Original Article

The Effect of Leadership Training on Health Worker Attitudes towards Clients Attending Primary Health Centres in Benue State, Nigeria

Bitto TT[1]*, Rimamnunra GN[1], Bako IA[2], Bamidele JO[3], Shaahu VN[1], Utoo PM[1], Audu O[4], Ogbeyi GO[4], Adajime TP[1] and Ango JT[5]

[1]Department of Epidemiology and Community Health, College of Health Sciences, Moses Orshio Adasu University, Makurdi, Benue State, Nigeria.[2]Department of Epidemiology and Community Medicine, College of Medicine, Federal University of Lafia, Lafia, Nasarawa State, Nigeria[3], Medical Department, Mainland Hospital, Yaba, Lagos State, Nigeria.[4]Department of Community Medicine, Federal University of Health Sciences, Otukpo, Benue State, Nigeria, [5]Taskforce for Global Health Inc, Federal Capital Territory, Nigeria

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***Correspondence:** Terkaa Terrumun Bitto

Email:terksbee@gmail.com; tbitto@bsum.edu.ng;

Tel: +234 703 068 1852

ABSTRACT

Negative attitudes and interpersonal misconduct among healthcare providers constitute a critical, modifiable structural barrier to primary healthcare utilisation across sub-Saharan Africa. The Leadership Development Program (LDP), developed by Management Sciences for Health (MSH), empowers frontline health teams to apply core leading and managing practices to address performance challenges and strengthen workplace climate. This study evaluated the interventional effect of a 5-day LDP workshop on health worker attitudes towards clients attending rural Primary Health Centres (PHCs) in Benue State, Nigeria. A quasi-experimental study utilising mixed quantitative and qualitative evaluation methods was conducted over 12 months across 16 rural PHCs in Benue State, North-Central Nigeria. Semi-structured questionnaires were interviewer-administered to Women of reproductive age (WRAG) at baseline and at 6 months post-intervention, with qualitative triangulation. Quantitative data were analysed with IBM SPSS version 20 at a 95% confidence level ($p<0.05$). Frontline health workers demonstrated a statistically significant mean knowledge gain of 40.6% points following the LDP workshop ($p<0.001$). Among WRAG receiving care, the proportion of women reporting poor health worker attitudes in the intervention group fell from 18.8% to 0.0% ($p<0.001$). Qualitative accounts from Officers-in-Charge and mothers corroborated improved staff commitment, punctuality, and client-centred communication. The Leadership Development Program is an effective, low-cost, evidence-based health systems strengthening intervention that significantly improves healthcare provider attitudes and addresses attitudinal barriers to primary maternal healthcare utilisation. Institutionalising LDP within continuing professional development could accelerate progress towards respectful, person-centred maternal healthcare in similarly resourced rural settings.

Keywords: Antenatal Care; Benue State; Health Worker Attitudes; Leadership Development Program; Primary Healthcare; Quality of Care

INTRODUCTION

Despite measurable global progress under the Safe Motherhood Initiative and the Sustainable Development Goals, maternal mortality remains a formidable public health challenge in developing countries. Earlier global estimates attributed approximately two-thirds (66.3%) of maternal deaths worldwide to sub-Saharan Africa[1], and although the most recent inter-agency estimates show a decline in the global maternal mortality ratio between 2000 and 2023, progress has slowed markedly over the past decade, and sub-Saharan Africa continues to account for the overwhelming majority of global maternal deaths.[2] In Nigeria specifically, national demographic surveys have long documented persistent deficits in facility-delivery coverage and skilled birth attendance, with rural populations bearing disproportionately higher lifetime risks of maternal mortality than their urban counterparts.[3]

While physical infrastructure, commodity availability, and geographic proximity to care are well-recognised determinants of service utilisation, the interpersonal behaviour and attitude of Maternal Health Care Providers (MHCPs) are increasingly understood as critical, independent modifiers of care-seeking decisions.[4] Experiencing or anticipating negative provider behaviours — including verbal abuse, scolding, harshness, neglect, discrimination, and a perceived lack of empathy — discourages pregnant women from attending Antenatal Care (ANC) and from seeking skilled, facility-based delivery.[4] This pattern is extensively documented across sub-Saharan Africa: systematic reviews and meta-analyses

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estimate that disrespect and abuse during facility-based childbirth affect a substantial proportion of women across the region[5,6], and qualitative work with both clients and providers indicates that such mistreatment is frequently normalised within overstretched, under-resourced facilities.[7,8] More recent Nigerian facility-delivery analyses also confirm that rural populations bear a disproportionately higher lifetime risk of maternal mortality than their urban counterparts; the rural–urban gap, and the structural and health-system barriers sustaining it, persists into the present decade.[9,10]

Nigerian providers themselves report structural stressors — heavy workloads, inadequate staffing, poor remuneration, and weak supervisory support — as proximate drivers of harsh or dismissive interactions with clients, even where individual providers do not intend harm.[8] National survey data have previously indicated that negative health worker attitudes deterred up to 17.0% of women from accessing healthcare facilities altogether[3], and recent Nigerian evidence continues to link the interpersonal quality of care directly to client satisfaction and continued facility use.[9,10,11,12]

Addressing these attitudinal and behavioural barriers is often assumed to require costly infrastructural investment or protracted pre-service curriculum reform. However, a growing body of evidence supports participatory, low-cost management and leadership capacity-building as a feasible alternative or complement to structural investment.[16,17,18] The Leadership Development Program (LDP), developed by Management Sciences for Health (MSH), is one such participatory framework that has been scaled across multiple low- and middle-income countries. It enables frontline health worker teams to apply core Leading Practices (scanning, focusing, aligning/mobilising, inspiring) alongside Managing Practices (planning, organising, implementing, monitoring and evaluating) to identify and resolve locally defined workplace challenges and to foster a more supportive organisational climate.[13] Earlier LDP evaluations in Egypt and Zambia demonstrated improvements in provider morale, teamwork, and selected service-delivery indicators following leadership training[14,15], and more recent scoping and mapping reviews of healthcare leadership interventions in sub-Saharan Africa continue to identify frontline leadership development as one of the more consistently effective, exportable strategies for strengthening workplace climate and provider performance, even where evidence quality remains heterogeneous[16,17,18,19]. Complementary evidence from Nigeria and other low- and middle-income settings similarly shows that structured, short-duration in-service training can produce measurable gains in frontline health worker knowledge and competence, even without accompanying infrastructural upgrades[20,21]. At the level of individual provider behaviour, interventions addressing emotional intelligence — a core competency embedded within the LDP curriculum — have been associated with more empathetic, patient-centred caring behaviour in clinical settings[22].

In parallel, the global maternal health field has increasingly reframed "quality of care" to explicitly include the experiential, person-centred dimension of care, not merely its clinical or technical adequacy.[23] Validated instruments for measuring person-centred maternity care have been developed and applied in Kenya and elsewhere[24], and several recent quality-improvement and behavioural-design interventions targeting respectful maternity care in Kenya, Zambia, and Ethiopia have demonstrated that provider-facing interventions can meaningfully reduce disrespect and abuse during childbirth[25,26,27], although a broader landscaping review cautions that the evidence base for respectful-care interventions across Africa remains fragmented and rarely rigorously evaluated.[28] This gap is compounded by persistently weak managerial capacity at the primary healthcare facility level across low- and middle-income countries, which constrains the routine supervision and feedback mechanisms needed to sustain attitudinal change.[29]

Despite this expanding evidence base, rigorously evaluated interventional data on frontline leadership training and its direct effect on measured, client-reported provider attitudes remain comparatively scarce in the Nigerian primary healthcare context. This study evaluated the direct effect of a 5-day LDP workshop on frontline health worker attitudes, as reported by women of reproductive age attending antenatal care, in rural Primary Health Centres across Benue State, North-Central Nigeria — a predominantly rural, agrarian state that reflects many of the structural constraints characteristic of sub-Saharan African primary healthcare systems.

THEORETICAL AND CONCEPTUAL FRAMEWORK

This interventional trial is anchored in the MSH Leading and Managing for Results Framework.[13] The framework posits that when health managers and frontline teams consistently apply Leading Practices (scanning, focusing, aligning/mobilising, inspiring) together with Managing Practices (planning, organising, implementing, monitoring and evaluating), they enhance three core operational dimensions:

1. Improved Work Climate: fostering empathy, mutual respect, constructive communication, and shared commitment.
2. Improved Management Systems: optimising resource allocation, team coordination, and feedback loops.
3. Enhanced Capacity to Respond to Change: empowering teams to proactively overcome workplace challenges through the structured Challenge Model.

These operational improvements are theorised to translate directly into enhanced quality of service delivery and more positive client experiences, ultimately improving maternal healthcare utilisation and outcomes.

MATERIALS AND METHODS

Study Area

The study was conducted in Benue State, located in the North Central geopolitical zone of Nigeria, with its capital at Makurdi. The State is bordered to the North by Nasarawa State, North-East by Taraba State, South-East

by Cameroon, South by Cross River and Ebonyi States, South-West by Enugu State, and West by Kogi State. It comprises three senatorial zones and twenty-three (23) Local Government Areas (LGAs). Subsistence farming is the predominant occupation — earning the state the sobriquet "Food Basket of the Nation" — alongside civil service and trading. Christianity is the predominant religion, and the majority of the population resides in rural areas.

Study Design

A quasi-experimental study design utilising mixed quantitative and qualitative evaluation methods was conducted over 12 months (July 2019 – June 2020). The intervention group was assigned via balloting to Senatorial Zone B (Benue North-West), while the control group was assigned to Senatorial Zone A (Benue North-East).

Study Population

The study population comprised permanent PHC health personnel and Women of Reproductive Age Group (WRAG, ages 15–49 years) attending antenatal care who had resided in the community for at least 3 years.

Sample Size Determination

The minimum sample size for the WRAG client survey was determined using the standard formula for comparing two independent proportions at 80% power and a 95% confidence interval:

$$n = [(Z\alpha + Z\beta)^2 \times 2 \times P(1 - P)] / d^2$$

where n is the minimum sample size; Zα is the value for a 95% confidence level (1.96); Zβ is the value for 80% power (0.84); P is the proportion of women aged 15–49 years in Benue State who delivered by a Skilled Birth Attendant (SBA) in 2018 (56.8%, or 0.568); and d is the expected difference between the intervention and control groups, set at 14.0% (0.14). Substituting these values yielded a minimum sample size of 196.28. Adjusting for an anticipated 10% non-response rate using $n_s = n / (1 - f)$, where f = 0.1, the adjusted sample size was 218.09, rounded to 218 respondents per arm. The final study sample therefore comprised 218 women of reproductive age in each of the intervention and control groups (N = 436 total).

Sampling Technique

A multi-stage sampling technique was used to select 16 Primary Health Centres (PHCs) across 8 Local Government Areas (LGAs).

Stage 1: Of the three senatorial zones in Benue State, two were selected by simple random sampling (balloting); Senatorial Zone A (Benue North-East) was allocated as the control zone and Senatorial Zone B (Benue North-West) as the intervention zone.

Stage 2: Four LGAs were selected from each zone by simple random sampling (balloting) — Vandeikya, Konshisha, Kwande, and Ushongo in Zone A; and Makurdi, Gwer East, Gboko, and Tarka in Zone B.

Stage 3: Two PHCs were selected per LGA by simple random sampling. The intervention group (Zone B) comprised 8 PHCs — PHC Wadata, PHC Asase, PHC Aliade, PHC Ikpayongo, PHC Gboko, PHC Akpagher I, PHC Township Wannune, and NKST PHC Annune. The control group (Zone A) comprised 8 PHCs — PHC Imoughun, PHC Vandeikya, PHC Tse-Agberagba, PHC Gungul, PHC Gube, Gabriel Suswam Cottage PHC Adikpo, PHC Kartyo, and PHC Waapera.

Stage 4: All PHC staff meeting the inclusion criteria at the intervention and control facilities were enrolled. Systematic random sampling was used to select client respondents at each PHC, with proportional allocation applied to determine the number of women sampled per facility.

The LDP Intervention

All 138 eligible health workers across the 8 intervention PHCs received a 5-day participatory LDP workshop based on adapted MSH modules.[13] The training curriculum covered pre-/post-tests of leadership knowledge, leadership shifts, workplace climate, attitudinal change, emotional intelligence[22], constructive feedback, the Challenge Model, and team action planning.

Data Collection and Measurement Tools

Quantitative client data were collected at baseline and at 6 months post-intervention using semi-structured, interviewer-administered questionnaires adapted from the Picker Patient Experience Questionnaire. Provider attitude was evaluated across 18 item indicators; each positive/appropriate attitude response was scored 2 points and each poor response 1 point, with overall scores percentage-transformed. Scores >50% were categorised as "Good Attitude" and ≤ 50% as "Poor Attitude." Instrument reliability was confirmed with a Cronbach's alpha coefficient of 0.704. Focus Group Discussions (FGDs) were conducted with WRAG, while Key Informant Interviews (KIIs) were conducted with Officers-in-Charge of the selected health facilities to explore prevailing maternal health problems in the communities, availability of human resources and materials, service delivery, and facility-level challenges.

Data Analysis

Data were analysed using IBM SPSS version 20. Inferential comparisons between baseline and post-intervention outcomes across the intervention and control groups were conducted using Pearson's Chi-square test (χ^2), Fisher's Exact Test (FET), and paired Student's t-tests, with statistical significance set at $p<0.05$.

Ethical Considerations

Ethical approval was obtained from the Benue State University Teaching Hospital Health Research Ethics Committee (HREC No: BSUTH/CMAC/HREC/2020/012). Institutional approval was obtained from the Benue State Primary Healthcare Board and the respective PHCs. Written informed consent was obtained from all participants before enrolment. The ethical principles of confidentiality, respect for persons, beneficence, and justice were maintained throughout the study.

RESULTS

Table 1 depicts the mean age of WRAG respondents (25 ± 5 years) in the intervention group and 23 ± 5 years in the

control group (p=0.101). Most respondents were married (95.0%; 207 intervention vs. 92.7%; 202; control) p=0.654 and engaged in farming/agricultural occupations (67.4%; 147 intervention vs. 64.7%; 141 control) p=0.133. No statistically significant baseline differences existed between the intervention and control arms with respect to socio-demographic characteristics.

Table 2 summarises the baseline characteristics of the 16 participating Primary Health Centres. No statistically significant differences existed between the intervention and control facilities with respect to ownership, bed capacity, or the availability of post-abortion care, HIV testing, health education, ferrous/folic acid supplementation, or Prevention of Mother-to-Child Transmission (PMTCT) services, confirming baseline comparability of the study and control facilities.

Table 3 showed *LDP* intervention knowledge gain among the 138 frontline PHC personnel who completed the 5-day LDP workshop across the eight intervention facilities, health workers achieved a statistically significant mean knowledge improvement, with pre-test scores rising from 35.72% (±16.97) to post-test scores of 76.38% (±16.67) — an average absolute gain of 40.6 percentage points ($t = -25.092$, $df = 137$, $p<0.001$) (Table 3).

The Effect of LDP on Health Worker Attitudes is depicted in Table 4. At six months post-intervention, client evaluations revealed a marked transformation in provider attitudinal performance within the intervention arm, with no corresponding improvement in the control arm. The positive attitudinal shift showed the proportion of WRAG reporting positive provider attitudes in the intervention PHCs rise from 77.5% (169) at baseline to 98.6% (215) post-intervention ($\chi^2=46.203$, df=1, p<0.001), while control facilities exhibited a non-significant decline [76.1% (166) to 74.3% (162); $\chi^2=0.197$, df=1, p=0.657]. Elimination of poor attitudes saw, the reported poor provider attitudes in the intervention group drop from 26.1% (57) to 2.3% (5) $\chi^2=50.843$, df=1, p<0.001, whereas the control PHCs showed no significant change [25.7% (56) to 27.1% (59); $\chi^2=0.106$, df=1, p=0.744]. For removal of attitudinal access barriers, negative provider attitudes that had actively deterred women from seeking ANC, fell from 18.8% (41) to 0.0% (0) in the intervention group ($\chi^2=45.256$, df=1, p<0.001), while the control group showed a non-significant increase [20.2% (44) to 24.3% (53); $\chi^2=1.074$, df=1, p=0.300). Similarly, negative attitudes deterring facility-based delivery were eliminated in the intervention group 19.3% (42) to 0.0% (0); $\chi^2=46.477$, df=1, p<0.001), with no significant change in the control group [21.1% (46) to 23.9% (52); $\chi^2=0.474$, df=1, p=0.491].

Table 1. Socio-demographic characteristics of respondents

Variables	Study group (N=218) N (%)	Control group (N=218) N (%)	Test statistic	df	P-value
Age group (years)					
15–24	104 (47.7)	126 (57.8)	. . . . .	2	0.101
25–34	105 (48.2)	86 (39.4)			
35–44	9 (4.1)	6 (2.8)			
Mean age ± SD	25 (±5)	23 (±5)			
Marital status					
Single	8 (3.7)	12 (5.5)	FET = 1.048	2	0.654
Married	207 (95.0)	202 (92.7)			
Separated	3 (1.4)	4 (1.8)			
Marriage type					
Monogamy	165 (75.7)	175 (80.3)	χ^2 = 4.532	2	0.104
Polygamy	46 (21.1)	31 (14.2)			
Cohabiting	7 (3.2)	12 (5.5)			
Level of education					
None	36 (16.5)	23 (10.6)	FET = 6.653	4	0.151
Quranic	3 (1.4)	2 (0.9)			
Completed primary	84 (38.5)	90 (41.3)			
Completed secondary	73 (33.5)	89 (40.8)			
Tertiary	22 (10.1)	14 (6.4)			
Ethnicity					
Tiv	207 (95.0)	210 (96.3)	FET = 1.215	3	0.813
Idoma	4 (1.8)	3 (1.4)			
Hausa	4 (1.8)	4 (1.8)			
Igbo	3 (1.4)	1 (0.5)			
Religion					
Christianity	213 (97.7)	216 (99.1)	Yates' χ^2 = 0.581	1	0.446
Islam	5 (2.3)	2 (0.9)			
Occupation					
Technicians/associate professionals	10 (4.6)	14 (6.4)	χ^2 = 5.582	3	0.133
Skilled agriculture/forestry/fishery	147 (67.4)	141 (64.7)			
Craft and related trades	47 (21.6)	37 (17.0)			
Unemployed	14 (6.4)	26 (11.9)			

χ^2 = Chi-square test; FET = Fisher's Exact Test.

Table 2. Characteristics of the Primary Health Centres

Variables	Study PHCs (N=8) Frequency (%)	Control PHCs (N=8) Frequency (%)	Test statistic	df	P-value
Ownership					
Government	7 (87.5)	8 (100.0)	Yates' = <0.001	1	1.000
Faith-based	1 (12.5)	0 (0.0)			
Number of beds					
. . .	3 (37.5)	5 (62.5)	Yates' = 0.250	1	0.617
< 10	5 (62.5)	3 (37.5)			
Provision of post-abortion care					
Yes	3 (37.5)	5 (62.5)	Yates' = 0.250	1	0.617
No	5 (62.5)	3 (37.5)			
HIV testing services					
Yes	7 (87.5)	8 (100.0)	Yates' = <0.001	1	1.000
No	1 (12.5)	0 (0.0)			
Health education, ferrous/folic acid supplementation, PMTCT	**8 (100.0)**	**8 (100.0)**	—	—	—

Table 3. LDP training pre-test and post-test scores

	Pre-test (N=138) Mean ± SD	Post-test (N=138) Mean ± SD	t-test	df	P-value
LDP training scores	35.72 ± 16.97	76.38 ± 16.67	-25.092	137	<0.001

Table 4. Attitude of health workers towards women attending Antenatal Care

Variables	Study Baseline (N=218)	Study Post-intervention (N=218)	Control Baseline (N=218)	Control Post-intervention (N=218)
Positive provider attitudes				
Yes	169 (77.5)	215 (98.6)	166 (76.1)	162 (74.3)
No	49 (22.5)	3 (1.4)	52 (23.9)	56 (25.7)
Statistic	*χ^2=46.203; df=1; p≤0.001*		*χ^2=0.197; df=1; p=0.657*	
Negative provider attitudes				
Yes	57 (26.1)	5 (2.3)	56 (25.7)	59 (27.1)
No	161 (73.9)	213 (97.7)	162 (74.3)	159 (72.9)
Statistic	*χ^2=50.843; df=1; p≤0.001*		*χ^2=0.106; df=1; p=0.744*	
Negative attitudes preventing ANC attendance				
Yes	41 (18.8)	0 (0.0)	44 (20.2)	53 (24.3)
No	177 (81.2)	218 (100.0)	174 (79.8)	165 (75.7)
Statistic	*χ^2=45.256; df=1; p≤0.001*		*χ^2=1.074; df=1; p=0.300*	
Negative attitudes preventing facility delivery				
Yes	42 (19.3)	0 (0.0)	46 (21.1)	52 (23.9)
No	176 (80.7)	218 (100.0)	172 (78.9)	166 (76.1)
Statistic	*χ^2=46.477; df=1; p<0.001*		*χ^2=0.474; df=1; p=0.491*	

Qualitative Triangulation

Key Informant Interviews (KIIs) conducted at baseline captured a mixed picture of staff–client interactions before the intervention, with some OICs reporting complaints of harsh or dismissive staff conduct that they attributed, in part, to the personalities of individual staff and the irritability of some clients:

> *"I have received complaints from patients — some of them say they'll never come here again. Some of them cite examples of how staff harassed them. But I calm them down and also caution the staff, letting them know that patients are to be treated well. I also tell them that if they continue that way, they'll run down our facility as people will run away. Everyone has their own character; when you know it, you adapt."*
>
> — 57SNM (Intervention PHC, baseline)
>
> *"Yes, patients always say a lot about us — sometimes it's true, and sometimes it's not. Some complain about being shouted at, but after investigating, I find that some were not so. I counsel my staff that some patients can be irritable, so I ask them to be calm so they don't misrepresent the facility."*
>
> — 50CHO (Intervention PHC, baseline)

Following the LDP training, KIIs at the intervention PHCs confirmed the quantitative attitudinal improvements:

> *"This LDP gave us a better understanding … the attitude of my staff to clients and to each other is much better. Commitment and punctuality have improved."*
>
> — 43SNM (Intervention PHC, baseline)
>
> *"I applaud my staff because I've seen their diligence. Everybody loves their work and does it passionately. People even commend them for their hardworking attitude — everyone is dedicated to theirs. So there's no bad comment."*
>
> — 53CHO (Intervention PHC, baseline)
>
> *"Some of them praise the attitude of the staff. They say they're made to feel at home when they come here. The few staff that are here speak to them gently, unlike those at other clinics who get angry at patients for asking questions."*
>
> — 45CHO (Intervention PHC, baseline)

Focus Group Discussion (FGD) participants at the intervention PHCs post-intervention similarly identified improvements in staff receptiveness, commitment, and hygienic practice:

> *"I have seen improvements in the way the health workers interact with clients."*
>
> — 29M, FGD participant
>
> *"I have seen a lot of improvements because hand-washing basins have increased, as people get to wash whatever harmful thing they have on their hands."*
>
> — 27M, FGD participant

DISCUSSION

This quasi-experimental evaluation demonstrates that a short, low-cost, participatory leadership intervention can produce large, statistically significant improvements in client-reported provider attitudes within rural Nigerian primary healthcare facilities. The empirical findings confirm that leadership and management capacity-building at the primary healthcare level directly improves workplace culture and provider attitudinal performance, corroborating the theoretical premise of the MSH Leading and Managing for Results Framework that leadership and management practices are learnable, applicable skills rather than fixed personal traits.[13]

Baseline evaluation in this study revealed that over one-fifth of rural pregnant women experienced negative provider behaviours before the intervention, consistent with the substantial prevalence of disrespect and abuse during facility-based childbirth documented across sub-Saharan Africa in recent systematic reviews and meta-analyses.[5,6] The provider-perspective accounts captured through KIIs in this study — which attributed harsh interactions partly to individual staff "character" and client irritability rather than to systemic causes — mirror findings from qualitative syntheses of health professionals' own perceptions of disrespectful intrapartum care in low- and middle-income countries, which similarly find that providers often externalise the causes of mistreatment while underappreciating the role of workload, supervision, and organisational climate.[7] This is consistent with Nigerian provider-perspective research from Ebonyi State, where providers identified structural stressors — rather than individual client behaviour alone — as key drivers of strained provider–client interactions[8].

Following the 5-day participatory LDP training, frontline health teams demonstrated an average knowledge gain of 40.6 percentage points, which translated into a near-complete elimination of poor provider attitude ratings and a full elimination of attitudinal barriers to ANC attendance and facility-based delivery in the intervention arm. This attitudinal shift validates the MSH Leading and Managing for Results Framework, demonstrating that when health personnel are equipped with participatory tools such as the Challenge Model, emotional intelligence training, and structured feedback mechanisms, they can overcome workplace-climate barriers without requiring immediate structural or financial investment.[13] The magnitude of improvement in caring, client-centred behaviour observed here is consistent with evidence that emotional-intelligence-oriented training enhances empathetic and patient-centred caring behaviour among health professionals more broadly.[22]

These findings align with earlier LDP scale-up evaluations in Egypt and Zambia, where building frontline team leadership capacity improved provider morale, teamwork, and selected service-delivery indicators[14,15], and with more recent scoping and mapping reviews of leadership interventions in sub-Saharan Africa, which identify frontline leadership training as among the more consistently effective, exportable strategies for strengthening workplace climate, although the certainty of evidence across the region remains variable and few studies have used a controlled, client-reported outcome design of the kind employed here.[16,17,18,19] Similarly, reviews of health leadership and workforce management globally have highlighted participatory, team-based leadership

development as a persistent, underprioritized lever for improving frontline performance, a gap that the present quasi-experimental design directly addresses with client-level outcome data.[18]

The elimination of attitudinal barriers to ANC and facility-delivery uptake observed in this study has direct relevance for reducing preventable maternal mortality, given that sub-Saharan Africa continues to account for the majority of global maternal deaths and that progress in reducing the maternal mortality ratio has slowed in recent years.[2] These results also resonate with health system quality that clearly incorporates the experiential and person-centred dimension of care alongside its technical adequacy.[23] Recent quality-improvement and behavioural-design interventions targeting respectful maternity care in Kenya, Zambia, and Ethiopia have similarly demonstrated that provider-facing interventions — whether framed around leadership, behavioural design, or structured coaching — can meaningfully reduce disrespect and abuse during childbirth[25,26,27], reinforcing the conclusion that attitudinal and behavioural barriers to maternal healthcare are amenable to relatively low-cost, provider-focused intervention. However, a broader landscaping review of respectful-maternity-care interventions across Africa cautions that such interventions are rarely evaluated with the rigour of a controlled, pre–post client-outcome design, and calls for more studies of this kind to strengthen the regional evidence base[28], a gap to which the present quasi-experimental, mixed-methods evaluation directly contributes.

That improvements in provider attitudes were observed alongside gains in client satisfaction indicators consistent with recent Nigerian client-satisfaction research from Lagos and Kaduna States[11,12], further supports the internal validity of the client-reported outcome measures used in this study. Nonetheless, the sustainability of attitudinal gains achieved through leadership training alone remains uncertain in the absence of complementary investment in facility management capacity, which remains persistently weak across primary healthcare facilities in low- and middle-income countries and could undermine the routine supervision and feedback mechanisms needed to consolidate behaviour change over the longer term.[29] Importantly, this trial demonstrates that a non-monetary, behavioural-change-oriented intervention can remove a major supply-side barrier to essential maternal health utilisation in rural Primary Health Centres, without requiring the extended timelines typically associated with pre-service curriculum reform or infrastructural upgrading.

LIMITATIONS

The quasi-experimental, non-randomised allocation of intervention and control zones by senatorial balloting, while pragmatic, cannot fully exclude residual confounding from unmeasured contextual differences between zones, although observed baseline comparability across socio-demographic and facility-level characteristics mitigates this concern. The 6-month post-intervention follow-up period, while sufficient to demonstrate a substantial short-term effect, does not establish the durability of attitudinal change beyond this window. Client-reported attitude measures, although derived from a validated and reliable instrument, remain subject to social desirability and recall bias. Future controlled trials with longer follow-up, and process evaluations examining the mediating role of supervisory and managerial support, would strengthen the evidence base for scaling LDP-type interventions across similar rural, low-resource primary healthcare settings.

CONCLUSION

The Leadership Development Program (LDP) is an effective, evidence-based health systems strengthening intervention that significantly improves health worker attitudes and eliminates attitudinal barriers to antenatal care and facility-based delivery services in rural Primary Health Centres. As a low-cost, non-infrastructural intervention, LDP training offers a scalable pathway for improving the interpersonal quality of maternal healthcare in resource-constrained, rural sub-Saharan African settings.

RECOMMENDATIONS

The Benue State Primary Health Care Board (BSPHCB) and the State Ministry of Health should integrate mandatory annual LDP workshops into standard continuing professional development for all primary healthcare personnel. Development partners and non-governmental organisations should collaborate with state healthcare authorities to extend LDP training across all 23 LGAs in Benue State. To ensure long-term sustainability, state authorities need to complement behavioural training by upgrading rural PHC infrastructure to meet Ward Health System standards, maintaining functional Drug Revolving Funds, and ensuring regular salary disbursement to alleviate systemic workforce burnout.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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