ARTICLE-STUDY

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IMPACT OF NIGERIA STATE HEALTH INVESTMENT PROJECT GOALS ON MATERNAL AND CHILD HEALTH SERVICES IN BAUCHI STATE, NIGERIA FROM 2016 TO 2020

ABSTRACT

Background:
Nigeria continues to experience one of the highest maternal and child mortality rates globally, despite multiple health reforms and international support.
In response, the Nigeria State Health Investment Project (NSHIP), supported by the World Bank, was established to improve the quality and utilization of maternal and child health (MCH) services through a performance-based financing (PBF) approach.
This study assessed the impact of NSHIP implementation on maternal and child health service delivery in Bauchi State, Nigeria, between 2016 (pre-intervention) and 2020 (post-intervention).

Method:
A sequential mixed-methods design was employed, comprising a clinical audit and survey. The audit compared pre- and post-intervention data obtained from NSHIP-supported facilities, focusing on antenatal care (ANC), delivery, postnatal, and child welfare services. Data were collected using structured questionnaires and facility registers, including ANC, delivery, immunization, and family planning records. A total of 112 health facilities (6 General Hospitals and 106 Primary Health Care Centers) across the three senatorial districts were included. Quantitative data were analyzed using descriptive statistics and independent sample t-tests, while qualitative data from provider responses were analyzed descriptively.

Results:
The study revealed significant improvements in the provision and utilization of maternal and child health services following NSHIP implementation. The proportion of women receiving key ANC services such as blood pressure checks, iron and folic acid supplementation, malaria and hemoglobin testing, and tetanus toxoid vaccination increased markedly between 2016 and 2020. Skilled birth attendance also improved substantially, with Community Health Extension Workers (CHEWs) and Community Health Officers (CHOs) showing higher involvement in delivery care post-intervention. Similarly, child welfare indicators including vitamin A supplementation, deworming, growth monitoring, and immunization coverage showed notable progress. The number of facility-based deliveries increased significantly from 109.17 in 2016 to 646.54 in 2020, while the uptake of both short- and long-term contraceptives rose during the same period.

Conclusion:
The findings indicate that NSHIP has had a positive and measurable impact on maternal and child health outcomes in Bauchi State. The project improved access to quality ANC, delivery, and child health services, enhanced provider performance, and strengthened primary healthcare delivery through results-based financing. However, challenges such as limited healthcare funding, human resource shortages, and rural access barriers persist. Sustained investment, community engagement, and policy support are essential to consolidate these gains and achieve the Sustainable Development Goals (SDGs) on maternal and child health in Nigeria.

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RIASSUNTO

Introduzione:
La Nigeria continua a registrare uno dei tassi di mortalità materna e infantile più elevati al mondo, nonostante le numerose riforme sanitarie e il sostegno internazionale.
In risposta a questa situazione, è stato istituito il Nigeria State Health Investment Project (NSHIP), con il supporto della Banca Mondiale, per migliorare la qualità e l'utilizzo dei servizi di salute materna e infantile (MCH) attraverso un approccio di finanziamento basato sulle prestazioni (PBF).
Questo studio ha valutato l'impatto dell'implementazione del NSHIP sull'erogazione dei servizi di salute materna e infantile nello Stato di Bauchi, in Nigeria, tra il 2016 (pre-intervento) e il 2020 (post-intervento).

Metodo:
È stato utilizzato un disegno di ricerca sequenziale a metodi misti, comprendente un audit clinico e un'indagine.
L'audit ha confrontato i dati pre e post-intervento ottenuti dalle strutture supportate dal NSHIP, concentrandosi sull'assistenza prenatale (ANC), sul parto, sull'assistenza postnatale e sui servizi di tutela dell'infanzia. I dati sono stati raccolti utilizzando questionari strutturati e registri delle strutture, inclusi i registri relativi ad ANC, parto, vaccinazioni e pianificazione familiare.
Sono state incluse nello studio 112 strutture sanitarie (6 ospedali generali e 106 centri di assistenza sanitaria primaria) distribuite nei tre distretti senatoriali. I dati quantitativi sono stati analizzati utilizzando statistiche descrittive e test t per campioni indipendenti, mentre i dati qualitativi derivanti dalle risposte degli operatori sanitari sono stati analizzati in modo descrittivo.

Risultati:
Lo studio ha rivelato miglioramenti significativi nell'erogazione e nell'utilizzo dei servizi di salute materno-infantile a seguito dell'implementazione del programma NSHIP.
La percentuale di donne che hanno ricevuto servizi di assistenza prenatale fondamentali, come il controllo della pressione sanguigna, l'integrazione di ferro e acido folico, i test per la malaria e l'emoglobina e la vaccinazione antitetanica, è aumentata notevolmente tra il 2016 e il 2020.
Anche l'assistenza qualificata al parto è migliorata sostanzialmente, con un maggiore coinvolgimento degli operatori sanitari di comunità (Community Health Extension Workers - CHEW) e degli operatori sanitari di comunità (Community Health Officers - CHO) nell'assistenza al parto dopo l'intervento. Analogamente, gli indicatori di benessere infantile, tra cui l'integrazione di vitamina A, la sverminazione, il monitoraggio della crescita e la copertura vaccinale, hanno mostrato progressi significativi.
Il numero di parti assistiti in strutture sanitarie è aumentato significativamente, passando da 109,17 nel 2016 a 646,54 nel 2020, mentre l'utilizzo di metodi contraccettivi sia a breve che a lungo termine è cresciuto nello stesso periodo.

Conclusione:
I risultati indicano che il progetto NSHIP ha avuto un impatto positivo e misurabile sulla salute materna e infantile nello Stato di Bauchi. Il progetto ha migliorato l'accesso a servizi di assistenza prenatale, parto e salute infantile di qualità, ha potenziato le prestazioni degli operatori sanitari e ha rafforzato l'erogazione dell'assistenza sanitaria primaria attraverso un finanziamento basato sui risultati.
Tuttavia, persistono sfide quali la limitata disponibilità di fondi per l'assistenza sanitaria, la carenza di risorse umane e le barriere all'accesso nelle aree rurali. Investimenti costanti, coinvolgimento della comunità e sostegno politico sono essenziali per consolidare questi risultati e raggiungere gli Obiettivi di Sviluppo Sostenibile (OSS) in materia di salute materna e infantile in Nigeria.

INTRODUCTION

In 2023 alone, an estimated 4.8 million children under five died, with nearly half of these deaths occurring within the first month of life. Additionally, 1.9 million stillbirths were recorded globally.
Despite notable progress including a 40% reduction in maternal mortality between 2000 and 2023 approximately 260,000 women continue to die each year from pregnancy-related complications (PMNCH, 2021).
Sub-Saharan Africa bears the greatest burden, accounting for 70% of maternal deaths and 56% of under-five child deaths, despite representing only 30% of global live births and 28% of the under-five population.
Developing robust health financing systems remains a key global priority.
Even high-income countries face challenges in maintaining sustainable healthcare funding, and the situation is far more critical in low- and middle-income countries (LMICs), where resources are severely constrained. For instance, the average per capita health expenditure in African countries was US$135 in 2010, compared to US$3,150 in high-income countries (WHO, 2013).
As a result, the region continues to contribute disproportionately to global maternal deaths with over 200,000 women in sub-Saharan Africa dying in 2020 alone from preventable pregnancy and childbirth complications (MSD, 2024).
These deaths are often linked to limited access to quality healthcare, poor infrastructure, substandard medicines, low education levels, and inadequate

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health funding. Many women lack antenatal care (ANC), skilled birth attendants, emergency obstetric services, and postnatal care, further increasing maternal risks.

Despite several health sector reforms and strategic initiatives, Nigeria continues to record some of the highest maternal and child mortality rates worldwide, with marked regional disparities.
According to the 2018 Nigeria Demographic and Health Survey (NDHS), the maternal mortality ratio was 512 deaths per 100,000 live births, far exceeding the Sustainable Development Goal (SDG) 3.1 target of fewer than 70 deaths per 100,000 live births (NPC & ICF, 2019). Persistent challenges include low coverage of key maternal and child health interventions, poor quality of care, and high service costs, all of which underscore the urgent need to strengthen primary health care (PHC) systems.

To address these challenges, the Nigeria State Health Investment Project (NSHIP) was launched by the Federal Government of Nigeria (FGN) with support from the World Bank.
Initially implemented in Adamawa, Nasarawa, and Ondo States and later expanded to Taraba, Gombe, Borno, Yobe, and Bauchi NSHIP aimed to improve the delivery and utilization of high-impact maternal and child health services through a performance-based financing (PBF) approach (WHO, 2018).
The project's development objectives (PDOs) focused on improving health outcomes through measurable indicators such as immunization coverage, skilled birth attendance, facility quality scores, curative visits for under-five children, and the number of female beneficiaries (World Bank, 2018).
Additional performance indicators included the availability of essential medicines, staff competence, adherence to national service protocols, and utilization of key services like ANC, institutional delivery, and use of long-lasting insecticide-treated nets (LLINs).

The World Health Organization (WHO) envisions a world in which every pregnant woman and newborn receives quality care throughout pregnancy, childbirth, and the postnatal period (WHO, 2016). However, in Nigeria, only 37% of antenatal care providers are doctors, nurses, or midwives, and 35% of mothers do not receive any ANC at all (WHO, 2014). Antenatal care plays a crucial role in preventing complications, detecting health problems early, and providing education on healthy pregnancy and delivery practices (FMOH, 2012).
Evidence demonstrates that low ANC coverage correlates with high maternal mortality (Bustreo et al., 2013). For example, while the United Arab Emirates reports 100% ANC coverage and a maternal mortality ratio (MMR) of 8 per 100,000, Nigeria records only 61% ANC coverage with an MMR exceeding 560 per 100,000 (WHO, 2014). These poor outcomes reflect limited ANC utilization and inadequate quality of care (Ajayi et al., 2013; Hodgins et al., 2014).

Statement Of The Problem

As in other parts of the world, persistent disparities in access to maternal health care continue to affect many African countries and regions, disproportionately impacting women living in poverty and those in remote rural areas. Cultural beliefs and traditional practices also influence women's decisions on whether to seek care outside the home or from skilled health providers, even though the World Health Organization (WHO) recommends skilled birth attendance to ensure timely detection and management of complications (MSD, 2024).

As a country's population grows and ages, the prevalence of diseases and health conditions increases, leading to greater demand for healthcare services, particularly in maternal and child health. However, the prevailing trend shows that a significant proportion of the population tends to rely on self-medication or home-based care rather than utilizing available hospital facilities (AM Abdul-Baqi et al., 2025). In 2015, Nigeria's estimated maternal mortality ratio (MMR) exceeded 800 maternal deaths per 100,000 live births, resulting in approximately 58,000 maternal deaths that year alone.
In contrast, the 46 most developed countries collectively recorded only 1,700 maternal deaths, with an average MMR of 12 per 100,000 live births (WHO, 2018). According to the 1990 Nigeria Demographic and Health Survey (DHS), DPT3 immunization coverage stood at 33%, and this figure remained unchanged in the 2016 Multiple Indicator Cluster Survey (MICS) (WHO, 2019).

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Similar stagnation has been observed across other key maternal and child health indicators, including antenatal care coverage, skilled birth attendance, and the contraceptive prevalence rate (World Bank, 2019).
Globally, an estimated 500,000 women die annually from pregnancy-related causes, 99% of which occur in developing countries (Tuladhar et al., 2016). Furthermore, about 9% of pregnancies are complicated by conditions aggravated by pregnancy, such as malaria, iron-deficiency anemia, hepatitis, tuberculosis (TB), and heart disease (WHO, 2017). It is also estimated that over 61.8 million women worldwide suffer from significant ill health each year due to complications of childbearing (Koblinsky et al., 2006).

Health indicators in Northeast Nigeria are among the worst in the country, with the region lagging behind other geopolitical zones (except the Northwest) across nearly all major health metrics. Under-five mortality rates (U5MR) are 54% higher than in southern Nigeria, while malnutrition rates are even more severe.
Service delivery gaps remain substantial; for instance, in 2013, DPT3 immunization coverage in the Northeast was only 20.6%, compared to 72% in the southern zones.

In response to these challenges, and as part of the Federal Government's broader strategy for developing the Northeast, the World Bank has supported Nigeria in strengthening health service delivery through a Performance-Based Financing (PBF) approach.
This initiative builds on earlier project successes and aligns with the Federal Ministry of Health's goal of ensuring at least one fully functional Primary Health Care (PHC) center per ward. The Health Systems Consult Limited (HSCL) was engaged as a Contract Management and Verification Agency (CMVA) to oversee project implementation in Borno State (World Bank, 2020).

MATERIAL AND METHODS

Study Design

This study will adopt a sequential mixed-methods approach, comprising both quantitative and qualitative components.
The clinical audit was involve a pre- and post-NSHIP intervention assessment of maternal and child health (MCH) services in Bauchi State.
The pre-intervention period (2016) was compared with the post-intervention period (2020).
Data collection was include key performance indicators characterizing: Delivery services at the primary health care (PHC) level, Antenatal clinic attendance and services, and Maternal and child health outcomes.

The survey component use was a Likert-scale structured questionnaire administered to PHC providers (including managers, supervisors, and delegated employees). Statistical analysis was include univariate and multivariate comparisons of pre- and post-intervention data, as well as descriptive analysis of survey responses.

Study Area

The study was conducted in Bauchi State, located in northeast Nigeria, with Bauchi town serving as the state capital. The state was created in 1976 and originally included Gombe State, which became a separate state in 1996 (Bauchi State Government, 2018).
Bauchi State occupies a land area of 49,119 km² (18,965 sq. miles), representing approximately 5.3% of Nigeria's total landmass. It is geographically located between latitudes 9°3' and 12°3' North and longitudes 8°50' and 11° east. The study was include women and children from two Local Government Areas (LGAs) in each of the three senatorial districts of Bauchi State.

Scope of the Study

The study covered five years (2016–2020) of medical records on maternal and child health services provided under the Nigeria State Health Investment Project (NSHIP) at selected health facilities in Bauchi State.

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Study Population

The target population included women of reproductive age (15–49 years) and children under five years who received antenatal care (ANC), postnatal care (PNC), or child welfare services at NSHIP-supported health facilities in the selected LGAs across the three senatorial districts of Bauchi State between 2016 and 2020.

Sample Size

A total of 112 health facilities that participated in the NSHIP program in Bauchi State after four years of implementation will be included.

This comprises: 6 General Hospitals, and 106 Primary Health Care Centers (PHCCs distributed across the three senatorial districts. The sample size was determined according to World Bank Group criteria and NSHIP standards for facility inclusion.

Inclusion and Exclusion Criteria

Inclusion criteria was a women aged 15–49 years and children under five from the three Bauchi senatorial zones who received services at NSHIP health facilities between 2016 and 2020 (ANC, postnatal, or child welfare). While exclusion criteria was a women and children who did not attend Bauchi State NSHIP facilities during the study period.

Method and Instrument of Data Collection

Data was collected using a structured retrospective research questionnaire administered to Officers-in-Charge (OICs) and volunteers working at NSHIP facilities. The collected data was triangulated with information from ANC registers, labor and delivery records, family planning registers, and health promotion registers, and cross-validated against NSHIP DHIS data.

Quantitative data was analyzed using descriptive statistics (means, frequencies, percentages) and inferential tests, including the independent samples t-test to compare pre- and post-intervention results.

Ethical Considerations

Ethical clearance was obtained from the Postgraduate Department of Public and Community Health, Novena University, as well as from the Bauchi and Gombe States Ministries of Health. Confidentiality and anonymity of participants and health facility data was maintained throughout the study.

Result and Discussion

Result and Discussion **Table 3.1a** Services received by pregnant women attending NSHIP health facilities during antenatal care, labor and deliveries in Bauchi State in 2016 (Pre NSHIP Interventions).

Descriptive statistics was used to obtain mean scores for the items involved. The acceptable mean score for each item is 2.5 (obtained from SD+D+A+SA: 1+2+3+4= 10, divided by 4= 2.5).

The **table 3.1a** blow indicated that only three ANC services that were significantly received by women before NSHIP intervention in 2016 that comprised Oral iron and folic acid supplements (M=2.81), Blood pressure measurement (M=2.59), Blood test for malaria and hemoglobin Hb (M=2.53) while others ANC services were not significantly received by women by the year 2016. In order they are; Apply of chlorhexidine (M= 2.45); given doses of TT injection on proper schedule (M= 2.36); skin to skin (M= 2.27); use of pantograph (M= 2.20); Putting of baby to the breast within 1hour after birth (M= 2.18); Health talk on postpartum family planning (M= 2.09); Cutting of cord within 2-3 minute after delivery (M= 2.08); Full doses of intermittent preventive treatment in pregnancy (ipTp-sp, at 13 weeks and above) (M= 2.07); Ultrasound scan before 24 weeks of gestation (M= 2.06); Health talks on danger signs, common physiological symptoms and complication during pregnancy (M= 2.03); Urinalysis for proteinuria & syphilis (M= 1.95); Anthelminthic treatment (after first trimester (M= 1.92); and Health talk on benefit of WHO eight ANC Contacts (M= 1.38).

(*Significance<0.5)

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Items on impact	N	Mean	Std. Deviation
Oral iron and folic acid supplements	112	2.8125 *	.39207
Blood test for malaria and hemoglobin (Hb)	112	2.5357 *	.58400
Blood pressure measurement.	112	2.5982 *	.67730
Ultrasound scan before 24 weeks of gestation	112	2.0625	.36221
Anthelminthic treatment (after first trimester)	112	1.9286	.49710
Urinalysis for proteinuria & syphilis	112	1.9554	.38877
Full doses of intermittent preventive treatment in pregnancy (ipTp-sp, at 13 weeks and above).	112	2.0714	.25870
Doses of TT injection on proper schedule	112	2.3661	.71023
Health talks on danger signs, common physiological symptoms and complication during pregnancy	112	2.0357	.29800
Health talk on benefit of WHO eight ANC Contacts	112	1.3839	.48853

Table 3.1a

Services received by pregnant women attending NSHIP health facilities during antenatal care, labor and deliveries in Bauchi State in 2016 (Pre NSHIP Interventions).

The **table 3.1b** below showed that there were significant increased in all ANC services received by women attending ANC services at Bauchi State NSHIP health facilities in 2020 (after NSHIP interventions) compared with that of 2016 above.

In order they are; supply of Oral iron and folic acid supplements (M= 3.29); obtaining Blood pressure measurement (M= 3.25); provision of Blood test for malaria and hemoglobin (Hb) (M= 3.09); gives Doses of TT injection on proper schedule (M= 2.97); provides test for Urinalysis for proteinuria & syphilis (M= 2.88); provision of full doses of intermittent preventive treatment in pregnancy (ipTp-sp, at 13 weeks and above) (M= 2.87); provision of full doses of intermittent preventive treatment in pregnancy (ipTp-sp, at 13 weeks and above) (M= 2.87); gives Health talks on danger signs, common physiological symptoms and complication during pregnancy (M= 2.74); provision of Anthelminthic treatment (after first trimester) (M= 2.72); provision of Health talk on benefit of WHO eight ANC Contacts (M= 2.64); and provision of Ultrasound scan before 24 weeks of gestation (M= 2.59).

(*Significance<0.5)

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Anthelminthic treatment (after first trimester)	112	1.9286	.49710
Urinalysis for proteinuria & syphilis	112	1.9554	.38877
Full doses of intermittent preventive treatment in pregnancy (ipTp-sp, at 13 weeks and above).	112	2.0714	.25870
Doses of TT injection on proper schedule	112	2.3661	.71023
Health talks on danger signs, common physiological symptoms and complication during pregnancy	112	2.0357	.29800
Health talk on benefit of WHO eight ANC Contacts	112	1.3839	.48853

Table 3.1b
Services received by pregnant women attending NSHIP health facilities during antenatal care in Bauchi State in 2016 2020 (After Intervention).

The table below shows that only one child health services (Vit A capsules given) was significant acceptable among the services received by children attending Bauchi State NSHIP Facilities in 2016 (before NSHIP interventions). Thus; provision of vitamin A supplement (M= 2.55); Counseling the mother on exclusive breast feeding (M= 2.41); provision of deworming tablet (M= 2.23); provision of child growth monitoring services (M= 2.17); and the provision of routine immunization services (1.97).
(*significance<0.5)

Items	N	Mean	Std. Deviation
Child growth monitoring services	112	2.1786	.46912
Counseling the mother on exclusive breast feeding	112	2.4107	.59356
Routine immunization services (based on penta 3 coverage)	112	1.9732	.43413
Vit A capsules given	112	2.5536*	.59788
Issue of deworming tablet	112	2.2321	.56921

Table 3.2a
Services received by the children attending NSHIP health facilities during child welfare in 2016 (Pre Intervention)

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The table 3.3a above showed that there were significant improved in all child health services received by children attending Bauchi State NSHIP Facilities in 2020(after interventions). In order of importance, they are: provision of vitamin A supplement (M= 2.83); provision of deworming tablet (M= 2.81); provision of child growth monitoring services (M= 2.73); counseling the mothers on exclusive breast feeding (M= 2.66); and the provision of routine immunization services (2.58).

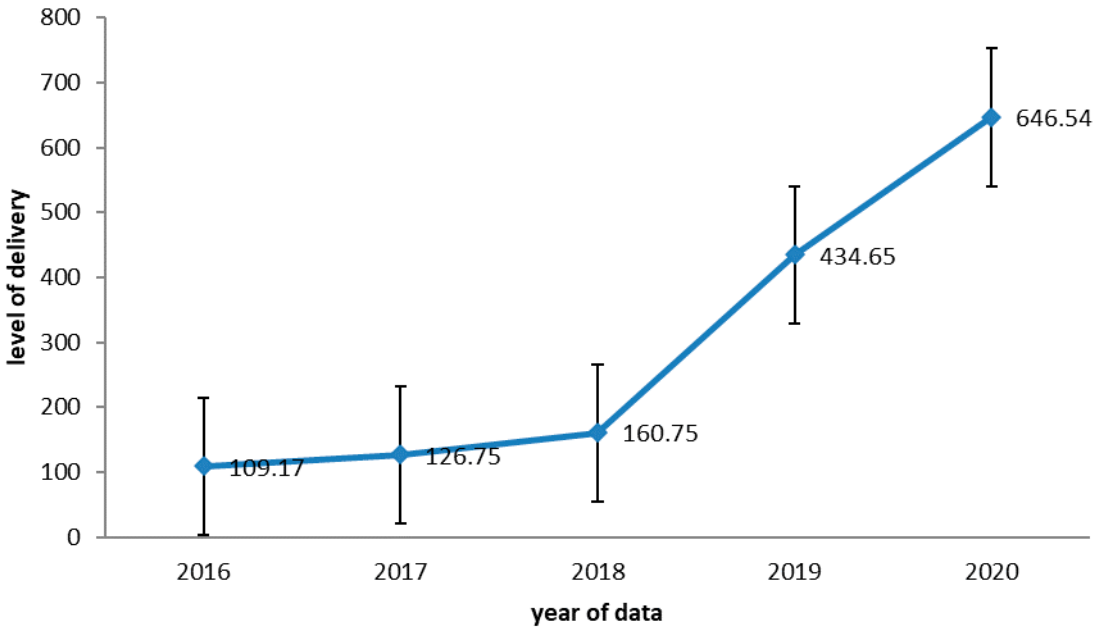
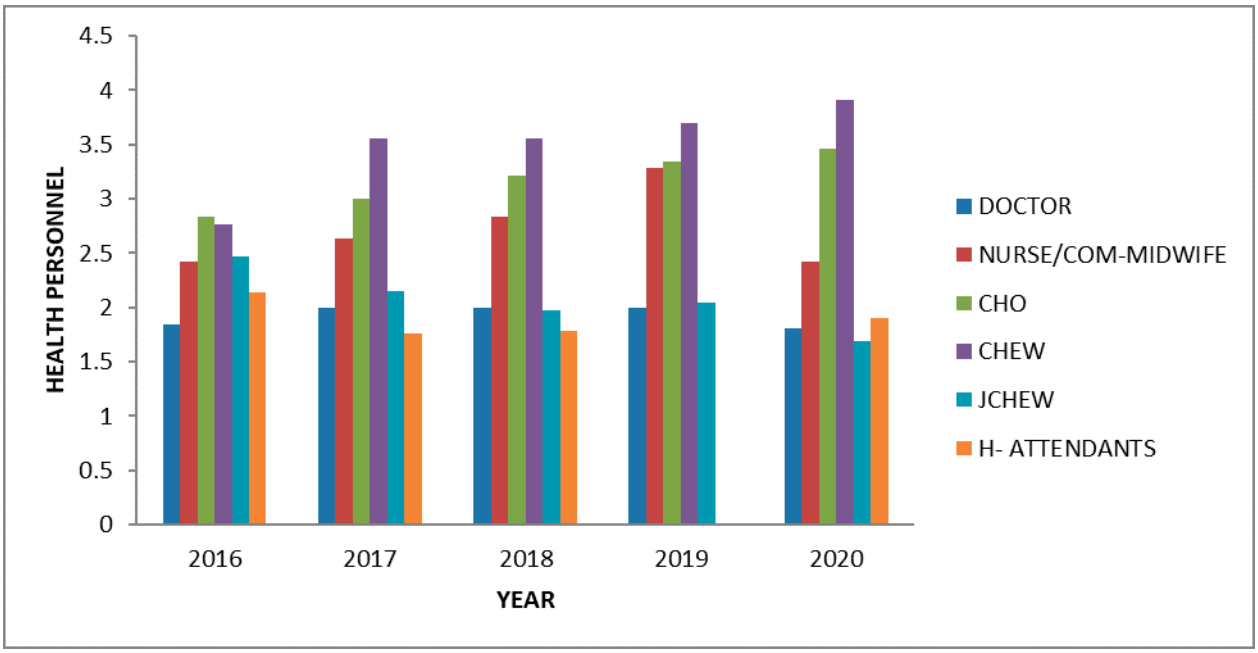


Figure 3.1
The level of deliveries by pregnant women to the NSHIP health Facilities from 2016 to 2020.

Figure 3.1 shows that there were significant gradual increase levels of deliveries from the year 2016 (pre-NSHIP intervention) to the year 2020 (post-NSHIP interventions). Thus; from 2016 to 2018 (109.17 to 160.75). However, from 2018 to 2020recorded a sharp increase in the level of deliveries (160.75 to 646.54).

3.2a the personnel who conducted antenatal care services and received deliveries to pregnant women attending this NSHIP health Facility from 2016 to 2020



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Figure 3.2b above: Health personnel conducted antenatal care services and received deliveries to pregnant women attending NSHIP health Facilities from 2016 to 2020

Figure 3.2: shows that those who were significant involved in conducting antenatal care services, and receive deliveries to pregnant women before the intervention in 2016, in order were: CHEW (M=2.7) CHO (M=2.8) Nurse/ Community mid-wife (M=2.4), JCHEW (M=2.4) and Doctor was (M=1.9), while in 2020 after intervention, shows that there were significant improved skill personnel who were involved in conducting antenatal care services and received deliveries to pregnant women attending Bauchi State NSHIP Facilities in 2020 due to the interventions, those with significance were three CHEW (M=3.5), CHO (M=2.8), and Nurse/ Community mid-wife (M=2.7)

The data presented in Table 4.3a above shows that those who were significant involved in conducting antenatal care services, and receive deliveries to pregnant women before the intervention, in order were: CHO (M= 2.83); and CHEW (M= 2.76), using the acceptable mean of 2.5.

Table 3.3a below: Health personnel conducted antenatal care services and received deliveries to pregnant women attending NSHIP health Facilities in 2020 (Post- intervention)

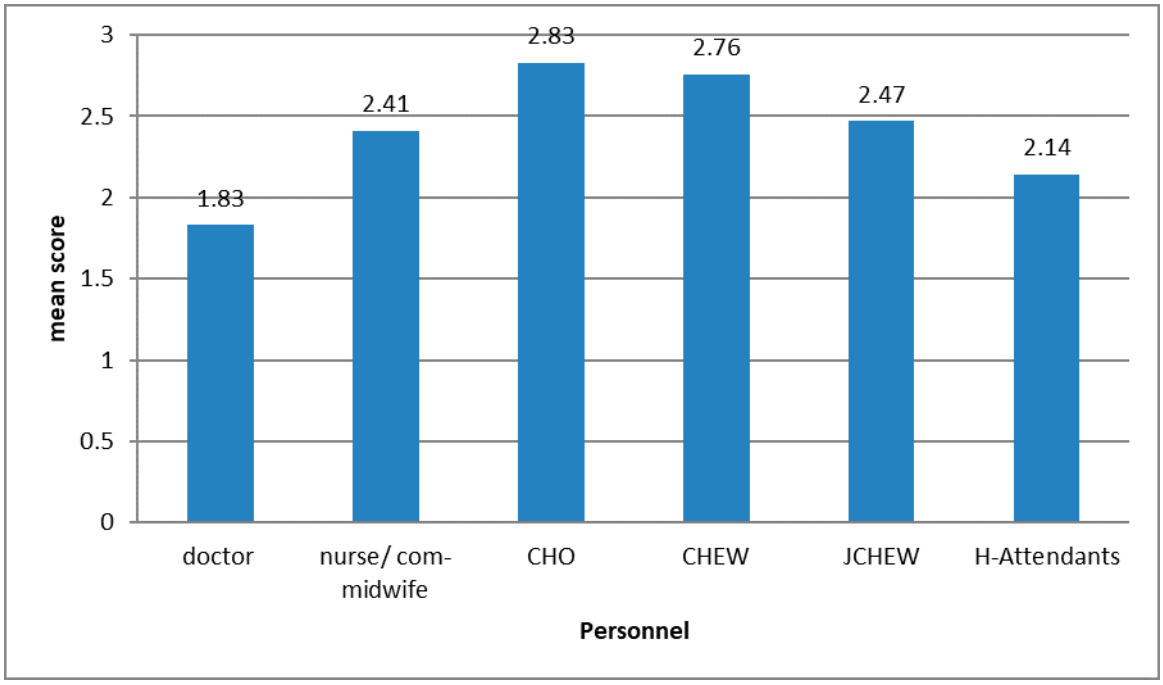


Figure 3.3b above: Health personnel that conducted antenatal care services and received deliveries to pregnant women attending this NSHIP health Facility in 2016 (Before Intervention).

The data presented in Table 3.3b below shows that there were significant improved skill personals who were involved in conducting antenatal care services and received deliveries to pregnant women attending Bauchi State NSHIP Facilities in 2020 due to the interventions, in order are: CHEW (M= 3.50); CHO (M= 3.16); and Nurse/Com-Midwife (M= 2.71), using the acceptable mean of 2.5.

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ITEMS	N	Mean	Std. Deviation
Doctor	112	1.93	0.27
Nurse/Com-Midwife	112	2.71	0.67
CHO	112	3.16	0.82
CHEW	112	3.50	0.63
JCHEW	112	2.06	0.50

Table 3.4a below shows that in 2016 the short-term contraceptive commodities were mostly used; in 2017, both long term and short-term contraceptives were used at the same rate; the same trend is seen in 2018; however, from 2019 to 2020, there was further increase in the trend of contraceptive usage, although, the short-term contraceptives were more in use.

Table 3.4b below: Contraceptive commodities used during family planning services in 2016 (before intervention).

ITEMS	N	Mean	Std. Deviation
Short-term family planning methods received	112	138.4107	29.03634
Long-term family planning methods received	112	40.7232	9.15060

Table 4.4b below: Contraceptive commodities used during family planning services in 2020 (After intervention).

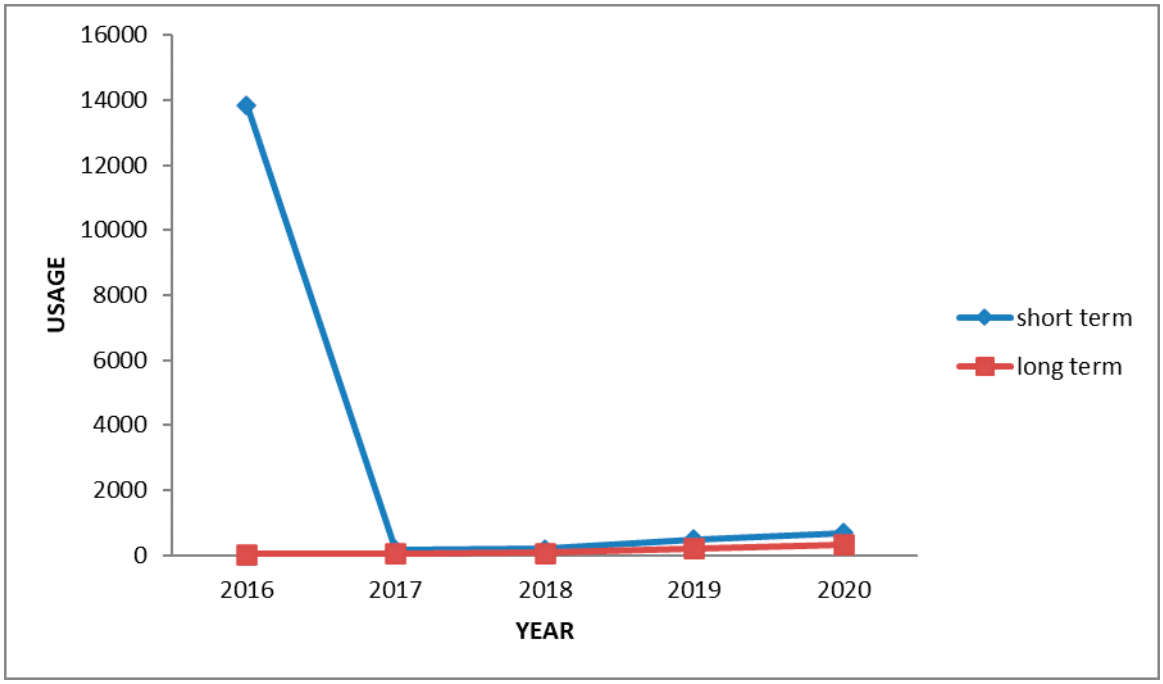


Figure 3.3a: Contraceptive commodities used during family planning services from 2016 to 2020.

Figure 3.3a and Table 4.4b above shows that in 2016 the short-term contraceptive commodities were mostly used; in 2017, both long term and short-term contraceptives were used at the same rate; the same trend is seen in 2018; however, from 2019 to 2020, there was further increase in the trend of contraceptive usage, although, the short-term contraceptives were more in use.

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DISCUSSION

According to the Impact Evaluation of the Nigeria State Health Investment Project (NSHIP) task force, Nigeria's progress on health outcomes has been mixed. Although the under-five mortality rate (U5MR) has declined by about 37% over the past 13 years, it remains high compared to other lower-middle-income countries (LMICs).
Similarly, slow progress has been recorded in antenatal care (ANC) coverage, skilled birth attendance (SBA), and contraceptive prevalence rate (CPR).
Nonetheless, improvements have been observed in primary healthcare (PHC) performance, particularly in malaria prevention through the use of long-lasting insecticide-treated nets (LLINs) and malaria treatment (World Bank, 2018). Despite these improvements, a poor child in Nigeria still faces the highest risk of dying before the age of five in West Africa.

The findings of this study align with the World Bank report, showing a reduction in maternal and newborn mortality and morbidity, along with increased access to antenatal services and skilled delivery care in Bauchi State. However, rural areas in Nigeria, including Bauchi State, continue to experience substantial healthcare challenges, notably limited access to quality health services, especially maternal and child healthcare (Magaji et al., 2024).

Investing in the health and well-being of women and children yields significant and long-lasting benefits, improving quality of life, productivity, and economic growth. However, persistent gaps must still be addressed to reduce mortality rates, ensure equitable access to quality healthcare, and improve survival outcomes for children beyond the age of five. Healthy women and children remain the cornerstone of healthy, thriving societies (NASEMGH, 2027).

In many low-resource settings, healthcare service delivery remains inadequate. Nigeria ranks among the lowest in access to and quality of healthcare services, scoring 42 out of 100 in the World Bank's Universal Health Coverage index.
To improve rural women's access to quality maternal healthcare, adequate funding must be allocated to strengthen care delivery, reduce out-of-pocket expenses, ensure sufficient staffing and training, introduce innovative transportation systems, and encourage male involvement. Strengthening the quality of maternal care is essential for improving access and outcomes (Ajegbile, 2023).

Maternal and newborn mortality rates remain disproportionately high in low- and middle-income countries (LMICs), with Nigeria ranking among the worst globally. In 2018, Nigeria's maternal mortality ratio (MMR) was estimated at 512 deaths per 100,000 live births (Adanikin et al., 2022), rising to over 800 deaths per 100,000 by 2019, with a neonatal mortality rate of 33 per 1,000 live births (Nasir et al., 2022). In contrast, high-income countries such as the United Kingdom and the United States recorded much lower MMRs of 10–18 per 100,000 live births and neonatal mortality rates below four per 1,000 (WHO, 2018).

The Sustainable Development Goals (SDGs) set a global target of fewer than 70 maternal deaths per 100,000 live births (SDG Target 3.1, 2020; Suzuki et al., 2003). However, according to the World Health Organization (2023), Nigeria's maternal mortality rate increased from 917 per 100,000 live births in 2017 to 1,047 in 2020 a 14% rise in just three years. This alarming trend highlights a stark mismatch between Nigeria's maternal health outcomes and the SDG targets. The maternal mortality rate in Nigeria remains more than ten times higher than the global benchmark, underscoring systemic deficiencies and the urgent need for comprehensive maternal health interventions (Ezeaka et al., 2021).

Maternal mortality continues to be a major public health concern in Nigeria, with most deaths resulting from preventable obstetric causes. Recent research has identified hypertension (27%), sepsis (20.6%), hemorrhage (17%), anemia (3.2%), HIV (3.2%), and sickle cell disease (2.4%) as leading causes of maternal mortality (Olamijulo et al., 2022).
These findings reinforce the importance of sustained investments in maternal health systems and interventions such as NSHIP, which aim to strengthen service delivery and improve maternal and child health outcomes in Bauchi State and across Nigeria.

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