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CHALLENGES AND STRATEGIES FOR ENHANCING WARD DEVELOPMENT COMMITTEE PARTICIPATION IN GRASSROOTS PRIMARY HEALTH CARE SERVICES

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Abstract

Primary Health Care (PHC) in Nigeria relies on Ward Development Committees (WDCs) to foster community participation, accountability, and effective service delivery at the grassroots level. Despite their strategic importance, evidence suggests suboptimal performance due to persistent systemic, institutional, and operational challenges. This study examined the challenges hindering effective participation of WDCs in PHC services and identified strategies for improving their participation at the grassroots level in Kaduna State, Nigeria. A descriptive

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cross-sectional mixed-methods design was employed. Using Cochran's formula, 152 WDCs were selected from 255 wards across three senatorial zones via multistage sampling. A structured KAP questionnaire was administered to one WDC member per ward, complemented by in-depth interviews with PHC service beneficiaries. Quantitative data were analysed using descriptive statistics and one-sample t-tests ($p<0.05$). Qualitative data were thematically analysed. The grand mean for challenges was 3.35 (SD=1.195), with poor communication with higher health authorities (M=3.99), low meeting attendance (M=3.84), and inadequate community trust (M=3.64) identified as the most critical barriers. The grand mean for strategies was 3.62 (SD=0.465), with regular capacity building (M=4.04), stronger staff collaboration (M=4.01), increasing women's membership (M=3.84), and adopting digital tools (M=3.83) as the most endorsed interventions. Direct financial incentives were not prioritized (M=2.71). A multi-level strategy integrating standardized training, structural inclusion in PHC planning, gender-equity enforcement, and digital communication is essential to transform WDCs into genuine co-managers of primary health care facilities, thereby advancing universal health coverage.

Introduction

Primary Health Care (PHC) remains the foundation of effective health systems globally, particularly critical in low- and middle-income countries such as Nigeria, where it serves as the first point of contact between individuals and the healthcare system. The Alma-Ata Declaration of 1978 and its reaffirmation in the Astana Declaration of 2018 positioned PHC as a holistic strategy for achieving equitable health outcomes and Universal Health Coverage (UHC). Recognizing the importance of grassroots involvement in health services, the Nigerian Government adopted the Ward Health System (WHS) in 2001 to decentralize primary healthcare and promote community participation in health service delivery (Banigo, 2001).

Central to this strategy are the Ward Development Committees (WDCs), established to serve as intermediaries between healthcare providers at Ward PHC facilities and the local community population. WDCs are expected to serve as a bridge between the community and PHC facilities, with responsibilities including identifying health needs, mobilizing community resources, creating health awareness, monitoring service delivery, and supporting PHC staff in the implementation of programs (NPHCDA, 2012). Recent evidence demonstrates that when communities are actively involved in planning, implementing, and monitoring health services, there is increased utilization of services, improved health outcomes, and greater trust in the healthcare system.

Despite their critical role, the effectiveness of WDCs remains sub-optimal in many parts of the country. Several studies have highlighted significant gaps in the knowledge, motivation, and functional capacity of WDC members. Evidence suggests that political interference, lack of institutional support, poor understanding of their roles, and inadequate funding have been cited as major impediments to their effective participation in PHC services. In Kaduna State, preliminary PHC assessments revealed that WDCs often lack the knowledge and skills required to perform their roles effectively, with attitudinal challenges such as lack of motivation and poor attendance further undermining their performance.

This study, therefore, examines the challenges hindering effective participation of WDCs in PHC services and identifies strategies for improving their participation at the grassroots level in Kaduna State, Nigeria.

Statement of the Problem

PHC is essential for universal health coverage and community well-being in developing nations like Nigeria. The 2018 Astana Declaration and 1978 Alma-Ata Declaration supported PHC as a holistic UHC approach and equal health outcomes. In 2001, Nigeria created the Ward Health System (WHS) to decentralise healthcare and promote community engagement (Banigo, 2001; NPHCDA, 2012).

Ward Development Committees link primary care to community health. WDCs must promote health, track ward-level PHC service implementation, and empower communities to administer them (Ojwang & Bwisa, 2014; NPHCDA, 2012). To improve community ownership and engagement in primary healthcare, Kaduna State provided patient mobilisation, health education, food supply, nutrition, safe water, sanitation, maternal and child health, family planning, immunisation, disease prevention and control, common disease treatment, essential drugs, and oral WDCs. However, many members lack knowledge, skills, and desire. Agofure (2017) claims some Kaduna State WDC members don't know they must mobilise resources and think the government fixes PHCs. Lacking information, commitment, and supervision, rural Kaduna State committees struggle to mobilise community resources, engage stakeholders, and improve health.

Politics—particularly Ward Development Committees—impede primary health care (Azuh, 2017). WDC funded ward-level PHC institutional finance, resource mobilisation, HRD, and infrastructure. PHCs treat patients and maintain WDCs (Omuta & Aitokhuehi, 2018). Mohammed and Odetola (2019) say WDCs lack knowledge and skills and are undermotivated and absent.

Health systems research evaluates community participation and WDC performance using the Knowledge, Attitude, and Practice (KAP) framework (Launiala, 2009; WHO, 2008). Research shows that WDC members' knowledge gaps significantly affect performance.

Nmadu et al. (2021) found that PHC stakeholders, including community actors, lacked referral system and service coordination knowledge in Kaduna State. Poor decisions were made when integrating community health centers. Ogunyemi et al. (2024) found that primary healthcare stakeholders' role and responsibility ignorance hindered WDC-health authority coordination.

WDC effectiveness depends on attitudes. Trust, ownership, and dedication improve health systems (Enebeli, 2024). Negative marginalisation attitudes, lack of incentives, and recognition hinder involvement. Multiple Nigerian studies show that WDC members lack motivation due to a lack of financial or non-financial incentives, sporadic local government support, and limited decision-making power.

Mixed WDC behaviour. Community mobilisation, facility monitoring, and advocacy are rare in WDCs. The ward health system, which includes WDCs, is essential to PHC implementation but rarely implemented, according to Ajisegiri et al. (2022). WDC is limited by finance, logistics, and institutions, say Ogunyemi et al. (2025). Poor record-keeping, few meetings, and limited PHC planning and monitoring result.

Capacity building is crucial even though local health officials rarely train or supervise WDC. Many committee members lack formal orientation or refresher training, affecting confidence and efficiency (Onwujekwe et al., 2019; FMOH, 2020). According to Idris et al. (2023), 30% of northern Nigerian WDC members received formal training since joining. Complex WDC tasks like financial control, PHC service monitoring, and community health intervention make this lack of training difficult.

Culture impacts WDC. Family planning, facility delivery, and prenatal care are advised. Cultural traditions, gender norms, and reproductive health illiteracy lead committee members to oppose male-dominated maternal health care (Baba et al., 2018; UNICEF, 2022). Initial Kaduna State PHC assessment showed WDCs lack employment skills. Money and motivation affect performance. Poor record keeping, sporadic meetings, and little health planning limit WDCs' community health impact.

Other studies show low WDC PHC participation (Gulma, 2025). Alarmingly, Kaduna State leads Nigeria's PHC overhaul. Several obstacles limit WDC involvement. Many WDCs receive occasional government, donor, and community funding (Masis et al., 2021; Kabiru, 2025). WDC members lack technical skills in health governance, planning, monitoring, and evaluation (Minsi, 2023; Ndaba et al., 2020).

WDC has unclear roles and poor health governance integration (Kesale et al., 2022; van Praag, 2023). Politicising committee membership and decision-making reduces WDC transparency, accountability, and community trust (Murphy et al., 2021; Kabiru, 2025). Weak community engagement and representation, especially of women, adolescents, and vulnerable people, hinders health needs capture and address (Karuga et al., 2022).

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Communication between WDC and higher health authorities is another issue. African community committees and higher health institutions are poorly integrated, say Karamagi et al. (2026). WDCs lose interest without report feedback, policy updates, or LGHA links. WDC uses community trust as social capital despite severe trust deficits (Mbaegbu et al., 2025; Elemuwa, 2024).

Low WDC involvement matters. WDCs promote health, monitor ward-level PHC services, and empower communities to run them (Ojwang & Bwisa, 2014). Ineffective WDCs harm community ownership of PHC facilities, health provider accountability, community voice in health planning and priority setting, community mobilisation for health interventions, and health outcomes, especially for vulnerable populations.

Ward Health System has care barriers. Etiaba et al. (2025) and Ozor et al. (2024) found structural and systemic PHC governance community engagement barriers. According to Ajisegiri et al. (2022), health committees, including WDCs, need support, training, and integration into formal health systems. WDCs, not co-managers, would participate in PHC campaigns without concern.

Research Objectives

General Objective: To assess challenges and strategies for enhancing ward development committee participation in grassroots primary health care services

Specific Objectives:

1. To determine the challenges hindering effective participation of WDCs in PHC services.
2. To ascertain strategies for improving WDCs' participation in PHC services at the grassroots level

Research Questions

1. What are the major challenges affecting WDCs' participation in PHC services?
2. What strategies can enhance the participation of WDCs in PHC services at the grassroots level?

Research Hypotheses

$H0_1$: The challenges hindering effective participation of WDCs in PHC services will not be significantly high

$H0_2$: The strategies for improving WDCs' participation in PHC services at the grassroots level will not be significantly high

Primary Health Care (PHC)

In low- and middle-income countries like Nigeria, primary health care (PHC) is the initial point of contact between individuals and the healthcare system and is essential. Modern data supports PHC as a holistic, people-centered approach that incorporates preventative, promotive, curative, rehabilitative, and palliative treatments (WHO, 2024). This modern perspective builds on the 1978 Alma-Ata Declaration and the 2018 Astana Declaration, portraying PHC as a holistic strategy for equitable health outcomes and Universal Health Coverage. Recent studies show that PHC systems are critical for tackling infectious and non-communicable diseases, increasing mother and child health, and strengthening health system resilience, especially in resource-constrained settings (Tinimoye et al., 2025; Ogunyemi,).

PHC, the lowest tier of a three-tier healthcare system in Nigeria, is managed decentralizedly by federal, state, and local governments. The NPHCDA coordinates national policies including the Basic Health Care Provision Fund (BHCPF) and the Primary Health Care Under One Roof (PHCUOR) initiative. Since 2019, the BHCPF has increased PHC facility funding, but governance and accountability issues have caused implementation to vary between states (Igbokwe et al., 2024). The PHCUOR reform has improved coordination and policy alignment by unifying fragmented PHC governance structures, but political interference and weak local government autonomy have limited its effectiveness (Alawode & Ajibola, 2026; Croke & Ogbuoji, 2024).

Equity in access to critical health care is a core principle of PHC, but Nigerian data shows ongoing discrepancies, notably between urban and rural areas. Studies show that rural populations have restricted access to healthcare due to insufficient infrastructure, skilled health workers, and resource allocation (Tinimoye et al., 2025). Socioeconomic and geographic barriers limit PHC use and UHC progress, exacerbating these disparities. Researchers also found that vulnerable populations like older adults and rural women face financial, cultural, and awareness barriers to quality PHC services (Ogunyemi et al., 2025; Ajisegiri, 2022).

Recent literature has focused on community participation, another PHC pillar. Multiple studies show that community engagement improves PHC efficacy, accountability, and sustainability. Ward Development Committees (WDCs), community health volunteers, and local health governance frameworks institutionalise community engagement in Nigeria. Communities that plan, implement, and monitor health services have higher utilisation, better health outcomes, and greater trust in the healthcare system (Kabiru, 2025; Mbaegbu et al., 2025). A quasi-experimental study by Okonofua et al. (2022) found that community-based interventions increased maternal and child health service utilisation in rural Nigeria, emphasising the importance of participatory PHC delivery.

Community engagement is inconsistently implemented in Nigeria despite its benefits. Studies highlight community structure capability, training, incentives, and integration with formal health systems as issues. Olofinbiyi (2025) found that community participation is generally symbolic rather than substantive, with little impact on decision-making. This policy-practice gap highlights the need to enhance community governance systems and local actors, particularly WDCs, to effectively implement PHC.

PHC also emphasises intersectoral collaboration because socioeconomic variables including education, housing, sanitation, and economic situations affect health outcomes. Recent studies show that while Nigerian legislation recognise intersectoral action, institutional silos and sectoral cooperation hinder implementation (Adedeji, 2025). This lack of integration affects complex health issues including malnutrition, environmental health concerns, and new diseases, which require coordinated solutions outside the health sector.

PHC services in Nigeria include maternity and child health, immunisation, common sickness treatment, health education, family planning, and environmental health. These services' quality and availability are generally poor, according to evidence. Ogah et al. (2024) revealed service deficiencies in PHC facilities, including inadequate infrastructure, medical supplies, and quality standards. According to Ajisegiri et al. (2022), PHC services for non-communicable diseases are often unprepared to handle the growing load of chronic ailments.

PHC in Nigeria also has human resource shortages. The paucity and uneven distribution of healthcare staff, especially in rural areas, limits PHC institutions' ability to provide quality services. Task-shifting and task-sharing initiatives, which delegate some responsibilities to lower-level health workers, have been used to fill these gaps, but they need training, supervision, and support (Yisa et al., 2025). Poor pay, career advancement, and working conditions also affect health worker motivation and retention.

Nigerian PHC systems struggle due to funding shortages. PHC funding has increased due to the BHCPF, however it is still insufficient to address population healthcare needs. Out-of-pocket costs continue to prevent low-income households from accessing healthcare, reducing PHC's ability to promote equity (Arochukwu et al., 2025). Additionally, resource allocation and financial management inefficiencies reduce money utilisation.

Recent PHC delivery innovations use technology, community-based approaches, and performance-based financing to improve service delivery and health outcomes. For instance, mobile health apps and electronic health records improve data management, service delivery, and patient involvement. Community-driven PHC approaches like those in Ondo State can improve health outcomes through community ownership and engagement (Osunmakinwa et al., 2025). These developments emphasise the need to tailor PHC techniques to local needs and use available resources to solve health issues.

Ward Development Committees (WDCs)

Nigeria's primary health care (PHC) system relies on Ward Development Committees (WDCs), grassroots institutional frameworks that encourage community engagement, accountability, and better service delivery. The Ward Health System (WHS) and Basic Health Care Provision Fund (BHCPF) demonstrate WDCs as vital governance institutions that link communities to formal health systems. WDCs are community-based platforms of key stakeholders who plan, administer, monitor, and evaluate ward-level PHC services, according to the literature. Their existence operationalises Alma-Ata Declaration global health concepts that community-driven, participatory, and inclusive health systems are necessary (Igbokwe et al., 2024; Kabiru, 2025).

WDCs were created in Nigeria as part of PHC reforms to decentralise health governance and provide local populations a say in health decisions. WDCs were institutionalised by the NPHCDA to connect PHC facilities, local health authorities, and community members. WDCs are projected to support accountability, transparency, and community ownership of health interventions under the BHCPF (Igbokwe et al., 2024), according to recent studies. In this changing policy climate, WDCs are active health system governance actors with monitoring, lobbying, and resource mobilisation duties.

WDCs are purposely inclusive to reflect the socio-cultural variety of their communities. Traditional rulers, religious leaders, women, youth, community-based organisations, health professionals, and local government officials usually join. This composition promotes trust and participation through representativeness and legitimacy. Sulaiman et al. (2024) found that WDCs mobilise communities and influence health behaviours better when they have balanced representation and regular participation. These committees vary between regions, with some being well-organised and effective and others inert or poorly coordinated (Kabiru, 2025).

WDCs have many important roles in PHC systems. Community mobilisation for immunisation campaigns, maternal and child health programs, and disease prevention is one of their main duties. Studies show that WDC involvement boosts health service uptake, especially in underprivileged communities (Kaduru et al., 2025; Bolarinwa, 2025). In addition to mobilisation, WDCs participate in planning and decision-making to ensure health programs meet community needs. This participatory approach makes health programs more relevant and sustainable.

Monitoring and oversight are also important for WDCs. WDCs increase health system accountability and transparency by monitoring PHC facility operations, including staff performance, medicine availability, and care quality (Ogah et al., 2024). They mobilise community and external resources to fill infrastructural and service shortfalls. WDCs also advocate for community interests with government and other stakeholders, improving health system responsiveness.

WDCs' community participation promotion is inconsistent despite their promise. Some research show that active WDC engagement improves outcomes, whereas others note that they face obstacles. Etiaba et al. (2025) and Ozor et al. (2024) found that community participation in PHC governance, while necessary, is typically suboptimal due to structural and systemic constraints. To function effectively, health committees, including WDCs, need support, training, and integration into formal health systems, according to Ajisegiri et al. (2022).

Capacity constraints are a common WDC performance obstacle. Many committee members lack the technical skills and knowledge of their roles and obligations to plan, monitor, and evaluate. Training and capacity-building improve WDC functionality, although not all regions apply them (Sampson et al., 2024). WDCs also struggle with funding and logistics, especially in rural and resource-poor areas.

Governance issues also affect WDC efficacy. Political meddling, weak oversight, and unclear accountability systems can damage these panels' autonomy and credibility. Studies show that local power dynamics affect WDC operations, resulting in unequal participation and limited efficacy (Alhassan & Ade-Banjo, 2025). WDC integration into official health system organisations is patchy, with some committees acting independently from PHC management.

Sociocultural aspects affect WDC performance. Despite their importance in health, gender norms might hinder women's decision-making. WDC engagement is also affected by community attitudes and health system trust. Mbaegbu et al. (2025) found that community ownership and trust improve WDC efficacy and health outcomes.

WDC performance in Nigeria, especially in northern states like Kaduna, is variable. Some committees are engaged and contribute to health service delivery, while others struggle with capacity, motivation, and resources. Studies in northwestern Nigeria show that WDCs are widespread, but their activity and effectiveness vary, emphasising the necessity for context-specific studies (Kabiru, 2025). This variety justifies evaluating WDC members' knowledge, attitude, and practice (KAP), which may affect their involvement and effectiveness.

Recent literature emphasises WDCs' importance in health system changes and efforts. The Lancet Nigeria Commission emphasises community structures, including WDCs, for universal health coverage and health system resilience (Abubakar et al., 2025). Studies on social and behaviour change interventions show that WDC capacity improves community engagement and accountability, improving health outcomes (Adetunji et al., 2025). These data support the idea that WDCs are essential to PHC systems.

Community Participation in Health

Community participation in health is essential to effective primary health care (PHC) systems, especially in low- and middle-income countries like Nigeria, where community structures extend service delivery and ensure sustainability. Community engagement has

been a viable and measurable tool for improving health outcomes, governance, and equity since the Alma-Ata Declaration and its reaffirmation in Astana. Community involvement in health service decision-making, planning, execution, and assessment, rather than passive reception of care, is regularly stressed in literature. This transition mirrors a larger trend toward co-production of health, when communities and health institutions work together to achieve goals (Ajisegiri et al., 2022; Karuga, 2022).

Community participation can range from information exchange to full empowerment to make health decisions. Theories like Arnstein's Ladder of Participation highlight these levels, but empirical evidence suggests that many PHC systems, including Nigeria, remain at the consultation or tokenism level, giving communities limited decision-making power. Collaboration and delegation have been linked to better service use and health outcomes (Karuga et al., 2022). Effective community platforms like Ward Development Committees (WDCs) demonstrate this.

The Ward Health System institutionalises community engagement in Nigeria's PHC system, making WDCs the key interface between communities and health authorities. These committees mobilise community members, promote health, oversee service delivery, and facilitate provider-population contact. Recent studies show that WDCs improve community ownership of health programs and access to services, especially in rural and underserved areas (Kabiru, 2025; Mbaegbu et al., 2025). Strengthened WDCs can enhance maternal, neonatal, and child health service use by building trust, raising knowledge, and removing local barriers to care (Kaduru et al., 2025).

Multiple research show that community participation improves health. Participatory techniques promote immunisation coverage, mother and child health, and communicable and non-communicable illness management. Community engagement in Nigeria has helped localise health initiatives, boosting their efficacy and acceptability. By engaging community leaders and structures in advocacy and mobilisation, the Ward Health System has increased vaccine uptake (Elemuwa et al., 2024). Participatory governance empowers communities to assess performance and demand better services, improving health system accountability and responsiveness (Ogah et al., 2024).

Beyond service delivery, community participation is crucial to health system governance. Community participation in decision-making improves transparency, accountability, and confidence, which health systems need. Community engagement aligns health care with local needs and priorities in decentralised systems like Nigeria's, where local governments execute PHC. This governance role works best when communities are empowered and supported by institutions (Alhassan & Ade-Banjo, 2025). Studies suggest that weak institutional competence, inadequate budget, and little political commitment hinder community involvement strategies (Paul, 2025).

Community participation efficacy depends on community members' knowledge and capacity, socio-cultural dynamics, institutional support, and resource availability. Community representatives must be well-informed and trained to engage in health governance and decision-making. Community members may contribute superficially or ineffectively without proper knowledge about health systems and their roles. Gender norms and community structures can promote or exclude particular groups, influencing participation. Community engagement and concrete results require institutional support, including clear policies, strong leadership, and good coordination (Igbokwe et al., 2024).
Trust and social capital also strongly impact community engagement. Trust between communities and health providers improves engagement, communication, and service use. Mistrust reduces participation and health intervention efficacy. Resource availability is important since community engagement requires financial and logistical assistance for meetings, training, and outreach programs. In Nigeria and other low- and middle-income countries, limited resources make community engagement difficult (Adesuyi et al., 2025).
Community health engagement is important yet hindered by many factors. The lack of decision-making capacity of community leaders makes participation typically symbolic rather than meaningful. Community members may lack the skills and knowledge to engage effectively due to inadequate training and capacity building. Committees may struggle to function without enough financing and logistical support. Additionally, political meddling and elite capture can skew participation procedures, compromising their legitimacy and efficacy. These issues are more acute under inadequate governance and accountability systems (Mbaegbu et al., 2025; Alawode & Ajibola, 2026).
Several ways to increase community participation in health systems address these issues. These include improving community representative capacity and training, strengthening institutional frameworks like WDCs, and encouraging inclusive participation that includes marginalised groups. To encourage active participation and health ownership, community knowledge and health literacy must increase. Maintaining successful community engagement systems requires continuous financing and policy support. Integrating community participation with health system strengthening appears to improve PHC outcomes the greatest (Ogunyemi et al., 2025).

Knowledge, Attitude, and Practice (KAP) Framework

The Knowledge, Attitude, and Practice (KAP) paradigm is widely used in public health research to examine how people learn, form opinions, and act. It assumes knowledge is the cognitive foundation that shapes attitudes, which impact practices and behaviour. Many studies have assumed that knowledge leads to attitude and then to practice, but recent research shows that socio-cultural, institutional, and structural factors complicate the relationship (Wang et al., 2023; Kamkhuru & Kanjanarach, 2026). Despite its

complexity, the framework is important in public health because of its simplicity, scalability, and ability to examine behavioural determinants in clinical and community settings.

The KAP framework defines knowledge as people's awareness, understanding, and information about a subject. Awareness of disease prevention, healthcare delivery, and institutional duties applies to health systems. Modern scholarship emphasises that knowledge comprises comprehension and decision-making (Puzhankara et al., 2024; Choudhury, 2026). Knowledge alone does not ensure behaviour change, as cultural views, resource constraints, and insufficient institutional support may prevent people from acting (Wang et al., 2023).

KAP's affective dimension, attitude, includes beliefs, perceptions, values, and emotional responses to a subject. Personal experiences, societal norms, and institutional trust shape it. Recent research show that attitudes influence motivation and readiness to act, mediating knowledge and practice (Lu et al., 2022). Positive attitudes toward health interventions or governance structures are more likely to lead to engagement and participation, while negative attitudes, often driven by distrust or perceived system inefficiency, can hinder behavioural adoption (Chen et al., 2026). Perceived benefits, leadership responsiveness, and prior government program experiences greatly impact community health governance engagement, especially in low-resource settings.

Practice is the framework's behavioural component and represents people's knowledge and attitudes-based behaviours. It is the most evident and measurable KAP continuum outcome. Public health research practice comprises following guidelines, participating in health initiatives, and promoting health. Improta et al. (2026) emphasise that enabling contexts, access to resources, and institutional support systems shape practice as well as knowledge and attitude. This explains why people with good knowledge and attitudes may not follow best practices when structural constraints exist.

The Health Belief Model, Theory of Planned Behaviour, and Social Cognitive Theory, which emphasise cognition, perception, and behaviour, underpin the KAP framework. The framework has been integrated with other predictive models to improve explanatory power in recent literature. Liao et al. (2026) used KAP, the Health Belief Model, and the 5C psychological model to analyse vaccination behaviour, whereas Chen et al. (2026) used technology acceptance frameworks to explain digital health decision-making. These integrations show how the KAP model has evolved into a hybrid analytical tool rather than a theory.

Evidence from 2019 to 2025 demonstrates the KAP framework is used in infectious disease control, maternity and child health, non-communicable illnesses, and health system governance. Sari et al. (2022) and Zhang et al. (2025) show that targeted interventions to improve knowledge and attitudes can improve health practices, especially when

supported by enabling technologies or community-based programs. However, other studies question the linear relationship. Wang et al. (2023) observed that knowledge did not necessarily enhance practices, while Kamkhuru and Kanjanarach (2026) stressed the importance of institutional capacity and socio-economic factors.

Structured surveys measure KAP using objective questions, Likert-scale attitudes, and self-reported practices. Validated digital questionnaires, mixed-method techniques, and statistical modelling improve reliability and validity (Hartmann et al., 2023; Puzhankara, 2024). These changes do not eliminate self-reporting bias, oversimplification of behavioural processes, and uneven operational definitions between studies.

Its simplicity, versatility, and applicability across groups and circumstances make the concept popular. It helps uncover awareness, perception, and behaviour gaps to support policy and intervention design (Nisar et al., 2025). However, recent scholarship has acknowledged its limits. It oversimplifies human behaviour, assumes rational decision-making, and ignores contextual and structural factors (Improta et al., 2026). Thus, experts recommend integrating KAP with socio-ecological and systems-based approaches.

Theoretical Framework

This study uses a multi-theoretical framework to explain how Ward Development Committee (WDC) members' knowledge, attitude, and practice affect their PHC participation in Kaduna State, Nigeria. Alma-Ata Declaration, Social Ecological Model (SEM), Participatory Governance Theory, and Knowledge-Attitude-Practice (KAP) model are used to explain community participation dynamics in the PHC system. These ideas describe how human traits, social relationships, institutional arrangements, and policy contexts affect WDCs' PHC delivery effectiveness.

The Alma-Ata Declaration (1978), Astana Declaration, and recent global PHC reforms (WHO, 2024) underpin this study. It stresses health as a human right and community participation as essential to basic health care. WDCs serve as community ownership structures in PHC delivery in Nigeria, making this principle relevant. Recent empirical investigations agree. Kaduru et al. (2025) observed that enhanced WDCs boosted maternal and child health service utilisation in Nigeria, whereas Elemuwa et al. (2024) found that ward-level engagement increased vaccination acceptability. Kabiru (2025) noted that WDCs' community participation is crucial to Northwestern Nigeria's PHC services' sustainability. Despite this alignment with global health principles, Ogah et al. (2024) show that weak governance structures, inadequate funding, and limited community empowerment mean that the Alma-Ata vision is only partially realised in Kaduna State and other parts of Nigeria.

The Social Ecological Model (SEM) is used to explain WDC participation's complex factors. This model explains behaviour as a result of individual, interpersonal, community,

organisational, and policy interactions. Knowledge shapes WDC members' awareness of their PHC system responsibilities individually. Nmadu et al. (2021) found that PHC stakeholders' limited knowledge in Kaduna State hinders health system functioning, particularly referral and community engagement. Attitude matters because motivation, trust, and peer influence determine WDC members' PHC participation. Joshua et al. (2023) show that health actors' perceptions and attitudes strongly influence health governance engagement.

Cultural norms, leadership structures, and community trust determine WDC legitimacy and efficacy. Sulaiman et al. (2024) demonstrated that community perception greatly affects WDC performance in Northwestern Nigeria, with poor trust reducing participation. Organisationally, WDC efficacy depends on PHC facility functionality, LGA PHC board monitoring, and training opportunities. Wright et al. (2024) note that governance and institutional support strongly influence community engagement. National and state PHC policies, especially those of the NPHCDA and Kaduna State PHC Development Board, shape WDCs. Kabiru (2025) notes that inconsistent policy implementation and inadequate funding hinder community participation in Nigeria's PHC system.

Participatory Governance Theory shows how citizen participation in decision-making improves service delivery. WDCs are decentralised governance structures that let communities plan, monitor, and evaluate PHC services. Empirical research reveal engagement is often minor or symbolic. Ogah et al. (2024) claim that governance inadequacies and insufficient accountability procedures weaken Nigeria's PHC system's participation frameworks. Wright et al. (2024) observed that community participation enhances service availability in some circumstances but depends on institutional support and governance quality. Ekenna et al. (2020) show that supported participatory governance structures can increase health system readiness, emphasising the relevance of functional WDCs in PHC delivery.

This study operationalises WDC participation behaviour using the Knowledge-Attitude-Practice (KAP) paradigm. Knowledge means understanding PHC policies, duties, and responsibilities. Attitude shows WDC members' motivation, perception, and readiness to participate in PHC governance. Practice includes attending meetings, mobilising communities, monitoring PHC facilities, and supporting health interventions. According to recent studies, any of these domain inadequacies significantly impact health system performance. Nmadu et al. (2021) revealed knowledge gaps among Kaduna State PHC professionals, while Joshua et al. (2023) found that attitudes greatly influence health system responsibility. Kaduru et al. (2025) found that WDC members with better knowledge and training have better community health outcomes, emphasising the value of KAP components.

The KAP model is beneficial, but recent material between 2020 and 2025 suggests that it may oversimplify complex behavioural and institutional realities by focusing on individual-level factors and overlooking structural constraints. Combining it with SEM and participatory governance theory gives a more complete picture of WDC behaviour in Nigeria's PHC system.

The confluence of several theoretical viewpoints gives this work a complete analytical lens. The Alma-Ata Declaration provides the normative foundation for community participation, the Social Ecological Model explains multi-level behaviour determinants, Participatory Governance Theory explains institutional and democratic involvement, and the KAP model operationalises knowledge, attitude, and practice. Knowledge drives attitude, which influences practice, while institutional, social, and policy settings mitigate these interactions. This suggests that even with sufficient information and favourable attitudes, bad governance structures, low funds, or poor institutional support may limit WDC members' PHC service participation.

The 2019–2025 empirical evidence clearly supports this integrated approach. Kaduru and Kabiru (2025), Ogah and Elemuwa (2024), Wright and Sulaiman (2024), Nmadu and Joshua (2021), and others show that knowledge, attitude, practice, governance quality, and institutional support shape WDC performance. These findings show that no single hypothesis can explain WDC participation in PHC services in Kaduna State. Thus, a multi-theoretical framework is needed to encompass human behaviour and systemic influences affecting PHC results.

Empirical Review

From 2019 to 2025, empirical literature on Ward Development Committees (WDCs), community engagement, and Primary Health Care (PHC) systems in Nigeria and other low- and middle-income countries is consistent. These studies consistently reveal that WDCs are strategically positioned as grassroots governance institutions to bridge communities and institutional health systems. Their effectiveness is variable and impacted by member knowledge, attitude, and practice, as well as institutional and environmental factors. WDCs promote health service utilisation, accountability, and community ownership of PHC programs when they work well, but when they don't, they're symbolic structures with little influence.

Recent empirical research show that WDCs improve PHC service utilisation, notably maternal and child health outcomes. In a quasi-experimental study published in BMC Public Health, Kaduru et al. (2025) found that Bayelsa State communities with active and well-trained WDCs had higher rates of antenatal care attendance, immunisation coverage, and facility-based deliveries. The study ascribed these benefits to community mobilisation, better provider-resident communication, and health system trust. In a

Nigerian HPV vaccination uptake research, Elemuwa et al. (2024) found that WDCs boosted community engagement and acceptance of vaccination programs. The results show that WDCs mobilise communities and influence health-seeking behaviour through persistent interaction and advocacy.

In addition to service utilisation, empirical research shows that WDC members' knowledge levels considerably impact their performance. Nigerian studies show PHC operations, governance, and referral system knowledge gaps. In Kaduna State, Nmadu et al. (2021) observed that PHC stakeholders, including community actors, had insufficient grasp of referral systems and service coordination. It was associated to poor decision-making and limited community-health facility integration. A qualitative study published in PLOS ONE by Ogunyemi et al. (2024) found that stakeholders in primary health care settings lack knowledge of roles and responsibilities, which hinders WDC-health authority collaboration. In an integrative review of WHO African PHC systems, Adesuyi et al. (2025) noted that community-level actors' knowledge and capacity remain critical to universal health coverage, especially in decentralised health systems like Nigeria's.

WDC PHC participation efficacy also depends on attitudes. Positive attitudes characterised by dedication, ownership, and faith in the health system frequently lead to more participation and better outcomes. In Health Promotion International, Enebeli et al. (2024) revealed that community actors and frontline health workers with positive role attitudes were more likely to actively participate in health promotion and support PHC programs. Negative attitudes, frequently caused by lack of incentives, recognition, and marginalisation, limit involvement. Multiple Nigerian research show that WDC members lack motivation due to a lack of financial or non-financial incentives, sporadic local government support, and limited decision-making power. Apathy, infrequent meeting attendance, and weakened community mobilisation commitment result from these reasons.

Empirical research show diverse results for WDC members' practice dimensions of participation. Other WDCs rarely participate in community mobilisation, facility monitoring, and lobbying. In their PLOS Global Public Health research of PHC service delivery systems in Nigeria, Ajisegiri et al. (2022) noted that the ward health system, which includes WDCs, is crucial to PHC implementation but typically lacks grassroots operationalisation. The study discovered that WDCs are present in many wards, but their activity varies. Some are active, while others are dormant. In BMC Public Health, Ogunyemi et al. (2025) identified systemic constraints like inadequate funding, logistical support, and weak institutional linkages as major barriers to effective WDC practice. These issues lead to infrequent meetings, inadequate record-keeping, and limited PHC planning and monitoring.

Further evidence from Sub-Saharan African community participation studies supports WDC-like structures improving health outcomes. A systematic review in BMC Public Health by Karuga et al. (2022) indicated that community health committees increase PHC accountability, responsiveness, and service quality. The study also found that governance arrangements, community trust, and resource availability affect their efficacy. In Nigeria, studies have shown that strong collaboration between WDCs and health providers improves service delivery and promotes equity in care.

Institutional and environmental factors consistently affect WDC performance in the literature. Governance, finance, and policy support greatly impact WDC performance. In a PLOS Global Public Health study, Ogunyemi et al. (2023) found that weak government coordination, inadequate funding, and limited community involvement in decision-making hinder PHC implementation in Nigeria. WDCs depend on institutional backing, hence these systemic issues affect their operations. Despite focusing on healthcare professionals, Iheanacho et al. (2021) and Ochie et al. (2022) studies on PHC worker knowledge, attitudes, and practices provide indirect insights into WDCs' health system environment. These studies show that even trained health workers have knowledge and practice gaps, suggesting that community-level actors like WDC members may face even greater challenges.

The research also emphasises community trust and social dynamics in WDC efficacy. Research shows that communities that trust health systems and view WDCs as genuine representatives participate more and more meaningfully. Mistrust, frequently caused by inadequate service delivery or accountability, can impede WDC efforts and community engagement. Elemuwa et al. (2024) showed that persistent engagement and transparent communication improved vaccine uptake, emphasising the relevance of relational dynamics in PHC participation.

Summary of Literature Review

A literature study studied Ward Development Committees (WDCs) and their participation in Primary Health Care (PHC) services from a conceptual, theoretical, and empirical perspective. The conceptual framework established that PHC and community participation underpin global health systems. WDCs are essential grassroots government organisations that improve community participation, accountability, and PHC service delivery in Nigeria. Traditional rulers, religious leaders, women and youth representatives, community-based organisations, health professionals, and local government officials make up WDCs, which are purposely inclusive. Their duties include community mobilisation, PHC facility oversight, resource mobilisation, and advocacy.

The Alma-Ata Declaration, Social Ecological Model (SEM), Participatory Governance Theory, and Knowledge-Attitude-Practice (KAP) model were used to understand

community participation dynamics. The Alma-Ata Declaration establishes community participation norms, SEM explains multi-level behaviour determinants, Participatory Governance Theory explains institutional and democratic processes, and the KAP model operationalises knowledge, attitude, and practice. In this integrated paradigm, knowledge drives attitude, which influences practice, while institutional, social, and policy settings modify these linkages.

The empirical review found that WDCs are strategically positioned as grassroots governance organisations that connect communities to formal health systems. Their effectiveness varies due on member knowledge, attitude, and practice, as well as institutional and cultural circumstances. WDCs improve mother and child health outcomes and PHC service utilisation, according to studies. However, information gaps, unfavourable attitudes caused by lack of incentives and recognition, and inconsistent practices caused by limited grassroots operationalisation remain major issues. Governance, finance, policy support, and community trust affect WDC performance.

The literature lists several barriers to WDC participation, including inadequate funding and resource availability, member technical capacity, institutional weaknesses like unclear roles and weak integration, political interference, poor community engagement and representation, and socio-cultural barriers like gender norms. Capacity building and training, dedicated budget lines, governance and accountability reforms, community engagement and social mobilisation, digital health technologies, and multi-sectoral collaboration can increase WDC participation.

This study addresses major research gaps identified by the review. First, there is little data on WDC members' knowledge, attitudes, and practices in Kaduna State, specifically regarding PHC co-management. Second, while difficulties are well-documented, northern Nigerian development strategies are not. Third, quantitative and qualitative methods are not used to assess participation and explain current practices. This mixed-methods study examines WDC members' KAP regarding PHC services in Kaduna State to fill these gaps and provide policy and practice evidence. The findings add to community engagement in health governance research and offer recommendations for improving WDC effectiveness in Nigeria's PHC system.

Methodology

This descriptive cross-sectional survey design with a mixed-methods approach used quantitative and qualitative methods to adequately address the research objectives in Kaduna State, Nigeria, which is located at the center of the North West zone of the country between Latitude 10.3764°N and Longitude 7.7095°E and has three Senatorial Zones (Kaduna Central, Zaria Metropolitan, and Kafanchan Metropolitan) and 23 Local Govern Ward Development Committee members from Kaduna State's 255 functional PHC

centers were the study population, and Cochran's finite population sample size formula at a 5% margin of error yielded 152 ward health centers from the 245 security-free wards. A multistage sampling technique was used, including stratification by senatorial zones, simple random sampling with proportional allocation (51 wards per zone), and random selection of one WDC member per ward, with eligibility criteria limited to WDC members serving for the last 24 months in the same ward. In a mixed-methods study, WDC members were given a structured KAP questionnaire and semi-structured interview guides to conduct in-depth interviews with PHC service beneficiaries. The questionnaire included sections on socio-demographic characteristics, knowledge of statutory roles, attitudes toward WDC participation, WDC practices toward co-management of PHC facilities, factors influencing WDC participation, and perceived challenges Expert review by supervisors and PHC Zonal Directors established face validity, pilot testing was conducted in two PHC wards (Kakangi and Kajuru), and internal consistency analysis with Cronbach's Alpha coefficient of 0.78 indicated reliability. The Kaduna State Primary Health Care Board granted ethical approval, and all participants gave informed consent. Confidentiality and anonymity were maintained throughout the trial, and participants could withdraw at any time without penalty. Quantitative data were analysed using SPSS version 25, with descriptive statistics (frequencies, percentages, means, SD) and inferential statistics ($p<0.05$). Qualitative data from in-depth interviews were transcribed, coded, and thematically analysed to complement quantitative findings. Nine PHC service beneficiaries (3 from each senatorial zone) were interviewed in-depth to assess community awareness, perceptions, and experiences with WDCs and their role in PHC service delivery.

Response Rate

A total of 152 copies of the questionnaire were distributed, and 140 duly completed and verified questionnaires were returned, representing a 92% response rate.

Demographic Characteristics of Respondents

Research Question Five: What are the major challenges affecting WDCs' participation in PHC services Kaduna state, Nigeria?

Table 1: Responses of the respondents on the major challenges affecting WDCs' participation in PHC services

NO	Items	M	SD	Remark
1	Lack of adequate funding for WDC activities is a major challenge to effective PHC participation.	3.23	1.013	**Agreed**
2	Poor attendance of WDC members at meetings affects performance.	3.84	1.242	**Agreed**
3	Lack of training opportunities weakens WDC performance.	3.24	0.934	**Agreed**

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NO	Items	M	SD	Remark
4	Limited collaboration with PHC staff reduces WDC effectiveness.	3.46	1.294	**Agreed**
5	Political interference affects WDC independence.	2.94	1.005	**Disagreed**
6	Poor communication (Gap) between WDCs and higher-level health authorities hinders participation in PHC	3.99	1.119	**Agreed**
7	Lack of recognition and respect for WDC statutory roles by PHC staff discourages active participation	2.95	1.013	**Disagreed**
8	Gender imbalance (low participation of women) limits the effectiveness of WDCs	3.58	1.253	**Agreed**
9	Weak monitoring/supervision of WDC activities reduces their effective performance	2.91	1.007	**Disagreed**
10	Inadequate community trust with WDCs affects their ability to mobilize PHC support.	3.64	1.259	**Agreed**
11	Logistic challenges (e.g., transportation, unfavorable meeting venues) reduce active participation	2.79	0.980	**Disagreed**
12	Overlapping of statutory roles with other NGO activities/groups create conflicts in carrying out WDC activities	3.56	1.177	**Agreed**
	Grand Mean	**3.35**	**1.195**	**Agreed**

Source: Field work, 2025

Collected and analyzed data presented in Table 1 shows the responses major challenges affecting WDCs' participation in PHC services Kaduna state, Nigeria. It is shown that the computed grand mean of 3.35 and SD of 1.195 is greater than the cut-off points of 3, implying that the respondents generally agreed with the items measuring major challenges affecting WDCs' participation in PHC services Kaduna state, Nigeria. Item-by-item analysis indicates that they agreed with three items but disagreed with item No 5, 7, 9 and 11 with mean of 2.94, 2.95, 2.91 and 2.79 respectively. The conclusion is that majority of the respondents agreed with the major challenges affecting WDCs' participation in PHC services Kaduna state, Nigeria

Research Question Six: What strategies can enhance the participation of WDCs in PHC services at the grassroots level within Kaduna state, Nigeria?

Table 2: Responses of the respondents on strategies can enhance the participation of WDCs in PHC services at the grassroots level

NO	Items	M	SD	Remark
1	Regular capacity-building and training for WDC would improve their participation PHC services.	4.04	1.302	**Agreed**
2	Financial support/incentives for WDC would increase participation effectiveness.	2.71	1.007	**Disagreed**
3	Stronger WDC collaboration with PHC facility staff would enhance participation in health services.	4.01	1.289	**Agreed**

4	Clear communication between WDC and LGHA and State PHC Board would improve accountability.	3.31	0.959	**Agreed**
5	Increasing women's membership in WDC will strengthens participation effectiveness.	3.84	1.273	**Agreed**
6	Recognition/awards for high-performing WDCs would motivate members to be active	3.25	1.026	**Agreed**
7	Regular supervision of WDC activities will improve PHC participation.	3.81	1.116	**Agreed**
8	Provision of WDC activity using monitoring tools (e.g., scorecards) would increase WDC accountability.	3.17	1.045	**Agreed**
9	Feed-back from WDC to LG Health Authorities would strengthen performance.	3.79	1.168	**Agreed**
10	WDC collaboration with NGOs, traditional and religious groups and community groups enhances resource mobilization.	3.21	1.076	**Agreed**
	Adoption of digital tools for WDC (SMS/WhatsApp /e-reporting) would improve participation in PHC services.	3.83	1.393	**Agreed**
	Grand Mean			

Source: Field work, 2025

Data collected, collated and analyzed presented in Table 2 shows the responses on strategies can enhance the participation of WDCs in PHC services at the grassroots level within Kaduna state, Nigeria. It is shown that the computed grand mean of 3.621 and SD of 0.465 is greater than the cut-off points of 3, implying that the respondents generally agreed with the items measuring their strategies can enhance the participation of WDCs in PHC services at the grassroots level within Kaduna state, Nigeria. Item-by-item analysis indicates that they agreed with three items but disagreed with item No 2 with mean 2. 71. The conclusion is that majority of the respondents tend to have agree with the strategies enhances the participation of WDCs in PHC services at the grassroots level in Kaduna state, Nigeria.

Inferential Statistics

Hypothesis one: The challenges hindering effective participation of WDCs in PHC services will not be significantly high

In testing the first null hypothesis, the variable of interest is the challenges hindering effective participation of WDCs in PHC services, measured by 12 items. The respondents' scores on the scale were summed-up. For the challenges hindering effective participation of WDCs in PHC services, the scores made on the whole scale should be significantly higher/greater that 36 (which is the midpoint between strongly agree and strongly

disagree). This implies 3 X 12, the number of items measuring the construct. This null hypothesis was tested with a one-sample t-test) otherwise called population t-test). The results are presented in Table 3.

Table 3: Population t-test analysis of the challenges hindering effective participation of WDCs in PHC services in Kaduna state, Nigeria.

Variable	Sample Mean	Sample SD	Ref. Mean	T	Sig	Remark
The challenges hindering effective participation of WDCs in PHC services	40.11	8.23	36	5.913	< .001	Sig.

Source: Field work, 2025

A look at the results indicated that the challenges hindering effective participation of WDCs in PHC services is statistically and significantly positive among women in selected PHC centres in Kaduna state, Nigeria. (M=40.11, SD=8.23), t (139) = 5.913, P <.001. The magnitude of difference in the mean (mean difference = 4.11), 95% CL: 2.74 to 5.49) was large (eta squared = 0.52). With these results the first null hypothesis is hereby not supported and hence rejected for the alternative. This implies that the challenges hindering effective participation of WDCs in PHC services in the study area

Hypothesis two; The strategies for improving WDCs' participation in PHC services at the grassroots level will not be significantly high

In testing the second null hypothesis, the variable of interest is the strategies for improving WDCs' participation in PHC services at the grassroots level, measured by 11 items. The respondents' scores on the scale were summed-up. For the strategies for improving WDCs' participation in PHC services at the grassroots level will be significantly high, the scores made on the whole scale should be significantly higher/greater that 33 (which is the midpoint between strongly agree and strongly disagree). This implies 3 X 11, the number of items measuring the construct. This null hypothesis was tested with a one-sample t-test) otherwise called population t-test). The results are presented in Table 4.

Table 4: Population t-test analysis of the strategies for improving WDCs' participation in PHC services at the grassroots level in Kaduna state, Nigeria.

Variable	Sample Mean	Sample SD	Ref. Mean	T	Sig	Remark

The strategies for improving WDCs' participation in PHC services at the grassroots level	38.95	9.81	33	7.18	<.001	Sig.

Source: Field work, 2026

Table 4.15 clearly indicated a statistically significant high level on the strategies for improving WDCs' participation in PHC services at the grassroots level (M=38.95, SD=9.81), t (139) = 7.18, P <.001. The magnitude of difference in the mean (mean difference =7.95), 95% CL: 4.32 to 7.59) was very large (eta squared =e 0.51). With these results the second null hypothesis is hereby not supported and hence rejected for the alternative. This implies that the level of the strategies for improving WDCs' participation in PHC services at the grassroots level is significantly high in selected PHC centres in kaduna state, Nigeria.

Qualitative Findings from In-Depth Interviews (IDIs)

In-depth interviews were conducted with community members who are beneficiaries of PHC services across selected wards from the three senatorial zones. Six core themes emerged from the data.

Theme 1: Community Knowledge and Awareness of WDCs

Knowledge of WDCs among community members was uneven and generally low, with marked variation across the three zones. In Zone 3 (Kafanchan), some respondents had encountered WDC members during house-to-house polio vaccination campaigns. One beneficiary stated: *"I know some members of WDCs and they usually came with women into our houses during polio immunization, so I can say that WDC knows their role."*

In contrast, Zone 1 (Zaria) demonstrated a near-total absence of awareness. A respondent confessed: *"I cannot say anything on that, because I don't know WDC in this ward, is it a political party? or what."* The conflation of WDC with political structures underscores how far the committees remain from grassroots consciousness.

Theme 2: Perceived Attitudes of WDCs toward PHC Participation

Community members based their perceptions on observable actions rather than documented engagement. The most commonly cited activity was mobilization for polio immunization. A respondent remarked: *"All I know WDC members do call us with loud speakers and town announcers to collect polio vaccine... I have never been invited for fund raising or ask for drugs but I saw some of our reach people painting PHC clinic."*

Theme 3: Community Perceptions of WDC Practices

Knowledge of actual WDC practices related to PHC co-management was minimal across all zones. The most frequently mentioned practice was the holding of town hall meetings,

although none of the respondents had personally attended. One participant recalled: *"WDC do practice, conduct of town hall meetings, I once heard announcement of invitation via radio and I did not attend, so I cannot rate it either good or bad but I know is for good."*

Theme 4: Factors Influencing WDC Participation

Community members offered a narrow view of factors influencing WDC participation. In Zone 3, a respondent said: *"I cannot say, but if Government gave WDC incentive they will do well."* In Zone 2, participants emphasized collaboration with higher health authorities: *"Collaboration with Local Government health authority in discharging their works."*

Theme 5: Perceived Challenges Affecting WDC Effectiveness

The most consistently identified challenge across all zones was the extreme lack of visibility and public awareness of WDCs. In Zone 3, a respondent stated: *"Members of WDC, knows themselves with few individuals in the ward but majority of the house hold heads and families they don't know about WDC and their roles."* In Zone 1, the challenge was absolute: *"I don't know about WDC, talk less of any challenge, I heard it for the first time."*

Theme 6: Suggested Strategies for Improving WDC Activities

Beneficiaries proposed simple, contextually appropriate strategies centered on enhanced communication. In Zone 2, a respondent suggested: *"They can use android phone and radio, that is to suggest to have regular update information about WDCs in our wards via What's-App flat form and radios programs."* In Zone 1: *"Since it is on health, is better to include phones and Churches, Mosque and schools in sending Information on WDCs."*

Challenges Hindering Effective WDC Participation

The study identified that WDC members face significant and multifaceted challenges that constrain their effective participation in PHC services. The grand mean of 3.35 (SD=1.195) confirmed that substantial barriers exist, with the one-sample t-test showing that the level of reported challenges was significantly high ($t(139)=5.913$, $p<.001$, $\eta^2=0.52$).

Communication Failures emerged as the most critical challenge, with "poor communication between WDCs and higher-level health authorities" receiving the highest mean of 3.99 (SD=1.119). This finding corresponds with Karamagi et al. (2026), who emphasised that inadequate integration between community committees and higher health system levels constitutes a significant impediment in African health systems. When WDCs lack feedback on submitted reports, are uninformed about policy changes, and have no designated contacts within the LGHA, they function in an information void that

fosters frustration and disengagement. This difficulty is closely associated with previously documented deficiencies in understanding reporting structures: if members lack knowledge of formal reporting lines and if those lines are not diligently upheld, communication deteriorates.

Internal Committee Dynamics represented another critical challenge. "Poor attendance of WDC members at meetings affects performance" received a mean of 3.84 (SD=1.242). Attendance issues serve as both an indicator and a catalyst of inadequate participation: irregular or unproductive meetings lead to diminished attendance, which subsequently hampers the committee's ability to function, perpetuating a self-reinforcing loop. This aligns with the attitude data indicating that motivation to attend meetings was only slightly above the neutral threshold.

Community Trust Deficits were equally severe, with "inadequate community trust with WDCs affects their ability to mobilize PHC support" receiving a mean of 3.64 (SD=1.259). The validity of WDC is founded on community trust as its social capital. Mbaegbu et al. (2025) and Elemuwa et al. (2024) assert that confidence is established through observable enhancements in healthcare and clear communication. If communities view WDCs as ineffective or as extensions of the health institution instead of authentic community representatives, they will refrain from responding to mobilization efforts.

Gender Imbalance was identified as a significant challenge (M=3.58, SD=1.253). This reflects broader patriarchal institutions and results from a lack of awareness of gender composition standards. The underrepresentation of women may lead to less focus on health concerns that predominantly impact women and children, impairing the committee's capacity to engage female community members. This is especially crucial in northern Nigeria, where cultural norms frequently limit male-female interaction, rendering female WDC members vital for disseminating health information and services to women.

Significantly, numerous difficulties commonly identified in the literature as substantial obstacles were not regarded as severely by this group. Political interference (M=2.94), inadequate acknowledgement by PHC personnel (M=2.95), weak monitoring/supervision (M=2.91), and logistic challenges (M=2.79) all registered below the agreement threshold. This indicates that the predominant challenges in Kaduna's WDCs are perceived as internal disorganization and inadequate vertical links rather than overt political interference. The diminished concern over logistics may indicate the close proximity of PHC facilities to members' homes, reducing transportation as an obstacle in this context.

The qualitative findings from IDIs corroborate these quantitative results. The most consistently identified challenge across all three zones was the extreme lack of visibility and public awareness of WDCs. In Zone 3, a respondent stated: *"Members of WDC, knows themselves with few individuals in the ward but majority of the house hold heads and*

families they don't know about WDC and their roles." This invisibility of the committees is compounded by the fact that the few visible activities—mainly immunization campaigns—are often attributed to health workers or traditional leaders rather than to WDCs.

Strategies for Improving WDC Participation

The study found strong consensus on a multi-pronged approach to enhance WDC participation, with the grand mean of 3.62 (SD=0.465) and the one-sample t-test confirming that the aggregated strategy score was significantly above the midpoint ($t(139)=7.18$, $p<.001$, large effect size $\eta^2=0.51$).

Capacity Building and Training received the highest endorsement (M=4.04, SD=1.302). This reflects the previously identified knowledge gaps and the recognition that members require structured, ongoing training to perform their roles effectively. Competency-based training covering roles and responsibilities, PHC governance, financial oversight, facility monitoring, and reporting should be mandatory for all WDC members upon inauguration and reinforced through bi-annual refresher courses. This aligns with findings from Kaduru et al. (2025), who illustrated that enhanced WDC capacity through focused training resulted in substantial increases in service utilisation.

Collaboration with PHC Staff was equally prioritized (M=4.01, SD=1.289). This coupling demonstrates a nuanced comprehension among members that both internal competencies and exterior relational qualities—harmonious working relationships—are necessary. PHC facility managers should hold monthly joint meetings with WDC executives to review service data, discuss community feedback, and plan joint outreach activities.

Gender Inclusivity received substantial endorsement (M=3.84, SD=1.273), consistent with prior attitudinal support for gender equity. The strong acceptance of augmenting women's membership is particularly significant as it indicates an acknowledgement within the prevailing male-dominated committees that their current composition is inadequate. The internal demand for gender transformation is a significant opportunity for policymakers to implement the 30% quota and to allocate resources towards training and mentoring initiatives for female WDC members.

Digital Tools received a favourable assessment (M=3.83, SD=1.393), indicating a willingness to accept technological solutions that may alleviate communication deficiencies. The elevated rating of digital tools signifies the growing prevalence of mobile technology in Nigeria and aligns with Ojiakor et al. (2025), who indicated that community governance structures employing health data through basic digital platforms enhanced decision-making and accountability.

Supervision and Feedback were equally emphasised, with regular supervision of WDC activities (M=3.81, SD=1.116) and feedback from WDC to LG Health Authorities (M=3.79,

SD=1.168) receiving strong support. This highlights the necessity for external accountability and reverse information channels. Clear communication between WDC and LGHA and State PHC Board (M=3.31) and recognition/awards for high-performing WDCs (M=3.25) received moderate yet distinct support.

In a striking contrast, the item "financial support/incentives for WDC would increase participation effectiveness" was the only strategy that fell below the agreement threshold (M=2.71, SD=1.007). This is consistent with the earlier observation that members prioritise structural over monetary interventions. The dismissal of financial incentives as an isolated approach does not suggest that resources are superfluous; rather, it indicates that tackling systemic issues such as training, integration, supervision, and communication should take precedence. The literature on community health worker motivation corroborates this perspective, consistently demonstrating that intrinsic factors such as recognition, training, and supportive supervision serve as more sustainable motivators than minimal cash payments, which may foster dependency and conflict (Kok et al., 2020).

The qualitative findings from IDIs strongly support these strategic directions. Beneficiaries proposed simple, contextually appropriate strategies centered on enhanced communication. Across all zones, the use of modern and traditional information channels was strongly advocated. In Zone 2, a respondent suggested: *"They can use android phone and radio, that is to suggest to have regular update information about WDCs in our wards via What's-App flat form and radios programs."* In Zone 1: *"Since it is on health, is better to include phones and Churches, Mosque and schools in sending Information on WDCs."* The overall message is a call for continuous, multi-channel communication that goes beyond campaign-specific announcements to encompass regular updates about WDC roles, meetings, and achievements.

Conclusion

This study examined the challenges hindering effective participation of Ward Development Committees in Primary Health Care services and identified strategies for improving their participation at the grassroots level in Kaduna State, Nigeria. The findings reveal that WDC members face significant challenges centered on communication failures with higher health authorities, low meeting attendance, inadequate community trust, and gender imbalance. These challenges are compounded by extreme lack of visibility and public awareness of WDCs, as confirmed by the qualitative findings.

The study identified a clear and actionable set of strategies for improving WDC participation. The most endorsed interventions were regular capacity-building and training, stronger collaboration with PHC facility staff, increasing women's membership, adoption of digital tools, regular supervision, and feedback mechanisms. Direct financial

incentives were conspicuously deprioritized, indicating a preference for structural and capacity-building approaches over monetary interventions.

The study theoretically validates the efficacy of the integrated framework that amalgamates the Alma Ata Declaration, the Social Ecological Model, Participatory Governance Theory, and the KAP model. Challenges and strategies operate at multiple levels—individual, interpersonal, organizational, community, and policy—requiring concurrent interventions across all levels for sustainable improvement.

The practical impact is evident: without addressing these challenges and implementing the identified strategies, WDCs will persist as superficial entities engaged during PHC campaigns and inconspicuous in ward health governance. Realizing the vision of the Ward Health System and the tenets of primary health care requires the transformation of WDCs from passive mobilizers into empowered, informed, and accountable collaborators in PHC service delivery.

Recommendations

For Policy-Makers (Kaduna State PHC Board, LGHA, and NPHCDA)

1. **Institutionalize WDC training curriculum:** A competency-based training program covering roles and responsibilities, PHC governance, financial oversight, facility monitoring, and reporting should be mandatory for all WDC members upon inauguration and reinforced through bi-annual refresher courses.
2. **Activate a WDC functional communication and feedback system:** Activate WDC mentoring officers at the LGA level responsible for maintaining regular contact with WDCs, providing timely information, receiving reports, and ensuring functional feedback mechanisms.
3. **Enforce gender composition and tenure-ship policy:** The 30% minimum quota for women and the 4-year tenure cycle must be strictly applied during WDC selection. Regular audits of gender composition should be conducted and published.
4. **Formalize WDC integration into PHC co-management structures:** WDC representatives should be statutory members of Local Government Health Management Committees and participate in annual operational plans for PHC facilities at ward level.
5. **Allocate dedicated operational budget line for WDC activities:** Local Government Health Authority budgets should include specific budget items for WDC meetings, PHC outreach services, mobilization logistics, and communication costs.

For Primary Healthcare Administrators and Managers

1. **Foster collaborative working relationships:** PHC facility managers should hold monthly joint meetings with WDC executives to review service data, discuss community feedback, and plan joint outreach activities.
2. **Provide monitoring tools and mentorship:** Supply WDCs with simple checklists and scorecards for monitoring PHC activities and offer supportive supervision.
3. **Recognize and reward high-performing WDCs:** Implement non-monetary recognition schemes including certificates of merit and public acknowledgment to motivate members and raise the profile of WDC work.
4. **Improve documentation and reporting culture:** Provide standardized minute-taking templates and reporting formats; establish regular submission of minutes and activity reports.

For Health Development Partners and NGOs

1. **Align capacity-building initiatives with systemic reforms:** Training programs should be embedded within broader state PHC strengthening plans rather than delivered as isolated inputs.
2. **Support gender-transformative interventions:** Fund community dialogues on women's participation in WDC composition and provide mentorship networks for female WDC members.
3. **Pilot digital health governance tools:** Support the design and evaluation of WDC mobile-based reporting applications tailored to low-literacy contexts.

For Future Research

1. **Conduct longitudinal studies** to assess the impact of strengthened WDCs on PHC service utilization and health outcomes over time, moving beyond cross-sectional KAP assessments to measure behavioural and health system changes.
2. **Investigate the relationship between gender composition and WDC performance** through comparative case studies, examining how increased female representation influences the range of health issues addressed.
3. **Evaluate the effectiveness of specific interventions** such as digital reporting tools, structured supervision, and competency-based training through experimental or quasi-experimental designs to build an evidence base for scaling up.
4. **Explore community perspectives** on WDC legitimacy and effectiveness in greater depth, using ethnographic methods to understand how trust, accountability, and social capital are built or eroded at the grassroots level.

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