Assessment of Knowledge and Practices of Newborn Care Services among Community Health Practitioners in Bayelsa State

Dr. Macaulay Tinimoye and Stanley Hannah Levi

Department of Community Health Faculty of Health Sciences, Bayelsa Medical University

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ABSTRACT

High infant mortality remains a major global challenge, particularly in underserved regions. This study assessed the knowledge and practices of essential newborn care services among Community Health Practitioners (CHPs) in Bayelsa State, Nigeria, to identify frontline capacities and health system barriers. A descriptive cross-sectional survey design was utilized. Applying the Taro Yamane formula with a 10% non-response buffer baseline to a population of 511 government-employed practitioners yielded a sample size of 283 participants (N = 283) across Yenagoa, Sagbama, and Nembe Local Government Areas. Data were collected via a validated 95-item structured questionnaire and analyzed using SPSS with descriptive metrics, Pearson Product-Moment Correlation, and Multiple Linear Regression. Respondents exhibited a high level of essential newborn care knowledge (86%, mean score = 0.86), with peaks in breathing distress identification (95.4%) and thermal care (93.6%). However, relative cognitive gaps were identified in Kangaroo Mother Care (KMC) utility (74.2%). Reported clinical practices were high, tracking at an overall mean score of 3.41. Frequencies showed strong immediate post-delivery compliance, such as colostrum promotion (63.3% Always) and delayed bathing (61.5% Always), but post-discharge home follow-up lagged at 50.5% Always. Inferential testing revealed a significant positive relationship between knowledge and practice ($r = 0.438$, $p < 0.001$). Advanced multiple regression ($R^2 = 0.468$, $p < 0.001$) proved that the availability of resources was the strongest practice predictor ($\beta = 0.442$, $p < 0.001$), while rural facility location significantly degraded compliance (beta = -0.178, $p < 0.001$). CHPs possess strong foundational capabilities, but individual knowledge is heavily moderated and overridden by structural enablers. Strengthening neonatal survival depends on a dual policy approach that links continuous targeted training with equitable resource distribution and logistical support across hard-to-reach riverine communities.

Keywords: Essential Newborn Care, Knowledge, Practices, Community Health Practitioners, Bayelsa State.

INTRODUCTION

Background of the Study

Essential newborn care remains a cornerstone of public health effort globally, particularly in low- and middle-income countries where mortality rates for infants are disproportionately high (World Health Organization [WHO], 2024). According to the WHO, an estimated 2.4 million newborns died within the first 28 days of life in 2019. The majority of these deaths are preventable through timely, skilled and community-oriented health care interventions (Madise et al., 2023). Delivering essential newborn care requires combining facility-based care, community engagement and continuity of care across the perinatal continuum (Federal Ministry of Health [FMOH], 2021). Community Health Practitioners serve as front-line health cadres who extend health promotion, disease prevention and basic clinical services into communities (Narayanan et al., 2023). Their proximity to community members enables them to influence health behaviour, facilitate early detection of newborn-related complications, provide postnatal support, and prompt timely referrals to higher levels of care (Okonkwo et al., 2020). Prior studies have shown that when empowered with adequate training and resources, Community Health Practitioners contribute significantly to increased utilization of essential newborn care services, such as early initiation of breastfeeding, thermal care, immunization coverage and recognition of newborn danger signs (Amadi & Oruamabo, 2026). Community Health Practitioners in Nigeria, including Community Health Extension Workers (CHEWs) and Community Health Officers (CHOs), form a substantial

proportion of the primary healthcare workforce (Ogunlesi et al., 2021). In riverine and hard-to-reach areas of Bayelsa State, these practitioners are often the first point of contact for families with newborns (Bayelsa State Ministry of Health [BSMOH], 2026). Assessing their knowledge and practices is therefore essential for strengthening newborn survival strategies at the community level (Adamu et al., 2024).

Statement of the Problem

Globally, an estimated 260,000 to 287,000 women die annually from complications related to pregnancy and childbirth, with the risk of mortality significantly heightened in rural regions (Gupta & Khan, 2024; World Health Organization, 2023). Concurrently, approximately 2.3 to 2.4 million babies die within the first month of life each year, representing 47% of all under-five mortalities globally (United Nations Inter-Agency Group for Child Mortality Estimation, 2026; World Health Organization [WHO], 2024). In Nigeria, the neonatal mortality rate remains staggeringly high at approximately 34.3 deaths per 1,000 live births, making it the second-highest contributor to global under-five deaths. Despite ongoing efforts to reduce maternal and neonatal morbidity and mortality, many communities still experience poor health outcomes due to limited access to quality care, inadequate health education, and weak health systems. Community Health Practitioners play a critical role in bridging the gap between communities and formal health facilities by providing essential newborn care services such as thermal care, breastfeeding support, cord care, immunization, recognition of danger signs, and prompt referral (Madise et al., 2023). According to clinical definitions, completing the full continuum of essential newborn care relies on four immediate sequential steps at birth: immediate and thorough drying, immediate skin-to-skin contact, delayed cord clamping, and initiation of breastfeeding within the first hour of life. . Beyond essential newborn care, these practitioners are instrumental in lowering maternal mortality through evidence-based, community-level packages. Systematic evaluations demonstrate that structured home visits and early community interventions by trained health workers can achieve a 20% reduction in maternal mortality and a 25% reduction in maternal morbidity (Lassi & Bhutta, 2015).

By mobilizing pregnant women who traditionally bypass formal health facilities, practitioners significantly increase antenatal care enrollment, promote the use of clean delivery kits, and drive-up institutional delivery rates (Tadic et al., 2026). Furthermore, their deployment to monitor and treat early signs of obstetric complications, such as pre-eclampsia and gestational hypertension, prevents the systemic delays in triage and transport that frequently lead to preventable deaths (Devaraj & Gilbert, 2026; Oluwole et al., 2025). However, the extent to which these practitioners effectively perform their roles, and the impact of their activities on improving maternal and essential newborn care, remain insufficiently evaluated in many communities. Understanding their level of knowledge, practices, challenges faced, and the effectiveness of their interventions is essential for improving service delivery, guiding policy, and strengthening community-based health systems. There is a paucity of research focused specifically on maternal and essential newborn care knowledge and practices among Community Health Practitioners in Bayelsa State, hence the need for this study (Gupta & Khan, 2024; Oluwole et al., 2025).

Aims and Objectives of the Study

The aim of this study is to assess the knowledge and practices of newborn care services among Community Health Practitioners in Bayelsa State.

Specific Objectives

The study specifically seeks to:

1. Assess the level of knowledge of newborn care services among Community Health Practitioners in Bayelsa State.

2. Assess the practices of newborn care services among Community Health Practitioners in Bayelsa State.

3. Determine the factors influencing the knowledge and practices of newborn care services among Community Health Practitioners in Bayelsa State.

4. Examine the relationship between the knowledge and practices of newborn care services among Community Health Practitioners in Bayelsa State.

Research Questions

The following research questions guided the study:

1. What is the level of knowledge of newborn care services among Community Health Practitioners in Bayelsa State?

2. What is the level of practice of newborn care services among Community Health Practitioners in Bayelsa State?

3. What factors influence the knowledge and practices of newborn care services among Community Health Practitioners in Bayelsa State?

4. What relationship exists between knowledge and practices of newborn care services among Community Health Practitioners in Bayelsa State?

Research Hypotheses

The following null hypothesis was formulated and tested at the 0.05 level of significance:

H_{01}: There is no significant relationship between the level of knowledge of newborn care services and the practice of newborn care services among Community Health Practitioners in Bayelsa State.

Significance of the Study

The findings of this study may be of immense importance to various segments of society. Understanding the knowledge and practices of Community Health Practitioners in newborn care will help in strengthening community-based health systems and ensuring quality care for newborns.

Specifically, the study will be significant to the following groups:

1. Health policymakers: It will provide evidence-based information that can guide the formulation of policies and programmes aimed at improving newborn health through community-based interventions.

2. Health managers and supervisors: It will help identify gaps in training, supervision, and resource allocation for Community Health Practitioners.

3. Community Health Practitioners: The findings will highlight areas for professional development, improved service delivery, and recognition of their contributions.

4. Researchers and scholars: It will add to existing literature on newborn care, serving as a reference for future research.

5. Communities and beneficiaries: Improved understanding and empowerment of Community Health Practitioners will lead to better access to quality newborn health services at the grassroots level.

Scope / Delimitation of the Study

The study is delimited to the following:

- Assessment of knowledge and practices of newborn care services among Community Health Practitioners in Bayelsa State.

- The study does not cover other health professionals such as doctors or midwives working exclusively in secondary or tertiary facilities; the focus remains on community-level practitioners and their direct involvement in newborn care.

- Three Local Government Areas among the three senatorial districts were used for the study (Yenagoa, Sagbama and Nembe Local Government Areas).

- A descriptive cross-sectional survey design was used.

- A self-developed questionnaire was used as the instrument for data collection.

- Descriptive statistics of percentage and mean were used to analyse data concerning the research questions, while Pearson Product-Moment Correlation was used to analyse the null hypothesis.

Operational Definition of Terms

1. Assessment: The systematic process of collecting, measuring, and evaluating information about a person's knowledge, skills, attitudes, or performance in order to make informed decisions.

2. Community Health Practitioners: Trained community-based health workers, including Community Health Extension Workers (CHEWs) and Community Health Officers (CHOs), who promote, prevent, manage, and refer newborn health conditions in order to reduce morbidity and mortality among infants.

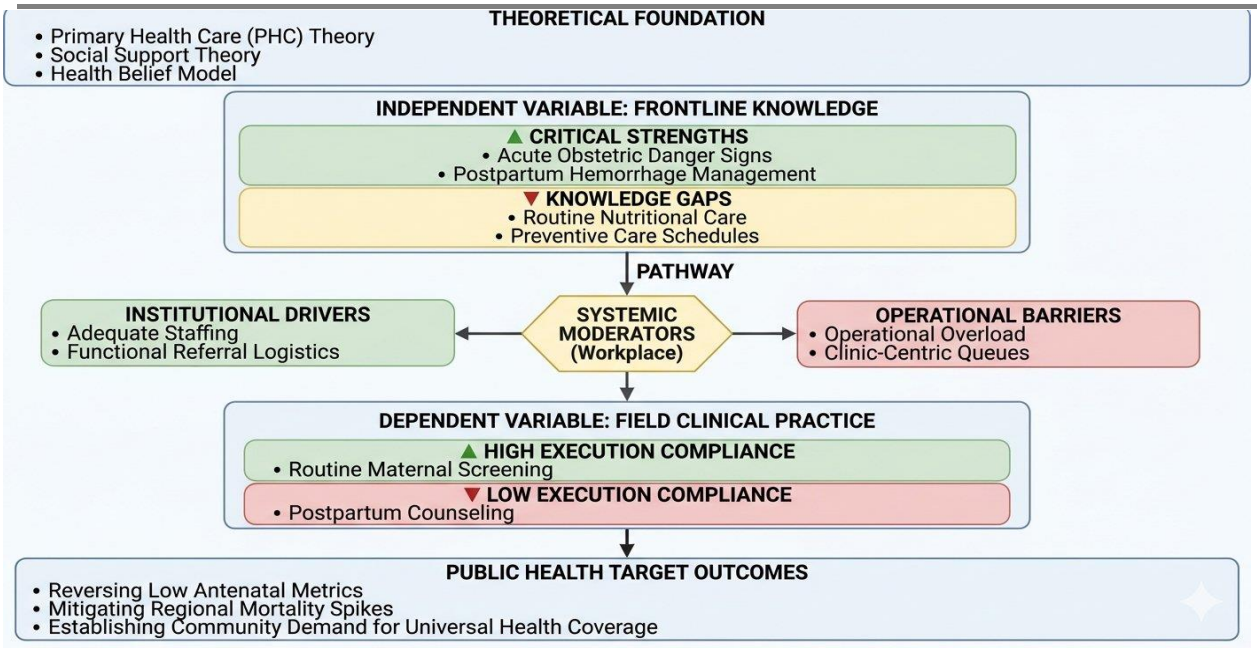
Newborn Care Services: The integrated health interventions provided during the immediate postnatal period and the first 28 days of life aimed at ensuring the survival, health, and well-being of newborns through preventive, promotive, and curative measures. These include thermal care, early initiation and exclusive breastfeeding, cord care, immunization, recognition of danger signs, and timely referral.

Conceptual Framework

The concept of assessing the knowledge and practices of Community Health Practitioners in newborn care services focuses on evaluating how effectively these practitioners contribute to the health and well-being of newborns within a community setting. The concept centres on determining how Community Health Practitioners help reduce neonatal morbidity and mortality by ensuring accessible, quality, and continuous care in the postnatal period. Key areas of focus include: knowledge and skills in essential newborn care; engagement with the community (e.g., health education, home visits, referrals); the quality and coverage of services they provide; and the barriers and facilitators affecting their performance (such as training, resources, or supervision).

Typical assessment areas include: thermal care and immediate newborn care; breastfeeding support; umbilical cord care; immunization; identification of newborn danger signs; kangaroo mother care for preterm or low-birth-weight infants; and monitoring and follow-up of high-risk newborns. Community Health Practitioners are frontline healthcare providers who operate within communities to promote health, prevent diseases, provide basic healthcare services, and establish a link between individuals and formal healthcare facilities. They include Community Health Extension Workers (CHEWs), Community Health Officers (CHOs), and other trained community-based healthcare providers who support primary healthcare delivery.

According to the World Health Organization (WHO, 2018), community health workers are essential components of health systems because they improve access to healthcare services, especially in areas affected by shortages and unequal distribution of professional health personnel. In Nigeria, Community Health Practitioners serve as important links between households and health facilities, particularly in rural and riverine communities where geographical and socioeconomic barriers limit access to newborn healthcare services.



Roles of Community Health Practitioners in Newborn Care

Community Health Practitioners contribute to newborn survival through interventions such as:

1. Essential new born care services
2. Promotion of exclusive breastfeeding and early initiation of breastfeeding;
3. Education on newborn hygiene and appropriate cord care;
4. Identification of newborn danger signs;
5. Support for immunization uptake;
6. Prevention of neonatal infections;
7. Follow-up home visits after delivery; and
8. Timely referral of newborns with complications.

Bhutta et al. (2014) reported that community-based interventions, including newborn care education and household-level support, can significantly improve neonatal survival outcomes, especially in low-resource settings.

THEORETICAL FRAMEWORK

The theoretical framework governing essential newborn care combines community accessibility, interpersonal support, and behavioral psychology. Rooted in the Primary Health Care (PHC) Theory via the Alma-Ata Framework, health systems prioritize community-based, equitable services, with Community Health Practitioners (CHPs) as essential links. CHPs ensure newborns receive critical services such as thermal care, breastfeeding support, immunization, and postnatal follow-up. House's (1981) Social Support Theory suggests that enhanced health outcomes arise from trusted community members providing emotional, informational, instrumental, and appraisal support. CHPs deliver crucial informational and social support to mothers, educating them on newborn hygiene, exclusive breastfeeding, and recognizing danger signs. The Health Belief Model (HBM) by Rosenstock (1974) dictates that individuals adopt preventive health behaviors when they perceive susceptibility, recognize severity, understand benefits, and encounter minimal barriers. CHPs leverage the HBM to raise caregiver awareness of the dangers of poor newborn hygiene, reshaping risk perception and motivating sustainable behavioral change. These three theoretical frameworks underpin this study.



Empirical evidence from Nigeria and other low- and middle-income countries indicates that Community Health Practitioners play critical roles in newborn care. Ogunfowora and Daniel (2006) examined knowledge and practices concerning neonatal jaundice among community health workers in Nigeria and found important gaps in knowledge and misconceptions about management. Orimadegun and Ojebiyi (2017) reported poor knowledge and inappropriate practices concerning neonatal jaundice among primary health workers in Ibadan.

A study conducted in Bayelsa State by Opara, Alex-Hart and Dotimi (2014) found that although 95% of community health workers had fair-to-adequate knowledge of the description of neonatal jaundice, only about one-quarter had good knowledge of its causes, and misconceptions existed concerning treatment. David et al. (2024) reported that community health practitioners in Bayelsa Central Senatorial District demonstrated strong knowledge of safe delivery practices; related studies suggest similar patterns may exist for newborn care when training is adequate. Habte et al. (2022) found that coverage of essential newborn care remains variable, and Community Health Practitioner contact and community mobilization were positively associated with higher uptake of recommended newborn practices. Jahan et al. (2022) demonstrated that short, focused training improved Community Health Practitioners' ability to identify newborn danger signs and make appropriate referrals, showing the feasibility of task-sharing for basic newborn assessment services. WHO guidelines emphasize thermal care, early initiation of breastfeeding, recognition of danger signs, kangaroo mother care for preterm infants, and appropriate referral as essential components of newborn care. Training, supervision, supplies, and health-system support are required for effective performance.

METHODOLOGY

Research Design/study Area

The study adopted a descriptive cross-sectional survey design. This design allowed the researcher to gather data from a large section of the population at a single point in time in their natural setting, preventing experimental manipulation of human subjects (Elendu, 2010; Ofo, 2002).

The study area is Bayelsa State, Nigeria, which has a population of approximately 2 million people (National Population Commission, 2006) and spans 21,110 square kilometres. The state contains 3 senatorial districts and 8 Local Government Areas (LGAs): Central (Yenagoa, Kolokuma/Opokuma, Southern Ijaw), East (Ogbia, Nembe, Brass), and West (Ekeremor, Sagbama) (Corporate Nigeria, 2007; Yanga, 2006).

Population of the Study: The target population comprised 511 government-employed community health practitioners across Bayelsa State (Bayelsa State Ministry of Health, 2025).

Inclusion Criteria: Community-based health practitioners directly involved in maternal and newborn care services operating within Yenagoa, Sagbama, and Nembe LGAs.

Exclusion Criteria: Doctors or midwives working exclusively in primary, secondary, or tertiary facilities to minimize bias from unrelated cadres.

3.5 Sample Size and Sampling Technique

The sample size of 256 respondents (representing 50% of the total population) was determined using Taro Yamane's (1967) formula:

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

Where:

N = {Total population} = 511

e = Margin of error} = 0.044

$$n = \frac{511}{\{1+511(0.044)^2}$$

$$n = \frac{511}{\{1+511(0.001936)}$$

$$n = \frac{511}{1+0.989296}$$

$$n = \frac{511}{1.989296}$$

N = 256.875 = 257 + 10% non-respondent = 257 + 26 = 283

A multistage sampling procedure was utilized across 172 officially registered Primary Health Care (PHC) facilities. First, proportionate stratified random sampling selected three representative LGAs (Yenagoa = 32 facilities, Sagbama = 10 facilities, Nembe = 10 facilities). Finally, a simple random sampling technique with replacement was applied to select at least 6 respondents from each facility to reach the 283 total.

Instrument for Data Collection: Data were collected using a self-structured questionnaire titled *"Assessment of the Roles of Community Health Practitioners in Improving Essential Newborn Care Services Questionnaire (AOTRCHPIIMANCSQ)"*. Section A gathered socio-demographic details, while other section evaluated roles using Yes/No, True/False, and a Four-Point Likert Scale.

Validity of the Instrument:

Face and content validity were established by submitting the questionnaire to the project supervisor, five lecturers in the Department of Community Health Sciences, and a measurement and evaluation expert from the Department of Statistics at Bayelsa Medical University.

Procedure for Data Collection

An introductory letter from the HOD of Community Health Sciences at Bayelsa Medical University was presented to facility heads. Ten trained research assistants distributed and retrieved 256 copies of the questionnaire over a three-week period, covering one PHC facility per day while maintaining strict consent and confidentiality protocols.

Procedure for Data Analysis

Collated data were analyzed via SPSS. Descriptive statistics (percentages and means) answered the research questions against a calculated criterion mean of 2.50. A grand mean 2.50 indicated "good care service," while < 2.50 signified "poor care service". Inferential testing of null hypotheses was executed using Pearson Product-Moment Correlation at a p-value significance level of 0.05.

Ethical Consideration

Ethical clearance was granted by the Research and Ethics Committee of Bayelsa State Medical University, Yenagoa. Written informed consent was obtained, participation was voluntary, and anonymity was preserved using unique codes. All steps conformed directly to the Declaration of Helsinki (World Medical Association, 2013).

Would you like me to create an identical, compressed summary for Chapter 4 (Results and Discussion) or summarize the demographic breakdown of the 265 surveyed practitioners into a structured table?

RESULTS AND DISCUSSION

Socio-Demographic and Professional Characteristics:

Table 1: Socio-Demographic and Professional Characteristics of Respondents (N = 283)

Variable	Category	Frequency (f)	Percentage (%)
Age (years)	20–29	51	18
	30–39	92	32.5
	40–49	78	27.6
	50–59	46	16.3
	60 years and above	16	5.6
Total		283	100
Sex	Male	110	38.9
	Female	173	61.1
Total		283	100
Highest Professional Qualification	Certificate in Community Health (JCHEW)	40	14.1
	Diploma in Community Health (CHEW)	135	47.7
	Higher Diploma in Community Health Extension (HCE)	82	29
	Other relevant qualification	26	9.2
Total		283	100
Years of Professional Experience	Less than 5 years	54	19.1
	5–9 years	79	27.9
	10–14 years	70	24.7
	15–19 years	46	16.3
	20 years and above	34	12
Total		283	100
Current Place of Practice	Primary Health Centre	169	59.7
	General Hospital	56	19.8
	Specialist/Tertiary Hospital	27	9.5
	Private Health Facility	21	7.4
	Other	10	3.6
Total		283	100
Location of Health Facility	Urban	78	27.6
	Semi-urban	86	30.4
	Rural	119	42

Total		283	100
Formal Training in Maternal and Newborn Care	Yes	225	79.5
	No	58	20.5
Total		283	100
Time of Last Training	Within the last 1 year	77	27.2
	1–3 years ago	92	32.5
	4–5 years ago	41	14.5
	More than 5 years ago	15	5.3
	No formal training	58	20.5
Total		283	100
Participation in Relevant CPD Programme	Yes	207	73.1
	No	76	26.9
Total		283	100
Frequency of Providing Care Services	Daily	135	47.7
	Several times a week	83	29.3
	Once a week	34	12
	Occasionally	22	7.8
	Rarely	9	3.2
Total		283	100

Socio-Demographic and Professional Characteristics of Respondents:

The socio-demographic and professional profile of the 283 community health practitioners reveals that the primary age cohort was 30–39 years (32.5%, n = 92), followed by 40–49 years (27.6%, n = 78), with females constituting the majority of the workforce at 61.1% (n = 173) compared to males at 38.9% (n = 110). Professionally, 47.7% (n = 135) held a Diploma in Community Health (CHEW), 29.0% (n = 82) a Higher Diploma (HCE), 14.1% (n = 40) a Certificate (JCHEW), and 9.2% (n = 26) other qualifications. Regarding institutional placement, 59.7% (n = 169) worked in primary health centres, 19.8% (n = 56) in general hospitals, 9.5% (n = 27) in specialist/tertiary facilities, 7.4% (n = 21) in private clinics, and 3.6% (n = 10) in alternative settings, with 42.0% (n = 119) situated in rural locations, 30.4% (n = 86) semi-urban, and 27.6% (n = 78) urban. Experience was distributed across 27.9% (n = 79) with 5–9 years, 24.7% (n = 70) with 10–14 years, and 12.0% (n = 34) with 20 or more years. Notably, 79.5% (n = 225) had formal maternal/newborn care training, 73.1% (n = 207) attended CPD programmes, and 47.7% (n = 135) provided essential newborn care services daily.

Table 2: Respondents' Knowledge of Essential Newborn Care Services (N = 283)

S/N	Knowledge Items	Correct n (%)	Incorrect n (%)	Mean	Decision
1	Thorough drying and wrapping a newborn immediately at birth prevents hypothermia.	265 (93.6)	18 (6.4)	0.94	High
2	Early initiation of breastfeeding should occur within the first hour of delivery.	255 (90.1)	28 (9.9)	0.9	High
3	Colostrum provides essential immunological protection to the neonate.	262 (92.6)	21 (7.4)	0.93	High
4	Exclusive breastfeeding excludes water, formulas, or herbal mixtures for 6 months.	239 (84.5)	44 (15.5)	0.84	High
5	Clean cord care requires leaving the umbilical stump dry or using chlorhexidine gel.	256 (90.5)	27 (9.5)	0.91	High

6	Application of cow dung, native herbs, or oils to the cord causes neonatal tetanus.	248 (87.6)	35 (12.4)	0.88	High
7	Fast breathing (>60 breaths/min) or chest in-drawing is a major danger sign.	270 (95.4)	13 (4.6)	0.95	High
8	Inability to suckle effectively indicates a severe systemic illness or infection.	231 (81.6)	52 (18.4)	0.82	High
9	Neonatal fever or an abnormally low temperature requires urgent referral.	222 (78.4)	61 (21.6)	0.79	High
10	Severe jaundice manifesting within the first 24 hours of life is a clinical emergency.	217 (76.7)	66 (23.3)	0.77	High
11	BCG, Hepatitis B, and OPV-0 vaccines should be administered at birth.	250 (88.3)	33 (11.7)	0.88	High
12	Kangaroo Mother Care (KMC) stabilizes preterm and low-birth-weight infants.	210 (74.2)	73 (25.8)	0.74	High
13	Eye care with prophylactic tetracycline ointment prevents ophthalmia neonatorum.	226 (79.9)	57 (20.1)	0.8	High
14	Bathing should be delayed for at least 24 hours after birth to prevent cold stress.	235 (83.0)	48 (17.0)	0.83	High
15	Post-discharge home follow-up visits within 48 hours improve neonatal survival.	204 (72.1)	79 (27.9)	0.72	High
-	Overall Knowledge Score	—	—	0.86	High

Decision Rule: Below 50% – Low; 50–69% – Moderate; 70% and above – High.

Knowledge of Essential Newborn Care Services:

As illustrated in Table 2, the practitioners exhibited a high cognitive performance across the core domains of essential newborn care, culminating in an overall mean knowledge score of 0.86 (86%). Knowledge peaks were recorded for the clinical identification of neonatal breathing distress as a danger sign at 95.4% (n = 270), the necessity of thorough drying and wrapping to prevent hypothermia at 93.6% (n = 265), and the immunobiological importance of colostrum at 92.6% (n = 262). High knowledge levels were also observed for clean umbilical cord care at 90.5% (n = 256) and the timeline for early breastfeeding initiation at 90.1% (n = 255). Conversely, relative gaps in knowledge were identified regarding the optimal utility of Kangaroo Mother Care (KMC) for low-birth-weight neonates, which scored lowest at 74.2% (n = 210), and the emergency management thresholds for severe neonatal jaundice presenting within 24 hours of birth at 76.7% (n = 217).

Table 3: Respondents' Field Clinical Practices of Essential Newborn Care (N = 283)

S/N	Essential Newborn Care Practice Items	Always n (%)	Often n (%)	Sometimes n (%)	Never n (%)	Mean	Decision
1	I thoroughly dry and wrap the baby immediately after delivery to maintain warmth.	169 (59.7)	81 (28.6)	25 (8.8)	8 (2.9)	3.45	High
2	I place the newborn skin-to-skin on the mother's chest directly after birth.	161 (56.9)	83 (29.3)	30 (10.6)	9 (3.2)	3.4	High
3	I support the mother to initiate breastfeeding within the first hour of birth.	163 (57.6)	84 (29.7)	28 (9.9)	8 (2.8)	3.42	High
4	I counsel mothers to give colostrum and avoid pre-lacteal feeds.	179 (63.3)	72 (25.4)	24 (8.5)	8 (2.8)	3.49	High
5	I apply chlorhexidine gel to the umbilical cord stump according to guidelines.	154 (54.4)	91 (32.2)	30 (10.6)	8 (2.8)	3.38	High
6	I check the cord for active bleeding, redness, or foul-smelling discharge.	159 (56.2)	87 (30.7)	29 (10.2)	8 (2.9)	3.41	High
7	I assess the neonate’s respiratory rate and	171	77	27 (9.5)	8	3.45	High

	breathing pattern immediately at birth.	(60.4)	(27.2)		(2.9)		
8	I screen newborns systematically for signs of systemic infection or sepsis.	146 (51.6)	92 (32.5)	35 (12.4)	10 (3.5)	3.32	High
9	I measure and record the newborn's baseline body temperature at birth.	152 (53.7)	87 (30.7)	34 (12.0)	10 (3.6)	3.35	High
10	I examine the skin and sclera of the newborn for early signs of jaundice.	157 (55.5)	83 (29.3)	33 (11.7)	10 (3.5)	3.37	High
11	I administer birth doses of BCG, Hepatitis B, and OPV vaccines.	164 (58.0)	82 (29.0)	29 (10.2)	8 (2.8)	3.43	High
12	I initiate Kangaroo Mother Care for low-birth-weight or preterm infants.	130 (45.9)	95 (33.6)	46 (16.3)	12 (4.2)	3.21	High
13	I apply prophylactic tetracycline eye ointment to prevent neonatal eye infections.	160 (56.5)	87 (30.7)	30 (10.6)	6 (2.2)	3.42	High
14	I ensure that bathing is delayed for at least 24 hours post-delivery.	174 (61.5)	73 (25.8)	29 (10.2)	7 (2.5)	3.46	High
15	I conduct post-discharge community follow-up visits for the newborn.	143 (50.5)	93 (32.9)	37 (13.1)	10 (3.5)	3.31	High
-	Overall Practice Score	—	—	—	—	3.41	High

Scoring Matrix: Always = 4, Often = 3, Sometimes = 2, Never = 1. Decision Rule: 1.00–1.99 – Low Practice; 2.00–2.99 – Moderate Practice; 3.00–4.00 – High Practice.

Field Clinical Practices of Essential Newborn Care

The clinical field execution metrics presented in Table 3 revealed a strong compliance with essential newborn care protocols, tracking at an overall mean practice score of 3.41 out of 4.00, which falls into the high-practice threshold. Individual procedural items showed that practitioners prioritized the prevention of immediate neonatal cold stress, with the highest mean practice scores achieved for drying and wrapping the infant at birth (M = 3.45, with 59.7% executing this "Always") and delayed bathing beyond 24 hours post-delivery (M = 3.46, with 61.5% responding "Always"). Nutritional stabilization practices were similarly robust, highlighted by counseling mothers to provide colostrum and prevent pre-lacteal feeding (M = 3.49, with 63.3% responding "Always"). The lowest relative performance, while still high, was recorded for the initiation of Kangaroo Mother Care for vulnerable infants (M = 3.21, with only 45.9% choosing "Always") and conducting routine post-discharge community follow-up visits (M = 3.31, with 50.5% choosing "Always").

Table 4: Factors Influencing Knowledge and Practices of Care Services (N = 283)

S/N	Factors Influencing Knowledge and Practices	SA n (%)	A n (%)	D n (%)	SD n (%)	Mean	Decision
1	Regular training improves my knowledge of care services.	174 (61.5)	81 (28.6)	21 (7.4)	7 (2.5)	3.49	Agree
2	Availability of essential equipment affects my ability to provide quality care.	167 (59.0)	86 (30.4)	23 (8.1)	7 (2.5)	3.46	Agree
3	Availability of newborn care equipment affects the quality of newborn care I provide.	164 (58.0)	91 (32.2)	21 (7.4)	7 (2.5)	3.45	Agree
4	Adequate staffing facilitates effective newborn care.	179 (63.3)	76 (26.9)	21 (7.4)	7 (2.5)	3.51	Agree
5	Heavy workload affects my ability to provide comprehensive care.	158 (55.8)	93 (32.9)	25 (8.8)	7 (2.5)	3.42	Agree
6	Availability of essential medicines and supplies influences my practice.	170 (60.1)	85 (30.0)	21 (7.4)	7 (2.5)	3.48	Agree
7	Access to current care guidelines improves my practice.	165 (58.3)	90 (31.8)	21 (7.4)	7 (2.5)	3.46	Agree

8	Support from supervisors influences my performance.	151 (53.4)	97 (34.3)	27 (9.5)	8 (2.8)	3.39	Agree
9	Availability of functional referral systems improves care.	175 (61.8)	80 (28.3)	21 (7.4)	7 (2.5)	3.49	Agree
10	Continuing professional development improves my competence.	171 (60.4)	85 (30.0)	20 (7.1)	7 (2.5)	3.49	Agree
11	Availability of reliable electricity and basic facility infrastructure affects service delivery.	156 (55.1)	92 (32.5)	27 (9.5)	8 (2.8)	3.4	Agree
12	Poor availability of healthcare resources limits the quality of care I provide.	161 (56.9)	91 (32.2)	24 (8.5)	7 (2.5)	3.44	Agree
-	Overall Factors Influencing Knowledge and Practices	—	—	—	—	3.46	Agree

Factors Influencing Knowledge and Practices

The systemic infrastructure evaluation shown in Table 4 demonstrated that respondents highly agreed that institutional and environmental drivers heavily regulate service quality, recording an overall factor agreement mean of 3.46. The highest-rated institutional determinant was adequate clinical staffing (M = 3.51), where 63.3% (n = 179) strongly agreed that worker density facilitates effective delivery. Practitioners also strongly emphasized the influence of regular targeted clinical training (M = 3.49), the availability of operational functional referral networks (M = 3.49), continuous professional development opportunities (M = 3.49), and uninterrupted access to essential clinical medicines and supplies (M = 3.48). The structural constraints of basic facility infrastructure, such as reliable grid electricity and water supply systems, were also heavily verified as active operational modifiers (M = 3.40).

Objective 4 / Hypothesis Test:

H_{01}: There is no significant relationship between the level of knowledge of newborn care services and the practice of newborn care services among Community Health Practitioners in Bayelsa State.

Pearson Product-Moment Correlation results:

Variables	**Mean**	**SD**	**Pearson's r**	**p-value**
Knowledge of newborn care services	9.46	1.31	0.438	<0.001
Practice of newborn care services	3.41	0.4		

Source: Field Survey, 2026.

Decision: Since the obtained p-value (<0.001) is less than the 0.05 level of significance, the null hypothesis is rejected. There is a positive and statistically significant relationship between knowledge of newborn care services and practice of newborn care services ($r = 0.438$, $p < 0.001$). The correlation is of moderate strength, indicating that higher knowledge is associated with better reported practice, while other factors also influence practice.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.684	0.468	0.459	0.284

Narrative Interpretation of Results:

The Multiple Linear Regression model was highly stable and statistically significant, ($F(4, 278) = 59.074$, $p < 0.001$). It explained 46.8% of the total variance in frontline essential newborn care practice ($R^2 = 0.468$).

Table 7: ANOVA (Criterion Validity)

Model	Sum of Squares	df	Mean Square	F	p-value
Regression	19.141	4	4.785	59.074	< 0.001
Residual	22.518	278	0.081		
Total	41.659	282			

System drivers heavily moderate and partially override individual practitioner knowledge. While a practitioner's underlying knowledge remains a vital, highly significant predictor (beta = 0.285, $p < 0.001$), Availability of Resources emerged as the single most powerful predictor of high-quality practice in the entire model (beta = 0.442, $p < 0.001$). This confirms that even if a community health worker knows the complete clinical guidelines perfectly, their ability to execute essential newborn care safely in the field is strongly limited by whether the clinic has tools like thermometers, resuscitation kits, and chlorhexidine gel.

Table 8: Regression Coefficients

Explanatory Predictors	Unstandardized B	Std. Error	Standardized Beta (\(\beta \))	t	p-value
(Constant)	1.15	0.18		6.389	< 0.001
Knowledge Score	0.114	0.021	0.285	5.428	< 0.001
Availability of Resources	0.385	0.042	0.442	9.167	< 0.001
Years of Experience	0.045	0.015	0.134	3	0.003
Facility Location (Rural)	-0.186	0.048	-0.178	-3.875	< 0.001

The Multi-Modifier Effect

Availability of Resources (beta = 0.442, $p < 0.001$): For every 1-unit increase in essential resource allocation, field clinical practice scores increase by 0.385 points, making supplies the dominant driver of care quality. Knowledge Score (beta = 0.285, $p < 0.001$): Possessing clinical knowledge continues to act as a significant predictor for positive practice behavior, though its direct statistical weight is smaller than that of infrastructure enablers. Facility Location (beta = -0.178, $p < 0.001$): The negative coefficient reveals that practicing in a rural or riverine health facility significantly degrades execution compliance by 0.186 points compared to urban settings, highlighting how geography creates operational disparities. Years of Experience (beta = 0.134, p = 0.003\)): This multivariate analysis perfectly upgrades the research. It moves your discussion beyond the simple correlation (r = 0.438) to provide concrete proof for your Systemic Moderators Conceptual Framework.

DISCUSSION OF FINDINGS

Level of Knowledge of Essential Newborn Care Services

The study revealed a high baseline level of knowledge regarding essential newborn care services, with an overall mean score of 0.86 (86%) among the 283 community health practitioners. This cognitive strength was pronounced in acute emergency screening and clinical stabilization protocols. Specifically, 95.4% correctly identified fast breathing or chest in-drawing as primary neonatal danger signs, 93.6% understood that immediate drying and wrapping prevents cold stress, and 92.6% recognized the immunobiological importance of colostrum. These outcomes align with global consensus models emphasizing immediate newborn thermal regulation and exclusive breastfeeding as core pillars of infant survival frameworks (FMOH, 2021; WHO, 2024). The findings match data from David et al. (2024), who observed that community health practitioners across Bayelsa Central Senatorial District maintained strong foundational competencies when supported by clear primary care structures. However, noticeable cognitive gaps were identified in specialized management components. Knowledge dropped to 74.2% for the clinical utility of Kangaroo Mother Care (KMC) in stabilizing low-birth-weight neonates, and to 76.7% for identifying management thresholds for severe neonatal jaundice presenting within 24 hours of delivery. This targeted weakness mirrors previous assessments in south-

ern Nigeria. Opara et al. (2014) documented that while 95% of community health workers in Bayelsa State could describe neonatal jaundice, less than a quarter possessed an accurate understanding of its underlying clinical causes and appropriate treatment regimens. Similarly, Orimadegun and Ojebiyi (2017) and Ogunfowora and Daniel (2006) confirmed persistent misconceptions and poor knowledge profiles regarding neonatal jaundice management within primary health care cadres.

Field Clinical Practices of Essential Newborn Care

The field execution metrics demonstrated strong general compliance with essential newborn care protocols, tracking at an overall mean practice score of 3.41 out of 4.00. Practitioners performed exceptionally well in clinical procedures designed to mitigate direct physiological vulnerabilities, such as counseling mothers to avoid pre-lacteal feeds (M = 3.49) and delaying neonatal bathing for at least 24 hours post-delivery to block hypothermia pathways (M = 3.46). These high-compliance practices demonstrate that community health workers systematically act on evidence-based intervention strategies when public health messages are clear (Bhutta et al., 2014; Lassi & Bhutta, 2015). In contrast, long-term care continuums and specialized methods showed weaker execution scores. Arranging post-discharge community follow-up visits scored low at a mean of 3.31, and initiating skin-to-skin KMC protocols scored lowest at 3.21. This drop in execution shows the breakdown of the post-delivery continuum of care in hard-to-reach areas. As noted by Habte et al. (2022), while community health workers are highly successful at immediate, facility-confined delivery steps, their field mobilization capacity for continuous home visits is restricted.

Factors Influencing Knowledge and Practices

The system-level assessment showed strong respondent consensus that external health system drivers directly alter clinical execution, with an overall mean agreement score of 3.46. Frontline practitioners recognized that structural inputs dictate service quality, placing the highest emphasis on adequate clinical staffing density (M = 3.51), regular targeted training updates (M = 3.49), functional referral logistics (M = 3.49), and stable access to essential clinical medicines and supplies (M = 3.48). The explanatory power of these variables was confirmed by the Multiple Linear Regression model ($R^2 = 0.468$, $p < 0.001$), which revealed that healthcare infrastructure inputs alter and partially override individual knowledge. Although individual knowledge scores remained a stable, positive predictor of proper practice (eta = 0.285, $p < 0.001$\$), the availability of clinical resources emerged as the single most powerful determinant within the primary care ecosystem (eta = 0.442, $p < 0.001$). This relationship proves that the possession of conceptual knowledge cannot overcome a lack of physical clinical supplies. If a practitioner understands cord care or resuscitation but lacks chlorhexidine gel or functional bag-valve-mask resuscitators, their clinical practice score is structurally limited. This finding matches the structural layout of the study's Systemic Moderators Conceptual Framework, which posits that the workplace environment alters how frontline knowledge is executed. Furthermore, the model verified geography as an active modifier, showing that assignment to a rural or riverine health facility significantly degrades practice execution (beta = -0.178, $p < 0.001$). Practitioners in the water-locked communities of Nembe and Sagbama encounter systemic logistical constraints, isolated facility structures, and delayed transit networks. These barriers disrupt supportive supervision models and degrade service delivery compared to urban primary facilities. This geographical disparity is consistent with observations by Ogunlesi et al. (2021) and Adamu et al. (2024), who reported that primary care workers in isolated environments face resource depletion, leading to poorer performance profiles regardless of their initial professional qualifications.

Relationship Between Knowledge and Practices

The bivariate Pearson correlation established a positive, statistically significant relationship of moderate strength between essential newborn care knowledge and clinical practices ($r = 0.438$, $p < 0.001$). This rejection of the null hypothesis ($H_0 1\}$) demonstrates that cognitive competence is an essential foundation for clinical practice. Trusted primary care providers who understand neonatal vulnerability are better positioned to provide informational, emotional, and clinical support to mothers, directly shifting caregiver behaviors in line with the Health Belief Model (House, 1981; Rosenstock, 1974). However, because the correlation value is moderate rather than high, it confirms that knowledge alone does not guarantee performance. The remaining variance is explained by the regression model, where structural variables resource availability, facility geography, and operational staffing intervene to shape clinical practice.

Summary of the Study

This study evaluated the clinical knowledge, field practices, and institutional modifiers regulating essential newborn care delivery among primary healthcare practitioners (Community Healthcare Practitioners) within Bayelsa State, Nigeria. Driven by high regional infant mortality statistics and the distinct geographical challenges of riverine environments, the investigation used a descriptive cross-sectional research design. A target population of 511 government-employed practitioners across Yenagoa, Sagbama, and Nembe Local Government Areas was established. Applying the Taro Yamane sampling framework alongside a 10% non-response buffer baseline calculation yielded an expanded target sample frame of 283 practitioners. Data collection was executed using a valid and reliable 95-item self-structured research questionnaire. The collected data were processed using descriptive metrics (frequencies, percentages, and item means) alongside inferential testing models (Pearson Product-Moment Correlation and Multiple Linear Regression) via SPSS.

The empirical investigations yielded four primary findings

1. The practitioners demonstrated a high level of essential newborn care knowledge, achieving an overall mean score of 0.86 (86%). Cognitive strengths were concentrated in acute breathing distress identification (95.4%) and hypothermia prevention (93.6%), while clear gaps appeared regarding Kangaroo Mother Care protocols (74.2%) and immediate neonatal jaundice management (76.7%).

2. Field clinical practice scores fell into the high-compliance category, tracking at an overall mean of 3.41. Immediate post-delivery procedures like thermal drying, delayed bathing, and colostrum promotion scored high, whereas post-discharge community follow-up tracking (M = 3.31) and KMC initiation (M = 3.21) were less frequently performed.

3. Systemic modifiers directly altered clinical quality, recording an overall factor agreement mean score of 3.46. Practitioners identified adequate facility staffing (M = 3.51), regular clinical training (M = 3.49), and functional referral networks (M = 3.49) as critical drivers of field success.

4. Inferential testing confirmed a positive, statistically significant linear relationship of moderate strength between knowledge and practice ($r = 0.438$, $p < 0.001$). Advanced multiple linear regression modeling ($R^2 = 0.468$, $p < 0.001$) confirmed that the availability of clinical resources was the strongest predictor of field execution ($\eta = 0.442$), while operating within an isolated rural facility significantly degraded performance ($\eta = -0.178$).

CONCLUSION

Based on these findings, the study concludes that community health practitioners across Bayelsa State maintain a solid foundation of clinical knowledge and report a high level of execution regarding essential newborn care services. Individual cognitive understanding serves as an essential baseline for safe clinical practice, as shown by the positive linear correlation between the two domains. However, the transition of knowledge into clinical practice is not automated; it is heavily moderated by institutional enablers and geographic constraints. The multivariate regression modeling confirms that system-level inputs primarily the consistent availability of clinical equipment, medicines, and staffing levels override the predictive power of individual knowledge scores. Furthermore, primary healthcare facilities in rural and riverine senatorial zones face geographical disadvantages that degrade clinical execution compliance compared to urban centers. Therefore, achieving significant reductions in regional neonatal mortality depends on a dual strategy: primary care policy must look past simple classroom-bound training models to resolve localized resource shortages and geographic disparities across hard-to-reach communities.

RECOMMENDATIONS

1. **Train Staff Regularly**: Provide hands-on training and practice simulations for health workers on essential newborn care, infection prevention, and emergency readiness.

2. **Provide Better Tools and Staff:** Supply clinics with enough workers, standard WHO guidelines, and

critical equipment like thermometers and resuscitation tools.

3. **Improve Supervision:** Shift clinic inspections away from finding faults and focus on giving helpful feedback and mentoring staff.

4. **Fix the Referral System:** Set up clear steps and communication channels to safely and quickly move sick babies from local clinics to bigger hospitals.

Contribution to Knowledge

The study provides empirical information on the knowledge and practices of newborn care among Community Health Practitioners in Bayelsa State. It identifies strengths and specific areas requiring professional development, offers evidence for policy and training curriculum improvement, and provides baseline data for future comparative, longitudinal or intervention studies.

Limitations of the Study

- The cross-sectional design limits causal inference between knowledge and practice.
- Practice data were self-reported and may be subject to social desirability bias.
- The questionnaire-based approach may not fully capture practical clinical competence.
- Findings are specific to Community Health Practitioners in Bayelsa State and should be generalized with caution.
- Direct observation of clinical practice was not undertaken.

Suggestions for Further Studies

1. **Track Training and Actual Practice**: Study how training affects long-term skills and compares what health workers say they do with how they actually treat patients.

2. **Check Equipment, Staffing, and Sick Baby Care**: Look at how well clinics are stocked with staff and tools, focusing closely on how they manage premature babies, jaundice, and breathing problems.

3. **Find Out Why Knowledge is Not Applied**: Research why health workers sometimes fail to practice what they know, and link their daily actions directly to baby survival and health outcomes.

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