Journal: Texila International Journal of Public Health
Publisher: Texila International Journal
ISSN: 2520-3134
Volume 13 Issue 4, 2025
DOI: 10.21522/TIJPH.2013.13.04.Art030

# Decade of Progress: Trends in Key Maternal Health Performance Indicators in The Gambia

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***Abstract***

*Maternal health remains a pressing public health challenge in The Gambia, where maternal mortality rates have historically exceeded 300 deaths per 100,000 live births. Despite national efforts and global partnerships aligned with Sustainable Development Goal (SDG) 3.1, which aims to reduce maternal mortality to below 70 per 100,000 live births by 2030, significant disparities persist. This study, Decade of Progress: Trends in Key Maternal Health Performance Indicators in The Gambia, evaluates the effectiveness of community-based maternal health interventions implemented between 2010 and 2020. Employing a retrospective quasi-experimental design and secondary data analysis, the study focuses on eight key regions—Banjul, Kanifing, Brikama, Mansakonko, Kerewan, Kuntaur, Janjanbureh, and Basse—selected for their diverse socioeconomic profiles and disparities in healthcare access. Quantitative data were supplemented with qualitative insights from structured questionnaires and hospital interviews. Findings reveal substantial improvements in maternal health indicators. Health facility births increased across all ethnic groups. Skilled birth attendance rose from 57% to 84%, traditional birth attendant involvement declined sharply from 26.96% to 6.73%, reflecting a shift toward professionalized care but postnatal care coverage improved. These trends suggest that the deployment of community health workers and traditional birth attendant training, have contributed to improved maternal health outcomes, although disparities still persist. This study provides actionable insights for policymakers, healthcare providers, and researchers, emphasizing the need for inclusive strategies and data-driven planning to reduce maternal mortality further and enhance maternal care in The Gambia.*

***Keywords:*** *Antenatal Care, Maternal Health, Maternal Mortality, Postnatal Care, The Gambia.*

## Introduction

Maternal and child health remains a fundamental cornerstone of sustainable development and public health in any nation, especially in developing countries, where morbidity and mortality rates remain unacceptably high [1]. Despite substantial national efforts, global partnerships, and the existence of strategic frameworks, the health outcomes for mothers and children in most developing countries have been largely unsatisfactory [2]. These disparities reflect deep-rooted systemic challenges, including inequitable access to health services, socio-cultural barriers, poor funding, and inadequate infrastructure [3]. The Sustainable Development Goals (SDGs), established in 2015 by the United Nations, represent a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity [4]. Specifically, SDG 3.1

***Received: 18.08.2025*** ***Accepted: 18.09.2025*** ***Published on: 24.12.2025***
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aims to reduce the global maternal mortality ratio (MMR) to less than 70 per 100,000 live births, while SDG 3.2 focuses on ending preventable deaths of newborns and children under five by 2030 [5]. The Gambia, as a signatory to the SDGs and a member of the United Nations, is expected to align its national development policies and health programming with these global targets [6].

With the highest maternal death rate of 597/100,000 as of 2017, The Gambia is rated 13th [7]. The World Health Organisation (WHO) estimates that in 2017, there were around 430 maternal deaths for per 100,000 live births, which is a high rate historically [8]. This number underscores the urgency of effective measures. A hospital-based retrospective analysis also found that there were about 700 maternal deaths over the course of eight years, with a significant burden of new-born hospitalisation and an annual death rate ranging from over 1400 to 2100 deaths per 100,000 live births [9, 10]. According to the NDP of 2018 – 2021, the Gambia government set a goal in 2017 to lower maternal and neonatal mortality from 433 to 315 per 100,000 people nationwide by 2021 [11]. Over the past ten years, The Gambia has seen significant advancements and programs aimed at enhancing maternal health through community-based interventions, as published in its Demographic Health Surveys. Data for a variety of monitoring and effect evaluation indicators in the fields of population, health, and nutrition are provided by the nationally representative Demographic and Health Surveys (DHS), which are household surveys. Using Key Performance Indicators (KPIs) as recorded in the DHS, shows the impact and efficacy of these important initiatives from 2010 to 2020 will be the main focus of this endeavour [12].

The study aims to evaluate community-based maternal health interventions in The Gambia between 2010 and 2020 using the trends in key maternal health performance indicators in The Gambia. This study examines the trends in maternal mortality across various data sources. It evaluates the impact of maternal healthcare utilization, focusing on the effectiveness of interventions based on available data. This study can provide valuable insights and benefits across various stakeholders such as researchers, practitioners, patients and policy-makers. Researchers, practitioners, and policymakers can utilize the findings of the study to improve maternal and child health care by enhancing their ante-natal care (ANC) and post-natal care (PNC) services. This is so because improved service delivery ensures the realization of the best care for pregnant women, thereby reducing the risks of morbidity and mortality.

## Methodology

### Research Design and Site

This study assessed community-based maternal health interventions in The Gambia using a retrospective quasi-experimental design and secondary data analysis. The Demographic and Health Surveys (DHS) from 2013 and 2019–2020 provided data, and structured questionnaires and hospital interviews provided qualitative insights. There are about 2,779,799 million people living in the Gambia, [13] and 101,262 births each year from [14]. The following locations as documented in the DHS were considered in the present study: Banjul, Kanifing, Brikama, Mansakonko, Kerewan, Kuntaur, Janjanbureh and Basse. According to [6], there are more than 120 healthcare facilities in these locations. The Ministry of Health oversees the management of these medical institutions and ensures they offer crucial maternal health services. With a reported maternal mortality ratio of over 300 deaths per 100,000 live births as of 2020, maternal health is still a major public health concern in The Gambia [15]. This statistic emphasises how urgently effective initiatives are needed to lower maternal fatalities.

Increasing access to competent care during childbirth has been made possible by the

training and deployment of Community Health Workers (CHWs) and traditional birth attendants (TBAs), two of the most popular community-based maternal healthcare interventions [17]. The study will focus on community-based medical facilities in a few selected urban and rural areas of The Gambia. Because of their varied socioeconomic environments and disparities in access to medical care, these regions have been recognized as crucial locations for maternal health interventions. This study attempts to present a comprehensive picture of how well community-based interventions work to improve maternal health outcomes in The Gambia by combining quantitative data from DHS with qualitative insights from community interactions.

## Sampling Technique and Sample Size

### Sampling Technique

To analyze trends in key maternal health indicators in The Gambia between 2010 and 2020, data from the Demographic and Health Surveys (DHS) conducted in 2013 and 2019-2020 were used to assess the performance of health facilities in The Gambia.

### Data Collection

Available data on trends in KPIs for Maternal Health in The Gambia were collected from published DHS 2013 and 2019/2020 reports. They are on the following aspects: 1) Trends in antenatal care coverage, 2) Trends in place of birth, 3) Trends in Health facility births by Local Government Area (LGA), 4) Trends in Assistance during delivery, 5) Delivery by Caesarean Section and 6) Postnatal Coverage. To avoid using direct images from the document, data extraction were entered into Microsoft Excel and graphs plotted.

### Data Analysis

Data collected in this study were already calculated percentages, hence they were just plotted directly into charts for both years:

1. Antenatal Care Coverage.
2. Number of antenatal care visits and timing of first visit.
3. Component of Antenatal Care.
4. Number of Tetanus Toxoid Injections.
5. Assistance During Delivery.
6. Type of Provider of Postnatal check for the mother.
7. Problems in Accessing Health care in both 2013 and 2019 DHS.

### Inclusion

Demographic Health Survey (DHS) in The Gambia within the timeframe of this study (2010 - 2020) were used and it is worthy to note that they were collected in 2013 and 2019/2020.

### Exclusion

DHS data was collected outside the selected timeframe of the study.

## Expected Outcomes

This study is expected to identify the key factors contributing to the reduction in maternal mortality in India, highlighting the impact of public health interventions, and identifying areas where further improvements are necessary to meet national and global targets for maternal health.

## Results

Figure 1 shows the trends in antenatal care coverage in The Gambia, comparing data from 2013 and 2019/2020. As shown in the figure, slight improvement was observed in first-trimester ANC attendance, increasing from 37.65% to 42.74%, suggesting that more women sought early pregnancy care. The percentage of women attending four or more ANC visits showed minimal improvement, rising slightly from 77.64% to 78.48%, indicating consistent utilization of multiple ANC services over time. More so, significant progress was recorded in women receiving ANC from skilled providers, which increased substantially from 86.44% to 97.8%, representing an 11.36% improvement

indicating that more pregnant women received care from qualified healthcare professionals. The percentage of births protected against neonatal tetanus decreased from 41.54% to 35.36%, a decline of 6.18%.

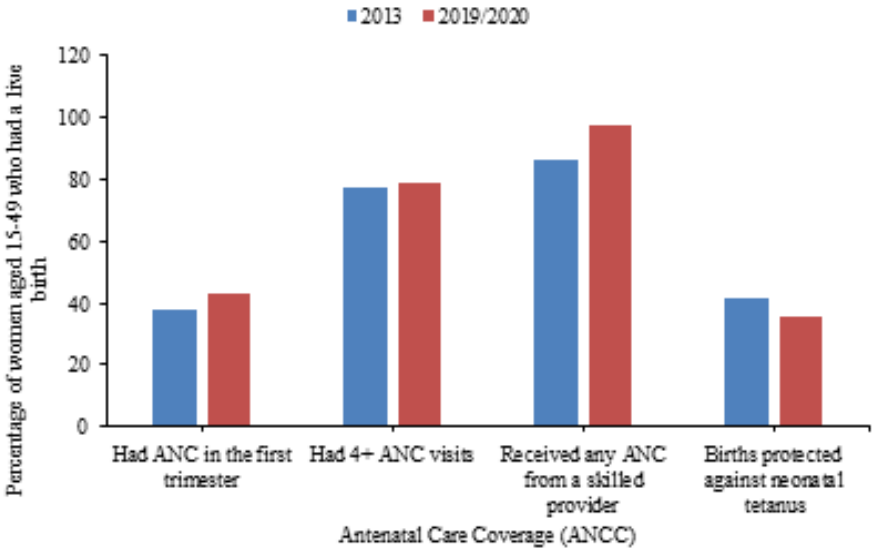


**Figure 1.** Trends in Antenatal Care Coverage (The ANC) [14, 30]

A total of live births across various Local Government Areas (LGAs) were analyzed for the percentage delivered in health facilities for 2013 and 2019/2020. There was a significant increase in health facility births in all LGAs from 2013 to 2019/2020. The Mandinka/Jahanka region increased from 60.89% to 85.76%, Wollof from 64.47% to 85.45%, and Jola/Karoninka from 73.67% to 86.36%. The Fula/Tukular/Lorobo region increased from 55.04% to 77.44%, while Serere improved from 75.78% to 92.50%. Serahuleh also showed a higher increase from 46.68% to 85.00%. The Creole/AkuMarabout group had the lowest value of 19.90% in 2013, but rose to 90.82% in 2019/2020. Manjago reached 100% of health facility births in 2019/2020, up from 58.53% in 2013. Bambara increased from 69.92% to 89.71%, and the "Others" category rose from 75.22% to 95.96%. Non-Gambian births also increased from 71.42% to 79.33%. These results indicate significant improvements in health facility delivery rates across all LGAs over the period studied.

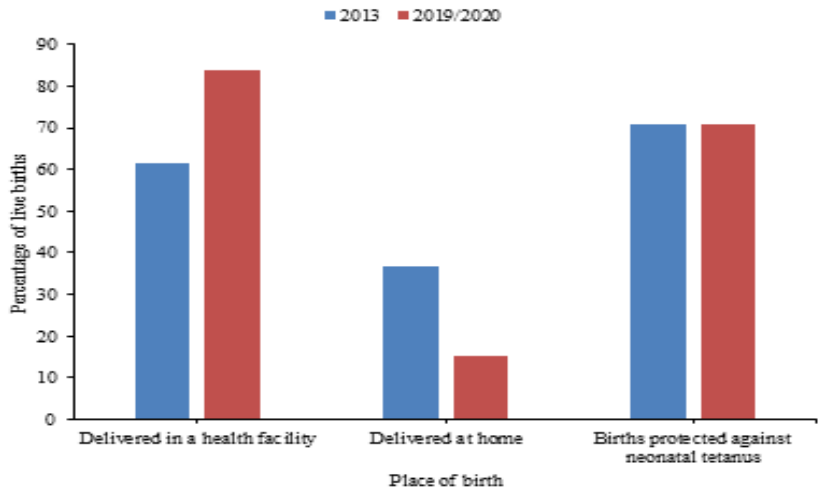


**Figure 2.** Trends in Place of Birth (Facility-Based Delivery) [14, 30]

Between 2013 and 2019/2020, health facility births increased substantially across all Local Government Areas (LGAs) in The Gambia. The Mandinka/Jahanka region saw an increase from 60.89% to 85.76%, Wollof from 64.47% to 85.45%, and Jola/Karoninka from 73.67% to 86.36%. Fula/Tukular/Lorobo rose from 55.04% to 77.44%, Serere from 75.78% to 92.50%, and Serahuleh from 46.68% to 85.00%. The Creole/AkuMarabout group showed a dramatic increase from 19.90% to 90.82%, while Manjago increased from 58.53% to 100%. Bambara increased from 69.92% to 89.71%, and the "Others" category rose from 75.22% to 95.96%. Non-Gambian births increased from 71.42% to 79.33%.

Improvement in first-trimester ANC attendance from 37.65% to 42.74% shows a critical advancement in early pregnancy care initiation, though it remains below the WHO recommendation that all pregnant women should receive their first ANC visit within the first trimester. This finding is consistent with systematic reviews by Moller et al. (2017) and Benova et al. (2018), which demonstrated that while ANC coverage has improved across sub-Saharan Africa, early initiation remains challenging due to cultural beliefs, geographical barriers, and limited awareness of pregnancy danger signs. The Gambian experience mirrors trends observed in neighboring West African countries, where Countdown to 2030 reports indicate that first-trimester ANC attendance averages 45% across the region (Victora et al., 2021).

**Table 1.** Health Facility Births by Local Government Area (LGA) – Number of Deliveries per Region

| **Regions** | **Percentage of live births in the 5 years before the survey that were delivered in a health facility** | |
|---|---|---|
| | **2013** | **2019/2020** |
| Mandinka/Jahanka | 60.89% | 85.76% |
| Wollof | 64.47% | 85.45% |
| Jola/Karoninka | 73.67% | 86.36% |
| Fula/Tukular/Lorobo | 55.04% | 77.44% |
| Serere | 75.78% | 92.50% |
| Serahuleh | 46.68% | 85.00% |
| Creole/AkuMarabout | 19,90% | 90.82% |
| Manjago | 58.53% | 100% |
| Bambara | 69.92% | 89.71% |
| Others | 75.22% | 95.96% |
| Non-Gambian | 71.42% | 79.33% |

*Source: [14, 30]*

Between 2013 and 2019/2020, the percentage of births assisted by doctors in The Gambia increased slightly from 7.03% to 10.90%. Births attended by nurses or midwives rose substantially from 50.15% to 72.95%, reflecting the majority of skilled birth assistance. Assistance by auxiliary nurses or community nurse attendants decreased markedly from 6.87% to 0.87%. Traditional birth attendants' involvement declined significantly from 26.96% to 6.73%. Births assisted by relatives or others decreased from 6.79% to 5.54%. The proportion of births with no assistance increased slightly from 1.72% to 3.02%. Cases reported as "don't know" or missing dropped from 0.48% to 0.00%. Skilled birth attendance increased from 57% in 2013 to 84% in 2019/2020, with nurses and midwives being the primary providers of delivery care.

**Table 2.** Assistance during Delivery – Skilled Birth Attendance (SBA)

| **Regions** | **Percentage of live births in the 5 years before the survey Those were delivered in a health facility** | |
|---|---|---|
| | **2013** | **2019/2020** |
| Doctor | 7.03% | 10.90% |
| Nurse/ Midwife | 50.15% | 72.95% |
| Auxiliary nurse/ Community nurse attendant | 6.87% | 0.87% |
| Traditional birth attendant | 26.96% | 6.73% |
| Relative/ other | 6.79% | 5.54% |
| No one | 1.72% | 3.02% |
| Don't know/Missing | 0.48% | 0.00% |

*Source: [14, 30]*

Figure 3 presents the trends in caesarean section deliveries and postnatal coverage in The Gambia, comparing data from 2013 and 2019/2020. The findings showed an increase in caesarean section rates, rising from 2.0% to 3.69%, representing an 84.5% relative increase. Furthermore, postnatal coverage improved substantially, rising from 76.0% to 88.0%, indicating a 12% increase in women receiving critical postpartum care.

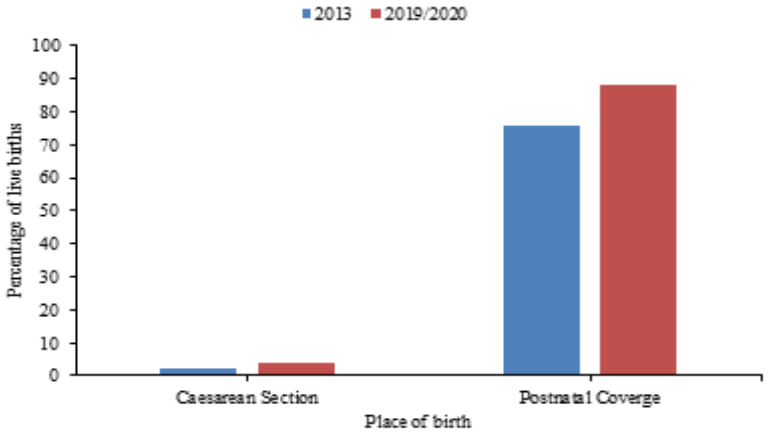


**Figure 3.** Trends in Delivery by Caesarean Section and Postnatal Coverage [14, 30]

## Discussion

The increase in ANC provision by skilled providers from 86.44% to 97.8% represents an exceptional achievement, surpassing WHO benchmarks and exceeding performance in many comparable low- and middle-income countries. This 11.36% improvement suggests successful implementation of health system strengthening initiatives, particularly in rural areas where traditional birth attendants previously dominated maternal health service provision. Similar improvements have been documented in Ghana and Rwanda, where systematic investments in midwifery training and deployment resulted in comparable skilled provider coverage rates [17, 18]. However, the concerning decline in neonatal tetanus protection from 41.54% to 35.36% warrants immediate attention. This reduction contradicts global efforts to eliminate maternal and neonatal tetanus and suggests gaps in immunization program implementation or supply chain management. The decline is particularly troubling given the emphasis placed on tetanus toxoid vaccination by the WHO, as a cost-effective maternal health

intervention with significant neonatal mortality reduction potential [19].

The COVID-19 pandemic has substantially impacted and disrupted the delivery of essential Reproductive, Maternal, Newborn, Child, and Adolescent Health and Nutrition (RMNCAH + N) services [20]. The recommendation to curb the pandemic restricts travel and urges people to stay home. Disruptions have occurred across various levels of healthcare delivery, affecting service utilization and accessibility. Thus, enforcement of these measures has posed unprecedented difficulties for many vulnerable women accessing health services. In the present study, improvements in health facility delivery rates across all ethnic groups and Local Government Areas represent perhaps the most significant achievement documented. The universal increase from ranges of 19.90% to 100% (Creole/AkuMarabout and Manjago groups, respectively) shows successful implementation of facility-based delivery promotion strategies. These improvements exceed those documented in most sub-Saharan African countries and align with success stories from Ethiopia and Rwanda, where focused government policies and community mobilization achieved similar transformations [21, 18]. The particularly impressive improvement in the Creole/AkuMarabout group from 19.90% to 90.82% suggests that targeted interventions can overcome initial barriers to facility-based delivery, even among populations with historically low utilization rates. This finding supports the theoretical frameworks proposed by [22] regarding the modifiability of healthcare utilization patterns through appropriate interventions that address predisposing, enabling, and need factors.

An increase in skilled birth attendance from 57% to 84% represents substantial progress toward universal skilled birth attendance, though it remains below the 90% target established in the Global Strategy for Women, Children, and Adolescents' Health [23]. The shift from traditional birth attendants (26.96% to 6.73%) to nurses and midwives (50.15% to 72.95%) reflects the successful implementation of evidence-based maternal health policies emphasizing skilled birth attendance as a critical intervention for reducing maternal and neonatal mortality. This transformation aligns with findings from systematic reviews demonstrating that countries achieving significant reductions in maternal mortality consistently prioritized improvements in skilled birth attendance [24, 25]. However, the slight increase in births with no assistance (1.72% to 3.02%) suggests persistent access barriers for the most marginalized populations, consistent with equity concerns documented across sub-Saharan Africa [26].

The increase in caesarean section rates from 2.0% to 3.69%, while representing an 84.5% relative increase, maintains The Gambia within the WHO's recommended range of 5-15% for population-based caesarean section rates. This increase suggests appropriate clinical decision-making rather than the concerning trend toward unnecessary caesarean sections documented in middle-income countries [27]. The rate remains consistent with other low-income countries in sub-Saharan Africa, where caesarean section rates typically range from 2-8% [28]. Similarly, improvement in postnatal coverage from 76.0% to 88.0% represents significant progress toward comprehensive maternal health service provision. This improvement exceeds achievements documented in many comparable countries and approaches WHO recommendations for universal postnatal care coverage [29]. The finding agrees with evidence demonstrating that postnatal care represents a critical window for preventing maternal and neonatal complications, yet remains the most neglected component of the maternal health continuum.

Findings from this study showed significant improvements in key maternal health indicators in The Gambia The Gambia between 2013 and 2019/2020, demonstrating substantial progress toward achieving Sustainable between 2013

and 2019/2020, demonstrating significant progress toward achieving Sustainable Development Goal 3.1, which aims to reduce global maternal mortality ratio to less than 70 per 100,000 live births by 2030. The observed trends align with broader regional improvements documented across sub-Saharan Africa, though the trajectory from The Gambia shows both convergence with and divergence from continental patterns. All the progress toward decreasing the MMR has to be revised and revamped. The need to ensure convergence among stakeholders when structuring maternal health policies to enable effective health reforms at all levels of health care.

## Conclusion

This research evaluated maternal and child health trends in The Gambia between 2010 and 2020, focusing on progress toward Sustainable Development Goals (SDGs) 3.1 and 3.2. By comparing data from The Gambia Demographic and Health Surveys (DHS) 2013 and 2019/2020, augmented with qualitative analysis, the study provides empirical and thematic perspectives on maternal and child health outcomes. Two key objectives guided the research: evaluating trends in antenatal care (ANC) and skilled birth attendance (SBA), which serve as vital markers of health system effectiveness, equity, and accessibility. Quantitatively, findings show modest but positive progress across multiple indicators. Increasing community awareness, improved child health interventions, and scaled-up immunization efforts contributed to these gains. The proportion of women attending four or more ANC visits increased, while skilled birth attendance improved, indicating greater advances in institutional delivery in rural areas. Qualitative analysis revealed deeper systemic challenges through four major themes: geographic and infrastructural access, socioeconomic constraints, community trust and service engagement, and program implementation gaps. Long travel distances, poor road networks, and dysfunctional referral systems created barriers, particularly in rural areas. Socioeconomic challenges, including poverty, out-of-pocket costs, and food insecurity, prevented timely care access. Hidden costs such as transportation and facility fees served as deterrents despite theoretically "free" services. The study highlighted that technical fixes alone are insufficient. Maternal and child health outcomes are deeply influenced by social determinants including education, gender equity, and household income. Addressing these requires cross-sectional collaboration with education, agriculture, and social protection programs. While The Gambia demonstrates progress, it remains off-track in meeting the SDGs. In conclusion, this study presents a mixed picture. Meaningful progress is evident through improvements in child mortality, ANC coverage, and service utilization. However, insufficient pace and persistent regional, socio-economic, and systemic disparities undermine progress. Success requires strengthening health system functions while building trust and accountability.

## Ethical Considerations

This study does not require direct interaction with human participants; instead, it focuses on secondary data analysis. However, written consent from the WHO Country Office, the Ministry of Health in The Gambia, the Bureau of Statistics, and pertinent NGOs will be required before any data may be used. The relevant Ethics Committee in The Gambia will provide ethical approval for the qualitative component, which includes group discussions and hospital interviews. Strict confidentiality will be guaranteed. Hard copies will be kept under lock and key, and all digital material will be stored on a password-protected computer.

To maintain anonymity, codes will be used in place of identifying information throughout analysis. The results will be disseminated to pertinent parties while protecting the privacy of

the data sources. Participants in the trial face little danger. The results will be disseminated to relevant parties while preserving the privacy of the data sources. Any possible conflicts of interest will be disclosed and handled correctly.

## Acknowledgement

This project would not have been possible without the support of many people. Many thanks to my supervisor, Associate Professor Abiodun Olaiya Paul (Ph.D.), who provided me with the mentorship required throughout the project work. Many thanks to my husband Dr Idowu Araoyinbo for the moral support in the PhD process, my special thanks to my mentee Dr Armanda Nangmo and Ms. Jarra Balajo for the field level support in data collection.

## Conflict of Interest

The authors declare no conflict of interest.

## References

[1]. Elemuwa, C., Nwosu, I., & Gimba, J., 2024, Community dialogue and maternal health outcomes in Nigeria. *Community Dialogue Review,* 7(3), 41–58.

[2]. NPC & ICF, 2019, Nigeria Demographic and Health Survey 2018., Abuja, Nigeria: *National Population Commission and ICF International.*

[3]. Okeke, C., Ezenwaka, U., Ekenna, A., Onyedinma, C., & Onwujekwe, O., 2023, Analysing the progress in service delivery towards achieving universal health coverage in Nigeria: A scoping review. *BMC Health Services Research,* 23(1), 1094.

[4]. Mordecai, O., 2023, A Ten-Year Retrospective Study Evaluating the Effectiveness of the Maternal New-born and Child Health Weeks Intervention among Pregnant Women in Nigeria, 3(1), 17–30. https://www.researchgate.net/publication/373949175

[5]. Mordecai, O., & Jeremiah, G. O., 2023, The Impact of Poverty on Under 5 Children in Rural Communities of the West African Region Alliance for Sustainable Development, 12, 645. https://www.researchgate.net/publication/374255751

[6]. Ministry of Health., The Gambia, 2021, National Health Policy 2021-2030. Banjul: *Government Printer.*

[7]. CIA World Factbook., 2019, Maternal mortality rate-country comparison. Available at: https://www.indexmundi.com/g/r.aspx?c=ga&v=2223.

[8]. World Health Organization (WHO), 2019, Trends in maternal mortality 2000 to 2017: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. *Geneva:* World Health Organization. Available at: https://iris.who.int/handle/10665/327596

[9]. Idoko, P., Anyanwu, M. O., & Bass, S. A., 2017, A retrospective analysis of trends in maternal mortality in a Gambian tertiary health centre. *BMC Research Notes,* 10(1), 493. https://doi.org/10.1186/s13104-017-2817-0

[10]. Camara., B., Oluwalana, C., Miyahara., R., Lush, A., Kampmann, B., Manneh., K., Okomo, U., D'Alessandro, U., & Roca, A., 2021, Stillbirths, neonatal morbidity, and mortality in health-facility deliveries in urban Gambia. *Frontiers in Pediatrics,* 9, 579922. https://doi.org/10.3389/fped.2021.579922

[11]. Gambia Government, 2017, The Gambia national development plan (2018–2021). Ministry of Finance and Economic Affairs, Banjul, *The Gambia,* pp. 90–95.

[12]. Mabala, M., 2018, Barriers to accessing maternal health services in Gambia: A qualitative study. *BMC Health Services Research*, 18, 530. http://dx.doi.org/10.1186/s12905-024-03177-x

[13]. Cham, M., Sundby, J., & Vangen, S., 2005, Maternal mortality in the rural Gambia, a qualitative study on access to emergency obstetric care. *Reproductive Health,* 2(1), 3. https://doi.org/10.1186/1742-4755-2-3

[14]. The Gambia Bureau of Statistics (GBOS) and ICF International, 2014, The Gambia Demographic and Health Survey 2013. Banjul, The Gambia, and Rockville, Maryland, *USA: GBOS and ICF International.* Available at: http://dhsprogram.com/pubs/pdf/FR289/FR289.pdf

[15]. WHO, 2021, Mortality and burden of disease. World Health Organization, 2021. *WHO: Maternal mortality*. Available from: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality

[16]. Ferguson., L., Hasan, R., Boudreaux, C., Thomas, H., Jallow, M., Fink, G., & Project Implementation Committee (PIC), 2020, Results-based financing to increase uptake of skilled delivery services in The Gambia: using the 'three delays' model to interpret midline evaluation findings. *BMC Pregnancy and Childbirth*, 20(1), 712. https://doi.org/10.1186/s12884-020-03387-9

[17]. Amouzou., A., Leslie, H. H., & Ram, M., 2019, Advances in the measurement of coverage for RMNCH and nutrition: From contact to effective coverage. *BMJ Global Health*, 4, i114–i124. doi:10.1136/bmjgh-2018-001297

[18]. Sayinzoga., F., Bijlmakers, L., van Dillen, J., Mivumbi, V., Ngabo, F., & van der Velden, K., 2016, Maternal death audit in Rwanda 2009–2013: A nationwide facility-based retrospective cohort study. *BMJ Open*, 6, e009734. 10.1136/bmjopen-2015-009734

[19]. Blencowe, H., Cousens, S., Jassir, F. B., Say, L., Chou, D., Mathers, C., Hogan, D., Shiekh, S., Qureshi, Z. U., You, D., & Lawn, J. E., 2016, Stillbirth Epidemiology Investigator Group. National, regional, and worldwide estimates of stillbirth rates in 2015, with trends from 2000: A systematic analysis. *Lancet Global Health*, 4(2), e98-e108. doi: 10.1016/S2214-109X(15)00275-2.

[20]. Stein., D., Ward, K., & Cantelmo, C., 2020, Estimating the potential impact of COVID-19 on mothers and newborns in low- and middle-income countries. *Health Policy Plus.* Available from: https://medium.com/@HealthPolicyPlus/estimating-the-potential-impact-of-covid-19-on-mothers-and-newborns-in-low-and-middle-income-3a7887e4a0ff

[21]. Mehari, M. A., Maeruf, H., Robles, C. C., Woldemariam, S., Adhena, T., Mulugeta, M., Haftu, A., Hagose, H., & Kumsa, H., 2020, Advanced maternal age pregnancy and its adverse obstetrical and perinatal outcomes in Ayder comprehensive specialized hospital, Northern Ethiopia, 2017: A comparative cross-sectional study. *BMC Pregnancy Childbirth*, 20(1), 60. doi: 10.1186/s12884-020-2740-6.

[22]. Andersen, R., & Newman, J. F., 2005, Societal and Individual Determinants of Medical Care Utilization in the United States. Milbank Q., 83(4), 10.1111/j.1468-0009.2005.00428.x.

[23]. World Health Organization (WHO), 2015, Strategies toward ending preventable maternal mortality. *Geneva: World Health Organization.*

[24]. Campbell, O. M., & Graham, W. J., 2006, Maternal Survival Series steering group. Strategies for reducing maternal mortality: getting on with what works. *Lancet*, 368(9543), 1284-99. doi: 10.1016/S0140-6736(06)69381-1.

[25]. Souza, J. P., Gülmezoglu, A. M., Vogel, J., & Say, L., 2013, Moving beyond essential interventions for reduction of maternal mortality (the WHO Multicountry Survey on Maternal and Newborn Health): A cross-sectional study. *Lancet*, 381(9879), 1747-55. doi: 10.1016/S0140-6736(13)60686-8.

[26]. Keats, E. C., Akseer, N., & Bhatti, Z., 2018, Assessment of Inequalities in Coverage of Essential Reproductive, Maternal, Newborn, Child, and Adolescent Health Interventions in Kenya. *JAMA Network Open*, 1(8), e185152. 10.1001/jamanetworkopen.2018.5152

[27]. Betran, A. P., Merialdi, M., Lauer, J. A., Bing-Shun, W., Thomas, J., & Van Look, P., 2007, Rates of caesarean section: Analysis of global, regional and national estimates. *Paediatrics, Perinatology and Epidemiology*, 21, 98–113.

[28]. Harrison, M. S., & Goldenberg, R. L., 2016, Cesarean section in sub-Saharan Africa. *Maternal Health, Neonatol and Perinatology*, 2, 6. https://doi.org/10.1186/s40748-016-0033-x

[29]. Wojcieszek, A. M., Bonet, M., & Portela, A., 2023, WHO recommendations on maternal and newborn care for a positive postnatal experience: Strengthening the maternal and newborn care continuum. *BMJ Global Health*, 8, e010992. doi:10.1136/bmjgh-2022-010992

[30]. The Gambia Bureau of Statistics (GBOS), 2021, The Gambia Demographic and Health Survey 2019-20. Banjul, *The Gambia: GBOS. Fieldwork conducted Nov 2019–Mar 2020.*