheme (NHIS) in Nigeria. *Cureus*, *14*(9), 1-9.

Eseigbe, E. E., Anyiam, J. O., Ogunrinde, G. O., Wammanda, R. D., & Zoaka, H. A. (2012). Health care seeking behavior among caregivers of sick children who had cerebral malaria in Northwestern Nigeria. *Malaria Research and Treatment, Volume 2012,* Article ID 954975, 4 pages.

Ezuruike, E. O., Ibeneme, C. A., & Uwaezuoke, S. N. (2022). Dyselectrolytemia in under-five children with acute diarrhoea-induced dehydration: a cross-sectional study in a South-East Nigerian hospital. *International Journal of Contemporary Pediatrics*, *9*(11), 1006.

Fajolu, I. B., Dedeke, I. O. F., Oluwasola, T. A., Oyeneyin, L., Imam, Z., Ogundare, E., Campbell, I., Akinkunmi, B., Ayegbusi, E.O., Agelebe, E., & Adesina, O. (2024). Determinants and outcomes of preterm births in Nigerian tertiary facilities. *BJOG: An International Journal of Obstetrics & Gynaecology*, *131*, 30-41.

Fajolu, I. B., Satrom, K. M., Ezenwa, B. N., Kein, A. C., Slusher, T. M., & Ezeaka, V. C. (2022). Current trends in neonatal morbidity and mortality: experiences from a tertiary center in Lagos, Nigeria. *The American journal of tropical medicine and hygiene*, *107*(3), 617-623.

Gabriel-Job, N., Frank-Briggs, A. I., & Douglas, S. (2022). Cerebral palsy among children seen in university of port Harcourt teaching hospital: aetiologies and comorbidities. *Journal of Advances in Medicine and Medical*

Research, 34(5), 90-96.
Graham, H., Bakare, A. A., Ayede, A. I., Oyewole, O. B., Gray, A., Neal, E., ... & Falade, A. G. (2020). Diagnosis of pneumonia and malaria in Nigerian hospitals: a prospective cohort study. *Pediatric Pulmonology*, *55*, S37-S50.
Grossberg, A., & Rice, T. (2023). Depression and suicidal behavior in adolescents. *Medical Clinics*, *107*(1), 169-182.
Hile, M. M., Msughter, A. E., & Babale, A. M. (2022). A Public Health Communication: Towards Effective Use of Social Marketing for Public Health Campaigns in Nigeria. *Annals of Community Medicine and Primary Health Care*, *5*(1), 1002.
Hoffmann, J. A., Alegría, M., Alvarez, K., Anosike, A., Shah, P. P., Simon, K. M., & Lee, L. K. (2022). Disparities in pediatric mental and behavioral health conditions. *Pediatrics*, *150*(4), e2022058227.
Igwe, M. C., & Obeagu, E. I. (2024). The scopes and implications of health communication in public health practices in Nigeria. *Journal of Bacteriology and Mycology*, *11*(1), 1218.
Imo, C. K., De Wet-Billings, N., & Isiugo-Abanihe, U. C. (2022). The impact of maternal health insurance coverage and adequate healthcare services utilisation on the risk of under-five mortality in Nigeria: a cross-sectional study. *Archives of Public Health*, *80*(1), 206.
Ipinnimo, T. M., Durowade, K. A., Afolayan, C. A., Ajayi, P. O., & Akande, T. M. (2022). The Nigeria national health insurance authority act and its implications towards achieving universal health coverage. *Nigerian Postgraduate Medical Journal*, *29*(4), 281-287.
Iwuafor, A. A., Egwuatu, C. C., Nnachi, A. U., Ita, I. O., Ogban, G. I., Akujobi, C. N., & Egwuatu, T. O. (2016). Malaria Parasitaemia and the use of insecticide-treated nets (INTs) for malaria control amongst under-5 year old children in Calabar, Nigeria. *BMC Infectious Diseases*, *16*, 151.
Kibrom, Y., Tekeste, E., Tesfamariam, S., Ogbe, Z., & Mohammed, M. (2024). Clinical profile and associated comorbidities of cerebral palsy in children visiting Orotta National Referral Hospital, Eritrea: a cross-sectional study. *BMC Pediatrics*, *24*, 458.
Mernie, G., Kloos, H., & Adane, M. (2022). Prevalence of and factors associated with acute diarrhea among children under five in rural areas in Ethiopia with and without implementation of community-led total sanitation and hygiene. *BMC Pediatrics*, *22*, 148.
Michael, D. U., Ozoiza, T. B., Danjuma, S. D., Olushola, D. O., Joy, B. F., & Collins, J. (2021). Prevalence and Determinants of Mortality among Preterm Infants in Jos University Teaching Hospital, Jos, Nigeria. International Journal of Scientific Study, 9(6), 71-76.
Mokuolu, O. A., Adesiyun, O. O., Ibrahim, O. R., Suberu, H. D., Ibrahim, S., Bello, S. O., Mokikan, M., Obasa, T. O., & Abdulkadir, M. B. (2022). Appraising neonatal morbidity and mortality in a developing country categorized by gestational age grouping and implications for targeted interventions. *Frontiers in Pediatrics*, *10*, 899645.
Natnael, T., Lingerew, M., & Adane, M. (2021). Prevalence of acute diarrhea and associated factors among children under five in semi-urban areas of northeastern Ethiopia. *BMC Pediatrics*, *21*, 290.
Ochoga, M. O., Ejeliogu, E. U., Michael, A., Ajeh, A. O., Abah, R. O., Eseigbe, E. E., Abdallah, R., & Samba, B. N. (2021). Prevalence, risk factors and outcomes of perinatal asphyxia in newborns at Benue state university teaching hospital Makurdi. *Journal of Research in Basic & Clinical Sciences, 2*(1), 17-24.
Ogbo, P. U., Aina, B. A., & Soremekun, R. O. (2023). Barriers to acute management of diarrhea in the home setting: An explorative study of under-five caregivers in southwestern Nigeria. *American Journal of Pharmacotherapy and Pharmaceutical Sciences*, *18,* 1-8.
Okeke, K. N., Ezeogu, J., Echendu, S. T., Eberendu, G. I., Okoro, J. C., Emechebe, G. O., Nri-Ezedi, C. A., Ifezulike, C. C., Edokwe, S. E., Nwaneli, EI., Agu, V. N., Umeadi, E. N., Ulasi, T. O., Odita, A. O. (2022). Pattern of childhood morbidity and outcome of childhood admission in Imo state University Teaching Hospital Orlu Imo state: A 3year review. *International Journal of Biomedical Research*, *13*(1), e5707.
Okike, C. O., Emeagui, D. O., Ajaegbu, O. C., & Muoneke, U. V. (2022). Outcome of treatment of children with Epilepsy in a Nigerian Tertiary Hospital. *International Journal of Medicine and Health Development*, *27*(1), 74-80.
Okoronkwo, N. C., Onyearugha, C. N., & Ohanenye, C. A. (2018). Pattern and outcomes of paediatric medical admissions at the Living Word Mission Hospital, Aba, South East Nigeria. *Pan African Medical Journal*, *30*, 202.
Oladunni, A. A., Afolabi, E. O., Terhemen, A., Adewusi, B. A., Ndubisi, A. C., Ikpuri, E., Opone, I. S., Umunna, C., Oriotor, E., Abdou, S. A. S., & Oladunni, N. O. (2024). Rotavirus surveillance and vaccination in Nigeria: current challenges and important next steps. *Pan African Medical Journal One Health*, *13*(21).
Olarewaju, O. A. (2021). Insecurity in northern Nigeria: Implications for maternal and child health. *Clinical Epidemiology and Global Health*, *12*, 100869.
Olawade, D. B., Wada, O. Z., Aderinto, N., Odetayo, A., Adebisi, Y. A., Esan, D. T., & Ling, J. (2025). Factors contributing to under-5 child mortality in Nigeria: A narrative review. *Medicine*, *104*(1), e41142.
Oluwadare, L. P., Oladokun, R. E., Ogunbosi, B. O., Labaeka, A. A., & Taiwo, O. J. (2025). Clinical Epidemiology and Geospatial Distribution of Cases of Severe Malaria in Children at a Tertiary Care Health Facility in Southwest Nigeria. *International Journal of Medicine and Health Development*, *30*(2), 133-145.
O'Meara, W. P., Mangeni, J. N., Steketee, R., & Greenwood, B. (2010). Changes in the burden of malaria in sub-Saharan Africa. *The Lancet Infectious Diseases*, *10*(8), 545-555.
Orjingene, O. (2021). Full childhood immunization coverage and incidence of vaccine preventable disease in Nigeria: a regression analysis. *International Journal of Community Medicine and Public Health*, 8(12), 5757-5764
Ozughalu, J. N., Orji, A. E., Ekwebene, O. C., & Edeh, C. G. (2022). Trends in childhood morbidity and mortality in the era of pandemic. *International Journal of Health Sciences and Research*, *12*(2), 227-32.
PaedSurg Africa Research Collaboration (2021). Paediatric surgical outcomes in sub-Saharan Africa: a multicentre, international, prospective cohort study. *BMJ Global Health*, *6*(9). e004406.
René, S., Santos, A. S. D., Duarte, C. S., Yarid, S. D., Santos, C. S., & Neta, M. M. S. D. A. (2025). Challenges of Sustainable Development Goal 3. *Revista Bioética*, *33*, e3832PT.
Rodrigo, M. A., Sanz, A. C., Pina, C. S., Pérez, C. V., Rodriguez, M. F., de Luna, G. O., Galdeano, P. A., & Pettoello-Mantovani, M. (2021). The role of pediatricians in providing greater-quality care for children: an ongoing debate. *The Journal of pediatrics*, *231*, 303-304.
Shim, R., Szilagyi, M., & Perrin, J. M. (2022). Epidemic rates of child and adolescent mental health disorders require an urgent response. *Pediatrics*, *149*(5), e2022056611.

Touré, M., Keita, M., Kané, F., Sanogo, D., Kanté, S., Konaté, D., Diarra, A., Sogoba, N., Coulibaly, M. B., Traoré, S. F., & Doumbia, S. (2022). Trends in malaria epidemiological factors following the implementation of current control strategies in Dangassa, Mali. *Malaria Journal*, *21*, 65.

Udujih, O. G., Udujih, H. I., Ukaga, C. N., & Iwuala, C. C. (2020). Health-seeking behaviour among caregivers in treatment of childhood malaria in Imo State, Nigeria. International Journal of Tropical Disease and Health, *41*, 38-45.

WHO (2020). WHO World Malaria Report 2020. World Health Organisation. Pp. 1–299. Retrieved from https://www.who.int/publications/i/item/9789240015791.

Wilson, S., & Dumornay, N. M. (2022). Rising rates of adolescent depression in the United States: Challenges and opportunities in the 2020s. *Journal of Adolescent Health*, *70*(3), 354-355.

Yusuf, M. O., Afegbua, D. S., Shaibu, P. A., Yahaya, I., Gideon, I., Yahaya, R., Bello, I. A., Imoudu, I. A. M., Musa, I. K., & Audu, L. (2025). Pattern of morbidity and mortality in the emergency paediatric unit of a tertiary hospital in North-Eastern Nigeria. *The Scholar Journal of Health Sciences*, *1*(1), 64-71.

Zickafoose, A., Ilesanmi, O., Diaz-Manrique, M., Adeyemi, A. E., Walumbe, B., Strong, R., Wingenbach, G., Rodriguez, M. T., & Dooley, K. (2024). Barriers and challenges affecting quality education (Sustainable Development Goal# 4) in sub-Saharan Africa by 2030. *Sustainability*, *16*(7), 2657.