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POOR PRIMARY HEALTHCARE SYSTEM AND UTILIZATION OF MATERNAL AND INFANT HEALTHCARE SERVICES IN ABIA CENTRAL SENATORIAL ZONE, NIGERIA

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Abstract

Maternal and infant health outcomes are key indicators of health system performance, particularly in low and middle-income countries like Nigeria. Primary healthcare (PHC) serves as the first point of contact for communities and is essential for providing maternal and child health services. However, weaknesses within PHC can hinder access, utilization, and quality of care, contributing to high maternal and infant morbidity and mortality. This study examined the specific weaknesses in the PHC system in Abia Central Senatorial District, Nigeria, assessed their impact on maternal and infant healthcare utilization, and proposed evidence-based strategies for strengthening PHC delivery. A cross-sectional and mixed-methods design was adopted, using surveys and key informant interviews across selected PHC centers. Quantitative data were analyzed descriptively and inferentially, while qualitative data were thematically analyzed. Findings revealed critical PHC weaknesses, including shortages of trained personnel (68%), frequent drug stock-outs (62%), inadequate infrastructure (59%), and poorly functioning referral systems (57%). These challenges significantly limited service utilization, with only 61% of pregnant women attending four or more antenatal visits and 54% delivering in PHC facilities. Governance and financing gaps further compounded service inefficiencies. The findings align with Health Systems Theory, showing that deficiencies in workforce, infrastructure, financing, governance, and referral mechanisms interact to undermine PHC effectiveness. Strengthening PHC through workforce development, adequate funding, improved infrastructure, functional referral systems, and community engagement can enhance service utilization and maternal and infant health outcomes. This study provides evidence-based insights for policymakers and health managers to address systemic PHC weaknesses, contributing to improved maternal and infant health in Abia Central Senatorial District and similar resource-limited settings.

Keywords: *Primary Healthcare, Maternal, Infant, Utilization, Weaknesses*

INTRODUCTION

1.1 Background to the study

Maternal and infant mortality remain significant public health concerns and are widely used as indicators of the performance and effectiveness of health systems. Although global efforts have led to some improvement in maternal and child health outcomes, sub-Saharan Africa continues to record unacceptably high levels of maternal and infant deaths, many of which are preventable (World Health Organization [WHO], 2022). Contemporary scholarship

increasingly emphasizes that these outcomes are largely shaped by structural and systemic factors rather than individual or cultural deficiencies alone (Marmot, 2005; Solar & Irwin, 2010).

Primary healthcare (PHC) is internationally recognized as the foundation of effective and equitable health systems, particularly in the provision of maternal and child health services. The World Health Organization and UNICEF identify PHC as central to achieving universal health coverage through accessible, affordable, and community-based care (WHO & UNICEF, 2018).

In Nigeria, PHC facilities are statutorily responsible for delivering antenatal care, skilled delivery services, postnatal care, immunization, and basic emergency obstetric interventions. Despite these policy commitments, Nigeria continues to account for a substantial proportion of global maternal and neonatal deaths, indicating persistent weaknesses in the PHC system (National Population Commission [NPC] & ICF, 2019). Abia Central Senatorial District provides a relevant context for examining these challenges. Located in the South-East geopolitical zone, the district is characterized by relatively high levels of female education and a general acceptance of orthodox medical practices. Nonetheless, maternal and infant mortality remain evident, suggesting that sociocultural explanations alone are insufficient. Rather, attention must be directed towards systemic weaknesses within the primary healthcare system, including inadequate infrastructure, shortage of skilled health personnel, irregular drug supply, and poorly coordinated referral mechanisms (Aregbeshola & Khan, 2018).

Observations across rural and semi-urban communities in Abia Central reveal that many PHC centres operate below expected standards, limiting their capacity to provide timely and quality maternal and neonatal care. Poor road networks, transportation difficulties, and the absence of functional emergency response services further contribute to delays in accessing appropriate care, consistent with the “three delays” model in maternal mortality studies (Thaddeus & Maine, 1994). In addition, challenges related to governance, funding, and supervision at the local government level have weakened PHC service delivery, compelling many households to rely on traditional birth attendants and informal healthcare providers (Obansa & Orimisan, 2013).

This study therefore examines maternal and infant health outcomes in Abia Central Senatorial District through a sociological analysis of primary healthcare system weaknesses. By focusing on structural and institutional determinants, the study seeks to contribute to scholarly discourse on health system performance, inequality, and social determinants of health, while offering insights relevant for policy and primary healthcare strengthening in Nigeria.

1.2 Statement of the Problem

Maternal and infant mortality remain critical public health challenges in Nigeria, despite sustained policy commitments and international interventions aimed at improving maternal and child health outcomes. Nigeria continues to contribute a disproportionately high share of global maternal and neonatal deaths, reflecting persistent weaknesses within its healthcare system, particularly at the level of primary healthcare (PHC) delivery (World Health Organization [WHO], 2022). Although PHC is intended to serve as the first point of contact and the backbone of maternal and child health services, its limited functionality has undermined efforts to reduce preventable maternal and infant deaths.

In Abia Central Senatorial District, maternal and infant mortality persist despite relatively favorable sociocultural conditions, including higher levels of female education and general acceptance of biomedical healthcare. This paradox suggests that individual behavior and cultural factors alone do not sufficiently explain adverse maternal and infant health outcomes in the district. Rather, systemic weaknesses in the primary healthcare system such as inadequate infrastructure, shortage of skilled health personnel, inconsistent drug availability, and weak referral and emergency response mechanisms—appear to constrain access to timely and quality maternal and child health services.

Empirical evidence indicates that many PHC centres within Abia Central operate below minimum standards, limiting their capacity to provide essential antenatal, delivery, and postnatal services. Poor road networks and transportation challenges further exacerbate delays in reaching appropriate care during obstetric and neonatal emergencies, increasing the risk of avoidable deaths. Additionally, governance and financing challenges at the local government level have contributed to ineffective PHC management, resulting in uneven service delivery and diminished public confidence in PHC facilities.

Despite the centrality of PHC to maternal and child health policy in Nigeria, there remains a paucity of context-specific, sociologically grounded research examining how weaknesses in PHC systems shape maternal and infant health outcomes in Abia Central Senatorial District. This gap limits the development of evidence-based interventions and policies tailored to the district's specific health system challenges. Addressing this problem is therefore essential for strengthening primary healthcare delivery and improving maternal and infant health outcomes in Abia Central and similar settings.

1.2 Research Questions

1. What are the specific weaknesses in the primary healthcare system in Abia Central Senatorial District that affect maternal and infant health outcomes?
2. How do structural challenges in primary healthcare impact access to maternal and infant health services in the district?
3. What strategies can be implemented to strengthen primary healthcare delivery and improve maternal and infant health outcomes in Abia Central Senatorial District?

1.3 Research Objectives

1. To examine the specific weaknesses within the primary healthcare system in Abia Central Senatorial District that influence maternal and infant health outcomes.
2. To analyze the impact of structural challenges on utilization of maternal and infant healthcare services.
3. To propose evidence-based strategies and policy recommendations for strengthening primary healthcare delivery with the aim of improving maternal and infant health outcomes in the district.

Literature Review

2.1 Review of theoretical literature

2.1.1 Concept of Primary Healthcare

Primary healthcare (PHC) is widely regarded as the foundation of an effective and equitable health system. It represents the first level of contact between individuals, families, and communities with the formal health system, providing accessible, affordable, and essential health services (World Health Organization [WHO], 2018). PHC emphasizes preventive, promotive, curative, and rehabilitative services, and it is designed to meet the majority of the

population's health needs while ensuring continuity of care (Starfield, 1998). The central philosophy of PHC is that healthcare should be universally accessible, community-based, and responsive to local health challenges, thereby reducing reliance on secondary and tertiary health facilities.

Globally, PHC has been recognized as a cost-effective approach to improving population health outcomes, particularly in low- and middle-income countries, where it is critical for reducing maternal and infant mortality (WHO & UNICEF, 2018). PHC encompasses a broad range of services, including immunization, antenatal and postnatal care, skilled delivery, health education, and the treatment of common illnesses. It is also characterized by the involvement of communities in planning and implementing health interventions, promoting ownership and sustainability of health initiatives (Berman & Bitrán, 2011).

In the Nigerian context, the PHC system is intended to provide essential health services at the community level, with an emphasis on maternal and child health, disease prevention, and health promotion (National Primary Health Care Development Agency [NPHCDA], 2020). PHC facilities, including health centres and clinics, serve as the first point of contact for pregnant women, infants, and other vulnerable populations. However, despite policy frameworks emphasizing the importance of PHC, service delivery in many parts of Nigeria remains weak due to inadequate infrastructure, shortage of skilled personnel, limited essential drugs, and poor referral systems (Aregbeshola & Khan, 2018). These weaknesses undermine the ability of PHC to reduce maternal and infant morbidity and mortality, particularly in rural and semi-urban communities where access to higher-level health facilities is limited.

Thus, primary healthcare is not merely a set of services but a systemic approach that integrates preventive, promotive, and curative interventions within communities. Strengthening PHC is critical for achieving improved maternal and infant health outcomes, as it addresses structural and systemic determinants of health at the first point of contact between the health system and the population (WHO, 2018; Starfield, 1998). In contexts like Abia Central Senatorial District, understanding the concept and operational challenges of PHC is essential for identifying strategies to improve access, quality, and effectiveness of maternal and child healthcare services.

2.3 Theoretical Review

2.3.3 Health Systems Theory

Health Systems Theory, articulated by the World Health Organization (2007), conceptualizes healthcare as an integrated system composed of interdependent building blocks, including service delivery, health workforce, health financing, medical products, health information systems, and leadership/governance. According to this theory, the effectiveness of a health system depends on the optimal functioning and coordination of these components. Weaknesses in any of the building blocks such as inadequate financing, shortages of skilled health workers, or poor supply chain management can compromise service delivery and health outcomes. Applied to Abia Central Senatorial District, deficiencies in PHC infrastructure, workforce distribution, and governance weaken maternal and infant health services, leading to poor coverage and utilization. Health Systems Theory provides a comprehensive analytical framework for identifying systemic gaps and guiding evidence-based interventions to strengthen PHC performance.

2.4 Theoretical Framework

This study adopts Health Systems Theory as its main theoretical framework to explain primary healthcare system weaknesses and their implications for maternal and infant health outcomes in Abia Central Senatorial District, Nigeria. Health Systems Theory conceptualizes healthcare as an integrated and interdependent system whose performance depends on the effective functioning and coordination of multiple components rather than isolated services (WHO, 2007). The theory emphasizes that health outcomes are not solely determined by individual health-seeking behavior but by how well the health system is structured, financed, governed, and managed.

According to the World Health Organization, a functional health system is built on six core building blocks: service delivery, health workforce, health information systems, access to essential medicines, health financing, and leadership/governance (WHO, 2007). The theory posits that weaknesses in any of these components or poor coordination among them can compromise system efficiency, equity, and quality of care, ultimately leading to poor health outcomes. In the context of maternal and infant health, deficiencies in skilled personnel, inadequate infrastructure, weak referral systems, poor drug supply chains, and insufficient funding directly affect access to antenatal, delivery, and postnatal services.

Applied to Abia Central Senatorial District, Health Systems Theory provides a robust framework for understanding how systemic constraints within primary healthcare facilities shape maternal and infant health outcomes. For instance, shortages of trained health workers and uneven workforce distribution limit service availability, while inadequate financing and weak governance undermine facility maintenance, supervision, and accountability. Similarly, ineffective referral mechanisms and poor transportation systems contribute to delays in accessing emergency obstetric and neonatal care, increasing the risk of preventable morbidity and mortality (Uzochukwu et al., 2015; Aregbeshola & Khan, 2018).

Health Systems Theory is particularly relevant to this study because it allows for a holistic analysis of primary healthcare weaknesses rather than attributing poor outcomes to single factors. It also aligns with policy-oriented research by linking system performance to governance and resource allocation decisions, making it useful for generating evidence-based recommendations. By focusing on system-wide interactions, the theory explains how cumulative structural deficiencies within primary healthcare institutions translate into limited utilization of services and poor maternal and infant health indicators (Onwujekwe et al., 2019). Health Systems Theory offers a comprehensive and policy-relevant lens for analyzing primary healthcare system weaknesses in Abia Central Senatorial District. Its emphasis on system coordination, institutional capacity, and governance makes it an appropriate framework for understanding and addressing maternal and infant health challenges within Nigeria's primary healthcare context.

Methodology

3.1 Design of the Study

This study adopted a descriptive survey research design, which is appropriate for examining the relationships between primary healthcare system weaknesses and maternal infant health outcomes in Abia Central Senatorial District, Nigeria. A survey design allows the researcher to collect data from a representative sample of women, health workers, and community members regarding access, utilization, and service quality at primary healthcare (PHC) facilities. This design is suitable because it facilitates both quantitative and qualitative data collection, enabling the testing of the study hypotheses while also exploring the experiences

and perceptions of healthcare users regarding systemic weaknesses in PHC service delivery (Creswell, 2014; Orodho, 2012).

3.2 Area of the Study

The study was conducted in Abia Central Senatorial District, which comprises six Local Government Areas (LGAs): Ikwuano, Isiala Ngwa North, Isiala Ngwa South, Umuahia North, Umuahia South and Osisioma Ngwa. This district is characterized by a mixture of rural and semi-urban settlements, making it ideal for examining primary healthcare system weaknesses and maternal–infant health outcomes.

Umuahia North and Umuahia South LGAs are semi-urban, encompassing Umuahia, the state capital, which hosts government offices, markets, and relatively well-equipped primary healthcare facilities. These areas have higher population density and greater access to health services, but still face systemic challenges in service delivery. The remaining LGAs: Ikwuano, Isiala Ngwa North, Isiala Ngwa South and Osisioma Ngwa, are predominantly rural, with scattered communities that rely heavily on local primary healthcare facilities. These areas often experience challenges such as limited infrastructure, poor transportation networks, understaffed facilities, and longer travel distances to health centers, which affect maternal and infant healthcare utilization.

By covering both rural and semi-urban settings, the study captures the diverse experiences and challenges faced by women, healthcare workers, and administrators in accessing and delivering primary healthcare services. This ensures that the findings are representative of the structural and operational realities of primary healthcare delivery in Abia Central Senatorial District.

3.3 Scope of the Study

The study focused on examining specific weaknesses within the primary healthcare system including infrastructure deficits, staffing shortages, governance and referral system challenges and their impact on access to and utilization of maternal and infant healthcare services. The study also assessed how these weaknesses affect maternal and infant health outcomes such as antenatal care attendance, skilled delivery, and postnatal follow-up. The scope is limited to women of reproductive age (15–49 years), healthcare workers, and PHC facility administrators in the selected local government areas of Abia Central.

3.4 Population of the Study

The population for this study consisted of three key groups directly involved in or affected by primary healthcare delivery in Abia Central Senatorial District. The first group comprised women of reproductive age (15–49 years) residing in the five local government areas, as they are the primary users of maternal and infant healthcare services. The second group included primary healthcare workers, such as nurses, midwives, and community health extension workers, who provide the bulk of frontline maternal and child health services. The third group consisted of PHC facility administrators and local government health officials, who are responsible for policy implementation, governance, and supervision of healthcare delivery at the primary level. According to the National Population Commission (2019), the estimated number of women of reproductive age in the five LGAs is approximately 152,000, while the total PHC workforce in the district and healthcare workers are about 640 staff members. Therefore study population is approximately 152,640 individuals,

3.4 Sample Size

The sample size for this study was derived using the Taro Yamani (1967) formula:

$$n = \frac{N}{1 + N(e^2)}$$

Where; n = Sample size
 N = Target Population

e = error limit (0.04²) or 0.0016.

I = Constant

Applying the formula above we have;

$$n = \frac{152.640}{1+152,640(0.004)^2}$$

$$n = \frac{152.640}{1+152.640(0.0016)}$$

$$n = \frac{152,640}{1+244.2}$$

$$n = 626$$

3.6 Sampling Technique

The study employed a multistage sampling technique to ensure a representative selection of respondents across the six Local Government Areas (LGAs) of Abia Central Senatorial Zone: Ikwuano, Isiala Ngwa North, Isiala Ngwa South, Umuahia North, Umuahia South, and Osisioma Ngwa. This approach was considered appropriate because it allowed systematic selection of respondents at multiple levels, capturing the diversity of rural and semi-urban communities as well as the perspectives of healthcare users, providers, and administrators.

3.7 Administration of the Instrument

The research instrument was administered by the researcher with the assistance of six trained research assistants who were familiar with the local language and the primary healthcare system in Abia Central Senatorial District. The research assistants were briefed on the objectives of the study, ethical considerations, questionnaire administration procedures, and methods for clarifying questions without introducing bias.

The questionnaires were administered mainly through face-to-face interaction to ensure a high response rate and to accommodate respondents with varying levels of literacy. For women of reproductive age, the instrument was administered during antenatal, delivery, and postnatal clinic days at the selected PHC facilities. However, where necessary, questions were interpreted into the local language to enhance understanding. Primary healthcare workers and administrators completed the questionnaires during work breaks or at scheduled times convenient to them.

The administration of the instrument lasted for a period of four weeks. Completed questionnaires were retrieved immediately after completion to minimize loss and ensure completeness. At the end of the exercise, all retrieved questionnaires were screened for accuracy and completeness before being coded and prepared for data analysis.

3.8 Method of Data Analysis

Data collected from the field were carefully coded, entered, and analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive and inferential statistical techniques were employed in line with the objectives and hypotheses of the study.

Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize respondents' socio-demographic characteristics and to describe patterns related to primary healthcare system weaknesses, access to maternal and infant health services, and utilization of care. These statistics provided a clear overview of the distribution of responses and the general trends observed in the data.

Inferential statistics were used to test the formulated hypotheses at a 0.05 level of significance. Specifically, the Chi-square (χ^2) test was used to examine relationships between categorical variables such as primary healthcare infrastructure adequacy, staffing levels, governance challenges, and maternal–infant healthcare utilization outcomes and where appropriate. Responses from open-ended questions were analyzed using thematic content analysis. Similar responses were grouped, coded, and categorized into themes that reflected recurring patterns related to primary healthcare system challenges and maternal–infant health outcomes. The qualitative findings were used to complement and enrich the quantitative results, thereby providing a more comprehensive understanding of the study findings.

Analysis and Discussion of findings

4.1: Socio-Demographic Information of Respondents

The socio-demographic characteristics of the respondents were interpreted using data obtained from the fieldwork. This entailed the age, education level, marital status and place of residence of the study's respondents.

Table 4.1: Socio-Demographic Variables

Variable	Category	Frequency (f)	Percentage (%)
Age (years)	15–19	42	6.8
	20–24	78	12.7
	25–29	110	17.9
	30–34	105	17.0
	35–39	95	15.4
	40–44	80	13.0
	45–49	65	10.6
	50+	41	6.6
Gender	Male	210	34.1
	Female	400	64.9
	Other	6	1.0
Marital Status	Single	130	21.1
	Married	440	71.4
	Widowed	25	4.1
	Divorced	21	3.4
Highest Level of Education	No formal education	60	9.7
	Primary	100	16.2
	Secondary	250	40.6
	Tertiary	190	30.9
	Others	16	2.6
Occupation	Farming	90	14.6
	Trading	120	19.5
	Civil servant	100	16.2

	Artisan/Skilled labor	80	13.0
	Housewife	150	24.4
	Student	50	8.1
	Unemployed	20	3.3
	Others	6	1.0
Place of Residence	Rural	230	37.3
	Semi-Urban	260	42.2
	Urban	126	20.5

Regarding marital status, the majority of respondents were married (71.4%), followed by those who were single (21.1%). Widowed respondents constituted 4.1%, while divorced individuals accounted for 3.4%, indicating that most participants were in marital unions.

With respect to educational attainment, the highest proportion of respondents had secondary education (40.6%), followed by those with tertiary education (30.9%). Respondents with primary education made up 16.2%, while 9.7% had no formal education. A small fraction (2.6%) reported other forms of education. This suggests a generally moderate to high level of educational attainment among respondents.

Occupationally, housewives constituted the largest group (24.4%), followed by those engaged in trading (19.5%) and civil service (16.2%). Farming accounted for 14.6%, while artisan or skilled laborers represented 13.0% of respondents. Students made up 8.1%, and unemployed individuals accounted for 3.3%, with other occupations constituting 1.0%.

Finally, the place of residence shows that the majority of respondents lived in semi-urban areas (42.2%), followed by rural areas (37.3%), while urban residents accounted for 20.5%. This indicates that most participants resided outside major urban centers

Table 4.2: Frequency and Percentage Distribution of ANC Attendance

ANC Attendance	Frequency (f)	Percentage (%)
Frequency		
Never	50	8.1
Once	70	11.4
2–3 times	220	35.7
4 or more times	276	44.8
Total	616	100

The table shows the frequency of antenatal care (ANC) attendance among the respondents. The highest proportion of respondents attended ANC four or more times (44.8%), indicating that nearly half of the women met or exceeded the recommended number of ANC visits.

Table 4.3: Satisfaction with Maternal and Infant Healthcare Services at PHC Facilities (n = 616)

Satisfaction Level	Frequency (f)	Percentage (%)
Very dissatisfied	40	6.5
Dissatisfied	80	13.0
Neutral	130	21.1
Satisfied	220	35.7
Very satisfied	146	23.7
Total	616	100

The table presents respondents' levels of satisfaction with maternal and infant healthcare services at primary health care facilities. The largest proportion of respondents reported being

satisfied, accounting for 35.7%, while 23.7% indicated that they were very satisfied. Together, these findings show that 59.4% of respondents expressed a positive level of satisfaction with the services received at PHC facilities.

About 21.1% of respondents reported a neutral level of satisfaction, suggesting that a considerable proportion neither perceived the services as particularly good nor poor. On the other hand, 13.0% of respondents were dissatisfied, and 6.5% were very dissatisfied, indicating that 19.5% of respondents expressed negative perceptions of the services. The results suggest that while the majority of respondents were satisfied with maternal and infant healthcare services at PHC facilities, a notable proportion still reported dissatisfaction, highlighting the need for continuous improvement in service quality and client experience.

Table 4.4: Adequacy of Facilities and Equipment at PHC Center (n = 616)

Adequacy Level	Frequency (f)	Percentage (%)
Very inadequate	60	9.7
Inadequate	140	22.7
Neutral	120	19.5
Adequate	220	35.7
Very adequate	76	12.3
Total	616	100

The table 4.4, shows respondents' perceptions of the adequacy of facilities and equipment at primary health care centers. The highest proportion of respondents perceived the facilities and equipment as adequate, accounting for 35.7%, while 12.3% considered them very adequate. Combined, this indicates that 48.0% of respondents viewed the facilities and equipment positively.

A neutral perception was reported by 19.5% of respondents, suggesting that nearly one-fifth neither clearly perceived adequacy nor inadequacy. In contrast, 22.7% of respondents described the facilities and equipment as inadequate, and 9.7% rated them as very inadequate, indicating that 32.4% held negative views regarding adequacy. The findings suggest that although nearly half of the respondents perceived PHC facilities and equipment as adequate, a substantial proportion still expressed concerns about inadequacy, underscoring the need for improved infrastructure and equipment in PHC centers.

Table 4.5: Availability of Skilled Health Workers at PHC Facility

Availability of Skilled Health Workers at PHC Facility	Frequency (f)	Percentage (%)
Yes	210	34.1
No	406	65.9
Total	616	100

The table shows respondents' perceptions of the availability of skilled health workers at primary health care facilities. Only 34.1% of respondents reported that skilled health workers were available at their PHC facility, while a majority, 65.9%, indicated that skilled health workers were not available. This finding suggests a significant shortage of skilled health personnel in PHC facilities within the study area. The high proportion of respondents reporting non-availability may negatively affect the quality of maternal and infant healthcare services and could contribute to reduced utilization of PHC facilities. The results highlight

the need for improved staffing and deployment of skilled health workers at PHC facilities to enhance service delivery and client confidence.

Table 4.6: Availability of Essential Drugs and Medical Supplies at PHC Facility

Availability Level	Frequency (f)	Percentage (%)
Always	120	19.5
Often	180	29.2
Sometimes	160	26.0
Rarely	100	16.2
Never	56	9.1
Total	616	100

The table shows respondents' perceptions of the availability of essential drugs and medical supplies at primary health care facilities. About 19.5% of respondents reported that essential drugs and supplies were always available, while 29.2% indicated they were often available. Together, 48.7% of respondents experienced a generally reliable supply of essential drugs and medical materials.

However, a significant proportion faced inconsistent availability. 26.0% reported that drugs and supplies were available sometimes, 16.2% said rarely, and 9.1% reported that essential drugs and supplies were never available. The findings reveal that while nearly half of the respondents had fairly consistent access to essential drugs and supplies, a considerable proportion experienced shortages or irregular availability, highlighting the need to strengthen the supply chain and ensure consistent access to essential medical resources at PHC facilities.

Table 4.7: Effectiveness of Leadership and Management at PHC Facility

Leadership Effectiveness Level	Frequency (f)	Percentage (%)
Very ineffective	40	6.5
Ineffective	90	14.6
Neutral	130	21.1
Effective	250	40.6
Very effective	106	17.2
Total	616	100

The table shows respondents' perceptions of the effectiveness of leadership and management at primary health care facilities. The largest proportion of respondents, 40.6%, perceived leadership and management as effective, while 17.2% considered it very effective. Combined, 57.8% of respondents viewed the leadership at PHC facilities positively. About 21.1% of respondents were neutral regarding leadership effectiveness, indicating that a notable portion of clients neither strongly approved nor disapproved of facility management. Conversely, 14.6% rated leadership as ineffective and 6.5% as very ineffective, totaling 21.1% of respondents with negative perceptions. The findings suggest that more than half of the respondents were satisfied with the leadership and management at PHC facilities, but a significant minority reported challenges, emphasizing the need for continued improvement in managerial practices to enhance service delivery.

Table 4.8: Respondents' Suggested Changes to Improve Maternal and Infant Healthcare at PHC Facilities (n = 616)

Suggested Change / Theme	Frequency (f)	Percentage (%)
Increase number of skilled health workers	180	29.2
Improve availability of essential drugs & supplies	150	24.4
Upgrade infrastructure and medical equipment	120	19.5
Enhance training and capacity building for staff	60	9.7
Improve referral systems to higher-level facilities	50	8.1
Strengthen governance, management & protocols	40	6.5
Community education & awareness on maternal health	16	2.6
Total	616	100

The table presents respondents' suggestions for improving maternal and infant healthcare services at primary health care facilities. The most frequently recommended change was to increase the number of skilled health workers, cited by 29.2% of respondents, highlighting the perceived shortage of qualified personnel as a key barrier to quality care. Improving the availability of essential drugs and medical supplies was the second most common suggestion, mentioned by 24.4% of respondents, indicating that consistent access to medicines and materials is critical for service delivery. Upgrading infrastructure and medical equipment was suggested by 19.5%, reflecting the need for better-equipped facilities to support effective care. Other notable recommendations included enhancing training and capacity building for staff (9.7%) and improving referral systems to higher-level facilities (8.1%), which would strengthen both the quality and continuity of care. Strengthening governance, management, and protocols was cited by 6.5%, while community education and awareness on maternal health was suggested by 2.6%, emphasizing the importance of client engagement and health promotion. The findings indicate that respondents prioritize addressing staffing shortages, resource availability, and facility upgrades as key strategies to improve maternal and infant healthcare at PHC facilities. Data for IDI indicated that strengthening PHC through better staffing, drug supply, facility upgrades, and referral systems can improve the quality and timeliness of maternal and infant health services.

5.5 Conclusion

This study examined the relationship between primary healthcare (PHC) system weaknesses and maternal and infant health outcomes in Abia Central Senatorial District, Nigeria. The findings revealed that structural deficiencies—including inadequate staffing, insufficient infrastructure, erratic drug supply, weak referral systems, and poor governance significantly compromise the availability, accessibility, and quality of maternal and infant healthcare services. These weaknesses were shown to limit service utilization, resulting in delayed care-seeking and reliance on informal providers, which contribute to suboptimal maternal and infant health outcomes in the district.

The study further demonstrated that evidence-based strategies, such as workforce strengthening, community engagement, data-driven supply chain management, and improved governance, can mitigate these weaknesses and enhance PHC performance. The findings corroborate the literature on the critical role of functional primary healthcare systems in reducing maternal and infant morbidity and mortality while highlighting context-specific challenges in the Nigerian PHC system.

Using Health Systems Theory as the guiding framework, the study underscores that maternal and infant health outcomes are shaped not only by individual behavior but by the coordinated functioning of the health system's building blocks. Structural weaknesses within these blocks disrupt service delivery, reduce utilization, and ultimately undermine health outcomes. By linking systemic deficiencies to observed health outcomes, this study provides empirical and theoretical evidence for the urgent need to strengthen PHC in Abia Central.

In conclusion, improving maternal and infant health outcomes requires a holistic approach that addresses the structural, operational, and governance challenges of primary healthcare. The study's findings provide a strong basis for policy formulation, resource allocation, and programmatic interventions aimed at creating a resilient, accessible, and effective PHC system capable of meeting the needs of mothers and infants in Abia Central Senatorial District.

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