

Collaboration Among Healthcare Professionals and Effective Healthcare Delivery in Kogi State Specialist Hospital, Lokoja, Kogi State – Nigeria

Samuel Soji AKINWALE¹, Julius Olugbenga OWOYEMI², Edime Yunusa³

^{1,2&3}Department of Sociology, Faculty of Social Sciences, Prince Abubakar Audu University, Anyigba, Kogi State -Nigeria.

*** Correspondence:** Edime Yunusa

The authors declare that no funding was received for this work.



Received: 10-December-2025

Accepted: 21-January-2026

Published: 25-January-2026

Copyright © 2026, Authors retain copyright. Licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. <https://creativecommons.org/licenses/by/4.0/> (CC BY 4.0 deed)

This article is published in the **MSI Journal of Medicine and Medical Research (MSIJMMR)**
ISSN 3049-1401 (Online)

The journal is managed and published by MSI Publishers.

Volume: 3, Issue: 1 (January-2026)

ABSTRACT: To achieve the global health Sustainable Development Goals (SDGs), there is need for all healthcare professionals to collaborate within and across specialties and disciplines. Despite the global evidences supporting interprofessional collaboration, there continues to be issues in understanding its manifestations and influence on healthcare delivery in resource-limited environments like Nigeria. Therefore, this study investigated the collaboration among healthcare professionals and effective healthcare delivery in Kogi State Specialist Hospital (KSSH), Lokoja, Nigeria. The study assessed the extent of collaboration among healthcare professionals, its effect on healthcare service delivery. The study utilised the Relational Coordination Theory, the central assumption of which is that high-quality relationships enable more effective communication, which in turn improves coordination and performance outcomes. Descriptive survey research design was adopted using a structured questionnaire administered to a census sample of 249 healthcare professionals in the study area and the data gathered were analyzed using descriptive statistics and the formulated hypotheses were tested using both simple and Multiple Linear

Regression. The findings revealed a high prevalence of interprofessional collaboration of 99.2% among respondents; hypothesis testing further showed that collaboration significantly improves healthcare delivery outcomes, including service efficiency ($\beta = 0.60, p < 0.001$), reduced patient length of stay ($\beta = -0.41, p = 0.004$), fewer medical errors ($\beta = -0.55, p < 0.001$), and higher patient satisfaction ($\beta = 0.68, p < 0.001$). The study concluded that collaboration is not only prevalent among the hospital workforce but also essential for delivering high-quality, efficient, and patient-centred care and recommended that the hospital administrators, State Ministry of Health/Hospital Management Board, Professional Regulatory Councils and policymakers should institutionalise inclusive collaboration frameworks that transcend professional boundaries, giving equal voice to all healthcare workers in clinical decision-making professional Councils/Regulatory Bodies should strengthen collaboration through continuous interprofessional training programmes is essential, particularly those that simulate real-life scenarios and encourage role appreciation across the hospital departments.

Keywords: *Health, Healthcare System, Healthcare Professionals, Effective Collaboration, Healthcare Delivery, Kogi State Specialist Hospital, Lokoja.*

Background to the Study

Nigeria's healthcare system is endowed with highly trained professionals across diverse disciplines, including doctors, nurses, pharmacists, laboratory scientists, and other allied health workers. However, the effectiveness of healthcare delivery is closely linked to the level of collaboration among these professionals. The World Health Organisation (WHO) has consistently emphasised the need to strengthen processes that promote accessible, affordable, and high-quality healthcare services, noting that optimal health outcomes depend not only on the availability of human and material resources but also on how effectively these resources are organised, managed, and delivered (WHO, 2017). Interprofessional collaborative practice has therefore been identified as a central strategy for improving healthcare access, coverage, and quality, as well as for enhancing patient outcomes, reducing morbidity and mortality, and shortening hospital stays (Pannick et al., 2022).

Collaborative practice, as defined by the WHO (2019), occurs when healthcare professionals from different backgrounds work together with patients, families, and communities to deliver safe, effective, and patient-centred care. Healthcare teams are characterised by dynamic and interdependent interactions among members who perform specific roles towards achieving shared goals (WHO, 2017). In contemporary healthcare systems, optimal care delivery increasingly relies on interdisciplinary teamwork involving clinicians, support staff, patients, and families. As a result, interdisciplinary collaboration has gained global recognition as a key approach to improving service delivery and strengthening health systems (Bryant et al., 2018).

Empirical evidence demonstrates that effective teamwork in healthcare significantly reduces medical errors and waste, improves efficiency and quality of care, enhances patient safety and satisfaction, and contributes to better health outcomes (Pannick et al., 2022; Gougeon et al., 2022). It also benefits healthcare professionals by reducing workload pressures, increasing job satisfaction, and improving staff retention, while strengthening healthcare institutions and society at large (Kalb & O'Conner-Von, 2022). Interprofessional collaboration, which involves shared decision-making, care coordination, and cooperation among healthcare professionals and patients, is therefore widely regarded as essential for delivering high-quality, patient-centred care.

Interprofessional collaboration occurs when professionals from different disciplines work together to solve problems and achieve common healthcare goals (Virani, 2022). It is considered a critical pathway to optimal patient outcomes, particularly when underpinned by trust, mutual respect, and clearly defined professional roles (Jadotte et al., 2018; Karam et al., 2018). Despite its importance, evidence suggests that collaboration in healthcare settings often requires deliberate effort, and the contributions of different professionals are not always fully recognised or effectively integrated (Schot et al., 2020). Key competencies for effective interprofessional collaboration include patient-centred care, role clarification, team functioning, collaborative leadership, effective communication, and conflict resolution (Orchard & Bainbridge, 2019).

Although collaboration is widely acknowledged as vital to effective healthcare delivery, its practical implementation remains limited in many settings (Pannick et al., 2022). Studies have shown that poor collaboration contributes significantly to weak and ineffective healthcare systems, including those in Nigeria (Rosen, 2018). Given the multidisciplinary nature of tertiary hospitals, this study examines collaboration among healthcare professionals and its influence on effective healthcare delivery at Kogi State Specialist Hospital, Nigeria, with a view to addressing persistent gaps in teamwork and service delivery.

Statement of the Problems

Interprofessional conflict in Nigeria is prevalent and often arises from differences in professional roles, miscommunication, stereotypes, and conflicting values. Studies have shown that rivalry, particularly between doctors and nurses, leads to breakdowns in teamwork and delays in patient care (Elom et al., 2024). These challenges extend beyond interpersonal issues to systemic inefficiencies as fragmented service delivery, duplication of efforts, and waste of scarce resources. The COVID-19 pandemic further highlighted these vulnerabilities, exposing the urgent need for sustainable collaborative frameworks, especially in resource-constrained environments like Kogi State Specialist Hospital (Ogundele et al., 2023).

While resource-rich countries have successfully documented and implemented collaborative healthcare models with proven benefits for patient outcomes (Gougeon et al., 2022), similar progress has not been adequately realized in Nigeria. Previous studies by Ogundele et al. (2023) Gougeon et al., (2022) and Elom et al., (2024) among others have largely identified the existence of rivalry and communication barriers but has not provided sufficient empirical evidence on the impact of collaboration on service delivery in Nigerian hospitals. Given these gaps, this study addressed the critical omission by investigating the collaboration among healthcare professionals and effective healthcare delivery in Kogi State Specialist Hospital, It dived into assessing its impact on service delivery. Addressing these issues is critical to improving patient safety, strengthening healthcare outcomes, reducing inefficiencies, and supporting Nigeria's progress toward achieving SDG 3 by 2030.

Research Questions

The following research questions guided the study:

- i. What is the prevalence of collaboration among healthcare professionals in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State, Nigeria?
- ii. What are the effects of collaboration among healthcare professionals on healthcare delivery in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State, Nigeria?

Aim and Objectives of the Study

The general aim of this study was to investigate the collaborations among healthcare professionals and effective healthcare delivery in Kogi State Specialist Hospital in, Lokoja.

The specific objectives include the following, to:

- i. Assess the prevalence of collaboration among healthcare professionals in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State, Nigeria.
- ii. Examine how collaboration among healthcare professionals affect healthcare delivery in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State, Nigeria

Research Hypotheses

The following null hypotheses were formulated and tested to support the findings of the study:

Hypothesis 1

H₀: There is no significant relationship between the prevalence of collaboration among healthcare professionals and the quality of healthcare delivery in Kogi State Specialist Hospital (KSSH).

Hypothesis 2

H₀: Collaboration among healthcare professionals does not significantly affect healthcare service delivery, patient length of stay, medical error rates, and patient satisfaction scores in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State.

Significance of the Study

This study holds substantial significance in practical, theoretical, and policy dimensions, as well as for healthcare practitioners and patients. Practically, it will address the pressing issue of inadequate collaboration among healthcare professionals, which has led to communication breakdowns, inefficient workflows, and compromised patient safety.

Theoretically, this study contributed to the growing body of knowledge on healthcare collaboration by providing empirical evidence from a resource-constrained environment like Nigeria.

From a policy perspective, the study has the potential to influence healthcare regulations and institutional guidelines that govern professional interactions in public hospitals.

For healthcare practitioners, the study underscored the importance of teamwork in achieving better patient outcomes. By understanding how collaboration impacts their daily practices, doctors, nurses, and other medical professionals can adopt strategies that improve coordination, reduce medical errors, and enhance efficiency.

Scope of the Study

The scope of this study covered the level of collaboration among healthcare professionals in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State, Nigeria, which involved evaluating the current state of teamwork, communication, and mutual respect among doctors, nurses, and other allied health professionals. This provided a foundation for understanding the dynamics of collaboration in the hospital setting. Building on this, the study examined how collaboration among healthcare professionals impacts healthcare delivery in public hospital in Kogi State. This involved investigating the relationship between collaboration and patient outcomes, such as satisfaction, health status, and re-admission rates, as well as the effect of collaboration on healthcare delivery processes, like length of stay and patient safety. By exploring this relationship, the study provided valuable insights into the critical role of collaboration in delivering high-quality patient care.

Conceptual Review

Collaboration

Collaboration has been defined as to work together, especially in a joint intellectual effort (Schot, et al., 2020). In healthcare, however, collaboration has been difficult to define, both conceptually and operationally. Within healthcare literature several definitions for collaboration can be found, ranging from simple definitions, a partnership or a complementary relationship of interdependence (Fagin, 2019), to more complex definitions including a process by which individuals from different professions structure a collective action in order to co-ordinate the services they render to individual clients or groups (Sicotte et al., 2019). The former definitions focus on the interaction between healthcare providers alone, while the latter includes the target group that the collaboration aims to serve. Karam is (2005) defined collaboration in much the same way, as: “synergistic interactions to influence patient care”. Although helpful starting points, these definitions are problematic in that they can be interchanged with concepts related to collaboration such as coordination, cooperation and sharing. While these related concepts might play a part in collaboration, they are not in and of themselves collaboration.

In order to measure collaboration and subsequently correlate collaboration with health outcomes, cost of service provision or work satisfaction, the thrust of this study, a definition of collaboration must be adopted that includes its measurable attributes. Along these lines, Reeves, et.al (2018) undertook a review of the literature to determine how the concept of collaboration was being used in healthcare literature in order to clarify and define the concept in a measurable way. Although the researchers were specifically interested in collaboration between nurses and physicians in a clinical ICU setting, their work shed light on the conceptualization of inter-professional collaboration in other healthcare settings as well.

Healthcare System

The Nigerian health care system is structured at primary, secondary, and tertiary levels, with the three tiers of government sharing responsibility for the provision of health care services (Asuzu, 2023). The Federal Government (FG) is responsible for

tertiary care, the development of national health policy, and providing technical assistance to state ministries of health (SMOH) and local government health authorities (LGHAs). The state governments (SGs) are responsible for state tertiary and secondary care, regulation as well as providing technical assistance to LGHAs, while the LGHAs are responsible for primary health care (PHC) service delivery (Asuzu, 2023).

The health care system comprises the public and private health sectors. The Nigerian health care system is a complex mixed system, with private hospitals operating as free market entities and public hospitals operating as government entities, with staff salaries paid by the government and all buildings and equipment owned by the government. The private health sector is responsible for about 60% of health care service delivery, while the public health sector accounts for 40%. The public health sector is organized at the primary, secondary, and tertiary levels. The local government is responsible for the primary level, the state government is responsible for the secondary level, and the federal government is responsible for the tertiary level (Federal Ministry of Health, 2020).

Public health facilities include teaching hospitals, specialist hospitals, general hospitals, health centers, and health posts. However, the National Primary Health Care Development Agency (NPHCDA), which is an agency under the Federal Ministry of Health (FMOH), provides support for PHC due to the weakness of local governments (LGs), while the ultimate responsibility still lies with the LGs. The private health sector comprises private-for-profit hospitals, private-not-for-profit hospitals, faith-based health facilities, small clinics, pharmacies, patent medicine dealers, maternity homes, traditional healers, and alternative health care providers. Nigeria has a total of 30,345 PHC facilities, 3993 secondary health facilities, and 89 tertiary health facilities but More money is spent on tertiary health care services compared to PHC services (Makinde, et al., 2022).

Partnerships with various organizations have also played a crucial role in advancing healthcare in Kogi State. Collaborations with international and local NGOs, as well as health-focused organizations, have enabled the government to leverage additional resources and expertise in addressing the health needs of its citizens. These

partnerships have facilitated the implementation of community-driven health initiatives and have enhanced the state's capacity to respond to public health challenges effectively. The collective efforts of the government, healthcare professionals, and partner organizations have contributed to a more robust healthcare system that is better equipped to meet the needs of the population. On the healthcare team in Kogi State Nigeria, there are a range of individuals who act as members of an inter-professional healthcare team in a public healthcare facility. They tend to be the core health professionals and include:

A. The Medical Doctor

Medical doctors, as a group, make decisions concerning the explicit goals of the organization, that is, about the diagnosis and treatment of patients (Schot et al., (2020). According to Osoba et al., (2021). A qualified medical doctor in Nigeria undergoes at least five years of professional training in a College of Medicine, culminating in a Bachelor of Medicine, Bachelor of Surgery (MBBS). Upon graduation, the Medical and Dental Council of Nigeria (MDCN) requires a one-year internship in a hospital approved by the Council. During this period, graduates hold provisional registration with MDCN. After successful completion of the internship, they may apply for full registration with MDCN. The internship must be completed within twelve months, and interns are expected to further develop both technical and professional competencies. Full registration is required before independent practice or participation in the National Youth Service Corps (NYSC).

B. The Registered Nurse/Midwife

A Registered Nurse/Midwife in Nigeria is a health professional trained under programs approved by the Nursing and Midwifery Council of Nigeria (NMCN), responsible for delivering care across the spectrum including maternal health, patient assessment, planning, implementing and evaluating patient care. While physicians prescribe medical or surgical treatment, nurses/midwives also make nursing diagnoses and develop care plans using the nursing process. They are often in charge of the ward environment, ensuring a caring atmosphere, respond to patient and staff

queries, and act as a bridge between patients, doctors, and other healthcare workers (Chimezie, 2019; Obichi et al., 2021; Nwajiobi, 2018).

C. The Clinical Laboratory Scientist

Clinical laboratory services form an integral part of overall health services and have as part of their objectives, the provision of results that are reliable, timely and interpretable. According to Ojule (2024), without reliable laboratory support: (1) patients are less likely to receive the best possible care, (2) resistance to essential drugs will continue to spread, (3) the source of diseases may not be identified correctly, (4) the spread of major communicable diseases will not be checked reliably, and (5) valuable financial and human resources may be diverted to ineffective treatment and control measures. The clinical laboratory scientist is involved in the production of a clinical laboratory result. To produce a laboratory result, a specimen must be obtained by the scientist or other member of the team. He/she then analyses the specimen in the laboratory and the result is transmitted to the doctor.

D. The Pharmacist

The pharmacist is an expert in the field of medicinal products. The former president of the Pharmaceutical Society of Nigeria, Mukhalalati and Taylor (2019) stated that the pharmacist has detailed knowledge of all aspects of medicines including formation, side effects, and possible interactions. He or she is thus an important link in the process leading to a decision on the choice of medication for a patient. Once the decision of the physician has been made, there is need for a team approach between the pharmacist and the nursing staff. This co-operation helps to ensure that no doubt exists in the minds of those who will administer the medication about the proper dosage, time of administration, and any precautions to be taken in its use.

The Prevalence of Collaborative Practices among Professionals in the Nigerian Healthcare System

The landscape of collaborative practices within the Nigerian healthcare system presents a complex and multifaceted narrative of challenges, incremental progress,

and systemic limitations. Contemporary research reveals a nuanced picture of interdisciplinary interactions that oscillate between aspiration and substantial implementation barriers. Empirical investigations suggest that collaborative practices in the Nigerian healthcare system remain markedly underdeveloped, characterized by fragmented professional interactions and limited systematic integration. Adebayo (2023) demonstrate that approximately 37% of healthcare institutions exhibit minimal interdisciplinary collaboration, reflecting deep-rooted structural impediments that constrain meaningful professional engagement.

Interprofessional collaboration rates vary significantly across different healthcare domains. Specialized medical contexts, such as emergency medicine and oncology, demonstrate marginally higher collaborative engagement compared to primary healthcare settings. Chukwu and Nwankwo (2022) highlight that critical care environments tend to generate more spontaneous collaborative interactions, driven by immediate patient management requirements and complex medical challenges.

Institutional cultures predominantly perpetuate hierarchical communication structures that substantially inhibit collaborative practices. Traditional professional boundaries create vertical communication paradigms where junior healthcare professionals experience significant limitations in meaningful interdisciplinary interactions. Okeke (2023) emphasize that approximately 68% of healthcare institutions maintain rigid professional demarcations that fundamentally obstruct comprehensive collaborative approaches.

Regulatory frameworks significantly influence collaborative practice rates. Current professional governance mechanisms insufficiently incentivize interdisciplinary engagement, creating structural disincentives for comprehensive team-based healthcare delivery. Nwozichi and Olatunji (2022) argue that existing regulatory environments fail to establish robust mechanisms promoting systematic collaborative practices.

Geographical disparities introduce substantial variations in collaborative practice rates across different Nigerian regions. Urban healthcare centers demonstrate marginally higher collaborative engagement compared to rural healthcare settings,

reflecting differential access to resources, technological infrastructure, and professional development opportunities. Adenle (2021) reveal that metropolitan healthcare institutions exhibit approximately 45% higher collaborative interaction rates compared to rural healthcare facilities.

Educational training programs represent a critical determinant of collaborative practice potential. Contemporary medical and healthcare professional curricula demonstrate limited emphasis on interprofessional education, perpetuating siloed professional socialization processes. Okafor and Unamba (2022) suggest that less than 22% of healthcare educational programs incorporate comprehensive interprofessional training modules, significantly constraining collaborative competencies.

Technological infrastructure emerges as a pivotal factor influencing collaborative practice rates. Digital communication platforms, electronic health records, and telemedicine technologies create emergent opportunities for enhanced professional interactions. However, implementation challenges persist, with approximately 62% of healthcare facilities confronting significant technological integration barriers (Okafor and Unamba, 2022).

Socioeconomic constraints substantially impact collaborative practice dynamics. Resource limitations, professional competition, and individual survival strategies often supersede collective collaborative objectives. Healthcare professionals frequently prioritize individual professional achievements over comprehensive team-based approaches.

Cultural diversity introduces additional complexity to collaborative practice rates. Nigeria's multifaceted ethnic landscape creates communication nuances that can potentially obstruct seamless professional interactions. Language diversity, cultural variations, and professional socialization processes generate subtle but significant collaborative challenges (Adebayo, 2023). The author further asserts that gender dynamics significantly influence collaborative practice experiences. Female healthcare professionals frequently encounter subtle marginalization and reduced

opportunities for meaningful interdisciplinary engagement. These structural inequities further complicate collaborative practice potential.

Psychological factors, including professional ego, status consciousness, and limited understanding of collaborative benefits, substantially impact interaction rates. Many healthcare professionals perceive collaboration as potentially threatening individual autonomy rather than recognizing its potential for enhanced patient outcomes. Emerging research suggests incremental improvements in collaborative practices, driven by progressive institutional reforms, technological innovations, and evolving professional consciousness. However, transformative change requires sustained, systemic interventions addressing multiple institutional, educational, and cultural dimensions (Nwozichi & Olatunji, 2022).

However, recommendations emerging from contemporary research emphasize developing comprehensive strategies targeting collaborative practice enhancement. These include reforming educational curricula, implementing supportive technological infrastructures, creating regulatory mechanisms that incentivize interdisciplinary engagement, and cultivating organizational cultures that value collaborative accountability.

Effects of Collaboration among Healthcare professionals on Effective Healthcare Outcomes in Nigeria

Collaboration among healthcare professionals has become an essential element in achieving optimal healthcare outcomes, and its importance has been increasingly recognized in recent years. Studies have shown that effective collaboration among healthcare professionals leads to improved patient outcomes, enhanced patient safety, and increased job satisfaction among healthcare providers.

According to Reeves (2020), interdisciplinary collaboration in healthcare settings significantly reduces patient morbidity and mortality rates. When healthcare professionals, including doctors, nurses, pharmacists, and other allied health workers, work together effectively, they are able to develop comprehensive care plans that address all aspects of a patient's health. This collaborative approach ensures that all team members contribute their expertise, leading to more accurate diagnoses,

effective treatment plans, and timely interventions. Reeves claim may appear somewhat broad, as while collaboration is correlated with reduced morbidity and mortality, causality can also be influenced by other factors such as hospital resources, leadership culture, and staffing ratios. Moreover, without specifying the research design, whether randomized controlled trial, meta-analysis, or case study, the strength of the evidence is difficult to fully gauge. Nevertheless, Reeves' assertion underscores the critical role of teamwork in producing holistic, patient-centered care.

Moreover, collaboration among healthcare professionals enhances patient safety. For example, a study by Zwarenstein (2019) highlights that when healthcare teams engage in effective communication and collaborate closely, the likelihood of medical errors is reduced. This is particularly important in complex cases where multiple healthcare providers are involved in a patient's care. Clear communication and coordination help to ensure that all team members are aware of the patient's condition, treatment plan, and any potential risks. This reduces the chances of errors such as medication mix-ups or miscommunication about patient allergies, ultimately leading to safer healthcare delivery. This perspective aligns with research on the use of checklists and handover protocols in preventing adverse events. However, while the emphasis on communication is valid, it may underplay other structural issues that contribute to medical errors, such as systemic workload pressures, poor technology integration, or policy gaps. Nonetheless, the study serves as a vital reminder that collaborative communication reduces risks, while also emphasizing that addressing systemic constraints is equally important.

According to West and Lyubovnikova (2021), healthcare professionals who work in collaborative environments report higher levels of job satisfaction and a greater sense of professional fulfillment. When healthcare providers feel that their contributions are valued and that they are part of a supportive team, they are more likely to experience job satisfaction and less likely to experience burnout. This is crucial in the current healthcare landscape, where burnout among healthcare professionals is a significant concern, particularly in the wake of the COVID-19 pandemic. This argument persuasively links collaboration, morale, and workforce retention, highlighting an often-overlooked dimension of healthcare delivery with less attention

to direct patient outcomes. While job satisfaction is undeniably important, it must also translate into measurable improvements in patient safety, quality of care, and efficiency. Nonetheless, the study makes a valuable contribution by addressing workforce sustainability, though it should ideally be paired with patient-centered outcome studies for a more comprehensive understanding of collaboration in healthcare.

Healthcare professionals who work in collaborative teams have the opportunity to learn from their colleagues, share knowledge, and develop new skills. A study by Goldman et al. (2022) found that collaborative practice environments encourage healthcare providers to engage in lifelong learning and professional development, which in turn improves the quality of care they provide. This culture of continuous learning is essential in the ever-evolving field of healthcare, where new treatments, technologies, and best practices are constantly emerging. While collaborative environments do encourage learning, institutional and hierarchical barriers such as the doctor's dominance in decision-making may limit equitable knowledge exchange. In this sense, the study risks idealizing collaboration without adequately accounting for such real-world power dynamics.

The positive impact of collaboration on healthcare outcomes is also reflected in the increased efficiency of healthcare delivery. When healthcare professionals collaborate effectively, they are able to streamline processes, reduce duplication of efforts, and optimize the use of resources. A study by Lingard et al. (2023) demonstrates that collaborative healthcare teams are more efficient in their operations, leading to reduced wait times for patients, shorter hospital stays, and more timely access to care. This not only improves the patient experience but also reduces the overall cost of healthcare delivery. Lutfiyya (2020) maintained that patients who perceive their healthcare providers as working together as a team are more likely to report higher levels of satisfaction with their care. This is because collaborative care teams are better able to address patients' needs, answer their questions, and provide holistic care that considers the patient's physical, emotional, and social well-being. However, these efficiency gains may not be uniformly realized across all healthcare settings. In resource-limited environments, particularly in low-

and middle-income countries, infrastructural and systemic constraints could limit the extent to which collaboration translates into tangible efficiency improvements. This raises questions about the universality of their findings. Nonetheless, the study offers important evidence that collaboration is not only clinically beneficial but also economically advantageous, strengthening the case for its adoption in diverse healthcare contexts.

Umezulike, Osuala, and Azuonwu (2024) found that multidisciplinary collaboration in Federal Medical Center Onitsha was perceived as significantly improving the quality of patient care, despite barriers such as communication gaps. According to Adebukola, Ajibola, and Abike (2024), collaboration between physicians and pharmacists in Ogun State improved patient medication management, with respondents affirming that teamwork reduced errors and enhanced treatment outcomes. Bamigboye, Taiwo, Adegoke, and Adeleke (2025) reported that 96.7% of healthcare professionals in UNIOSUN Teaching Hospital believed interprofessional collaboration positively influenced the efficiency and efficacy of patient care, particularly in surgical units. The complexity of healthcare delivery in the modern world necessitates a collaborative approach that leverages the expertise of various professionals within the healthcare system.

Empirical Review

This section presents a review of empirical studies that have investigated the relationship between collaboration among healthcare professionals and the effectiveness of healthcare delivery. By examining findings from diverse hospital settings and healthcare systems, the review highlights patterns, outcomes, and challenges associated with inter-professional collaboration. These studies provide evidence-based insights into how teamwork, communication, and role clarity among healthcare workers influence patient care quality, efficiency, and satisfaction.

Ahmed & Hassan (2024) examined the role of technology in facilitating healthcare professional collaboration in specialist hospitals across the United Arab Emirates. The research employed a quasi-experimental research design informed by the Unified Theory of Technology Acceptance. A sample of 312 healthcare professionals

was selected through multi-stage random sampling, representing diverse specialties and technological backgrounds. The researchers utilised a comprehensive data collection approach, including standardised questionnaires, technological performance assessments, and structured interviews. Advanced statistical techniques, including path analysis and thematic content analysis, were employed to analyse the collected data. The study revealed significant positive correlations between technological interventions and collaborative effectiveness. Artificial intelligence-powered communication platforms and integrated electronic health record systems emerged as particularly transformative tools. However, the research also highlighted critical challenges, including data privacy concerns and varying technological adoption rates across professional groups.

Mbeki and Wilson (2024) investigated collaborative practice models among healthcare professionals in resource-constrained settings: A case study of rural South African hospitals. The study was set in five rural district hospitals in Eastern Cape Province, South Africa. The theoretical framework was based on Adaptive Leadership Theory. The researchers employed a case study design with embedded mixed methods. Their sample included 183 healthcare professionals and 28 hospital administrators selected through maximum variation sampling. Data collection methods comprised direct observation of collaborative interactions (204 hours), semi-structured interviews, and document analysis of hospital policies. Analysis involved quantitative coding of observational data and interpretative phenomenological analysis of interviews. The findings revealed that 67% of collaborative interactions were ad hoc rather than structured, with collaboration being most frequent during crisis management (89% of crisis events triggered multi-professional response). Resource constraints forced innovative collaborative arrangements that transcended traditional professional boundaries. The researchers concluded that collaboration in resource-constrained settings evolved unique characteristics that prioritised pragmatic problem-solving over formal interprofessional protocols. Albeit, a gap noted was the limited exploration of how these adaptive collaborative practices influenced long-term professional identity development.

Bakare and Johnson (2024) examined collaborative care teams and management of chronic conditions. The study was conducted in 24 integrated care clinics specialising in diabetes management across the United Kingdom. The theoretical framework utilised was the Chronic Care Model. The researchers used a prospective longitudinal design with matched controls. Their sample included 1,748 patients with type 2 diabetes and 196 healthcare professionals selected through propensity score matching between collaborative and standard care settings. Data collection methods included glycaemic control measures, healthcare utilisation metrics, patient-reported outcome measures, and team collaboration assessments. Analysis utilised generalised estimating equations and growth curve modelling. The findings showed that patients managed by highly collaborative teams had significantly better glycaemic control (mean HbA1c difference of 0.8%), fewer emergency department visits (IRR 0.67, 95% CI 0.58-0.77), and higher medication adherence (78% vs 62%). The researchers concluded that collaborative care approaches for chronic condition management led to more sustainable health improvements through better care coordination and patient engagement. A gap noted was the limited investigation of how different professional combinations within teams influenced outcomes.

Nguyen and Awofeso (2024) investigated “Professional stereotyping as a barrier to effective collaboration: An intervention study among healthcare students”. The study was conducted at 3 medical universities in Vietnam. The researchers employed Contact Theory as their theoretical framework. They used a quasi-experimental pre-post design with control groups. The sample consisted of 412 healthcare students (medicine, nursing, pharmacy, and allied health) selected through cluster sampling of intact educational cohorts. Data collection involved the Student Stereotypes Rating Questionnaire, Readiness for Interprofessional Learning Scale, and behavioural observations during simulated collaborative scenarios. Analysis utilised repeated measures ANOVA and mediation analysis. The findings showed that negative professional stereotypes were prevalent among healthcare students (87% held at least one negative stereotype about another profession). These stereotypes significantly predicted poor collaborative behaviours in simulated scenarios ($\beta = -0.42$, $p < 0.001$). Structured interprofessional education interventions reduced stereotype endorsement by 37% compared to control groups. The researchers concluded that professional

stereotyping formed early in educational pathways creating persistent barriers to collaboration that required upstream educational interventions. A gap identified was the limited follow-up to determine whether stereotype reduction persisted into professional practice.

Musa and Ekwueme (2024) investigated “Artificial intelligence decision support systems and interprofessional collaboration in specialist care: A pilot implementation in Kogi State”. The research was conducted in a hospital in Kogi Central focusing on diabetes management teams. The researchers applied the Socio-Technical Systems Theory as their theoretical framework. They employed a pre-post intervention design with mixed methods. The sample comprised 68 healthcare professionals (physicians, nurses, pharmacists, and laboratory technicians) selected through purposive sampling of diabetes care teams. Data collection methods included the Interprofessional Collaboration Assessment Scale, clinical decision quality measures, workflow timing studies, and reflective interviews. Analysis involved paired comparison tests and thematic analysis. The study found that AI-based decision support tools increased cross-disciplinary consultation rates (by 47%) and reduced decision-making time (by 35%) while maintaining quality. The technology served as a “collaboration catalyst” by providing a common information platform. However, professional tensions emerged around decision authority and accountability. The researchers concluded that AI-based technologies created new collaborative dynamics that required careful attention to professional roles and decision-making protocols. A gap identified was the limited long-term assessment of how such technologies might transform professional identities and relationships over time.

Kamau & Mutungi (2023) conducted a comprehensive examination of technological interventions in healthcare professional interactions across multiple specialist hospitals in Kenya employing a descriptive correlational research design informed by the Technology Acceptance Model theoretical framework. The researchers selected a sample of 245 healthcare professionals through purposive sampling, ensuring representation from various specialties and technological proficiency levels. Data collection relied on structured online surveys, semi-structured interviews, and technological performance metrics. Advanced statistical techniques, including

structural equation modelling and thematic analysis, were employed to analyse the collected data. Key findings demonstrated a positive correlation between technological interventions and collaborative effectiveness.

Particularly noteworthy was the impact of integrated electronic health record systems and telecommunication platforms in facilitating seamless interprofessional communication. The study identified significant barriers, including technological literacy gaps and infrastructure limitations, which hindered full collaborative potential. The research made substantial contributions by providing empirical evidence of technology's transformative role in healthcare collaboration, particularly in resource-constrained settings. However, the study's geographical limitation to Kenyan healthcare systems suggested the need for comparative international research.

Ogundipe (2023) investigated the barriers to effective healthcare professional collaboration in Rural Settings. This exploratory qualitative study was conducted in rural healthcare centres in North-Central Nigeria. Grounded in the organisational behaviour theory, the research employed a phenomenological approach with purposive sampling. Thirty-two healthcare professionals participated through in-depth interviews and focus group discussions. Findings revealed that significant barriers to collaboration were identified, including resource constraints, cultural differences, professional territoriality, and communication challenges. The study revealed that rural healthcare settings experience more pronounced collaborative difficulties compared to urban environments. While providing rich qualitative insights, the research was limited by its narrow geographical representation and potential participant selection bias.

Yoshida and Kumar (2023) studied temporal patterns of healthcare professional collaboration: A longitudinal analysis of electronic health record interactions. The research setting comprised a network of 12 hospitals in Japan. The researchers employed Temporal Network Theory as their theoretical framework. They used a longitudinal observational design spanning 24 months. The sample included interaction data from 2,870 healthcare professionals extracted through electronic health record timestamps. Data collection involved automated extraction of

collaboration instances from electronic health record systems, categorised by professional type, time, and clinical context. Analysis utilised temporal network analysis algorithms and time-series statistical methods. The study found that collaboration intensity fluctuated cyclically, with peaks occurring during shift transitions (2.3 times higher than mid-shift periods) and during critical care episodes (3.1 times higher than routine care). Collaboration networks demonstrated resilience despite staff turnover. The researchers concluded that healthcare professional collaboration follows predictable temporal patterns that are influenced by organisational routines and clinical urgency rather than individual preferences. However, a limitation identified was the reliance on electronic interactions, which might not capture informal or undocumented collaborative exchanges.

Oladipo (2023) carried out a study on interprofessional education and collaborative healthcare practices in Lagos State University Teaching Hospital. The research adopted a correlational research design. A sample of 247 healthcare students and professionals was selected through convenience sampling. The findings suggested that structured interprofessional educational interventions could significantly enhance collaborative competencies. However, the study was constrained by its reliance on self-reported data and the potential limitations of a convenience sampling approach.

Alvarez et al. (2023) studied the impact of nurse-physician collaboration on hospital-acquired infections. The research setting comprised 18 medical-surgical units across 6 hospitals in Spain. The researchers applied the Synergy Model for Patient Care as their theoretical framework. They employed a prospective cohort design. The sample included 3,217 hospitalised patients and 412 healthcare professionals (nurses and physicians) selected through consecutive sampling. Data collection involved the Nurse-Physician Collaboration Scale, hospital infection surveillance data, and structured observation of collaborative practices. Analysis included multivariate logistic regression and mediation analysis. The study found that units with the highest collaboration quartile had 47% lower rates of hospital-acquired infections compared to the lowest quartile (adjusted OR 0.53, 95% CI 0.41-0.68). The effect was particularly pronounced for central line-associated bloodstream infections and

ventilator-associated pneumonia. The researchers concluded that nurse-physician collaboration directly influenced adherence to infection prevention protocols and facilitated early intervention for patients showing early signs of infection.

A limitation was the inability to control for all potential confounding variables in non-randomised Udo and Peterson (2023) examined barriers to interprofessional collaboration in primary healthcare: Perspectives from low and middle-income countries. The research settings included 31 primary healthcare facilities across Kenya, Bangladesh, and Peru. The theoretical framework was based on the Capability, Opportunity, Motivation-Behaviour (COM-B) model. The researchers utilised a descriptive qualitative design. Their sample comprised 126 primary healthcare professionals and 45 health system administrators selected through maximum variation sampling. Data collection methods included semi-structured interviews, focus group discussions, and key informant interviews. Analysis was performed using thematic content analysis with cross-country comparisons. The study found that resource constraints created unique barriers in low and middle-income countries, including severe workforce shortages (making collaboration time-intensive), high staff turnover (disrupting team development), and absence of basic communication infrastructure. Power disparities were exacerbated by gender norms and traditional healing integration challenges. The researchers concluded that collaboration barriers in resource-constrained settings were fundamentally different from high-income contexts, requiring contextually appropriate interventions. A limitation was the cross-sectional nature of the study, which couldn't capture how barriers evolved over time as health systems developed.

Jimoh and Smith (2023) researched "Electronic health records and collaborative care: Implementation experience in Nigerian specialist hospitals". The study settings comprised all 3 specialist hospitals in Lagos State. The theoretical framework was based on the Clinical Adoption Framework. The researchers used a longitudinal mixed-methods design. Their sample included 321 healthcare professionals selected through stratified random sampling across all hospitals implementing electronic health records. Data collection involved system interaction logs, the Healthcare Team Vitality Index before and after implementation, and longitudinal interviews at

3 timepoints over 18 months. Analysis utilised growth curve modelling and longitudinal qualitative analysis methods. The findings revealed that electronic health record implementation initially decreased collaboration scores (by 23% at 3 months) before improvements above baseline emerged at 12 months (11% increase). Successful implementation sites demonstrated strong leadership support, adequate training, and customisation to local workflows. The researchers concluded that electronic health records could ultimately enhance collaboration but required significant adaptation periods and contextually appropriate implementation strategies. A limitation noted was the focus on formal documented collaboration without capturing informal collaborative practices.

Theoretical Framework

This study was anchored on Relational Coordination Theory (RCT).

The Relational Coordination Theory (RCT).

Relational Coordination Theory was developed by Jody Hoffer Gittell in the early 2000s. The theory originates from the discipline of organizational studies, specifically within the field of organizational behavior and management science. Rooted in sociology and industrial relations, the theory provides a framework for understanding how communication and relationships support effective coordination of work across interdependent roles.

Relational Coordination Theory posits that work coordination occurs through a network of relationships and communication patterns among participants in a work process. The theory assumes that coordination is more effective when relationships are characterised by shared goals, shared knowledge, and mutual respect.

A central assumption of the theory is that high-quality relationships enable more effective communication, which in turn improves coordination and performance outcomes. The theory assumes that communication should be frequent, timely, accurate, and focused on problem-solving rather than blame (Gittell et al., 2010). Another key assumption is that relational coordination is particularly important in work contexts that are highly interdependent, uncertain, and time-constrained—such

as healthcare delivery—where tasks cannot be fully managed through routine programming or hierarchical structures (Cramm & Nieboer, 2012). The theory also assumes that organisational structures and practices can either support or undermine relational coordination. Specifically, it suggests that certain organisational designs (such as cross-functional teams) and human resource practices (such as shared rewards) strengthen relational coordination.

Relational Coordination Theory provides a valuable framework for understanding how relationships and communication affect organisational performance. Unlike theories that focus solely on structural aspects of coordination, it acknowledges the crucial role of human relationships in effective work processes. The theory has been empirically validated across diverse settings. Research has demonstrated positive associations between relational coordination and outcomes such as quality of care, patient satisfaction, and operational efficiency in healthcare organisations. This empirical support strengthens the theory's credibility and utility. Another strength of the theory is its actionable nature. It offers specific dimensions of relationships and communication that can be measured and improved. Organisations can use the Relational Coordination Survey to assess their current state and identify areas for intervention (Valentine et al., 2015).

Despite its contributions, Relational Coordination Theory has several limitations. The theory emphasises positive aspects of relationships but may underestimate how power dynamics and structural inequalities affect coordination processes. In healthcare settings, persistent professional hierarchies and status differences can constrain relationship development in ways the theory does not fully address.

Research Design

This study employed a descriptive survey research design because it explores the collaboration among healthcare professionals and its impact on effective healthcare delivery in Kogi State specialist Hospital a public hospital. The descriptive design allows for the collection of detailed information about current practices, challenges, and outcomes related to interprofessional collaboration.

Description of the Study Area

The study was conducted in Kogi State Specialist Hospital located at the State headquarters, Lokoja. Kogi State situated in the North-Central region of Nigeria and has a diverse population that relies heavily on public healthcare services. The state shares borders with several other states, including Niger State to the west, Kwara State to the southwest, and Ekiti State to the south. To the east, it borders Anambra State, and to the northeast, it borders Nassarawa State. The state capital, Lokoja serves as a significant cultural and economic center. Kogi State is a vast and diverse region that encompasses various landscapes, including hills, valleys, and rivers, with a total area of approximately 29,833 square kilometers (Kogi State Government, n.d.), The estimated population of Kogi State is around 4.5 million people and the projected population of Lokoja in 2025 is approximately 931,000 people, grown by 45,210 in the last year, which represents a 5.1% annual change. (Lokoja Population 2025, World Population Review, 2025). The State is home to various ethnic groups, including the Igala, Ebira, and Okun people, each with their unique cultural heritage and traditions. This diversity has contributed to the state's rich cultural landscape, with numerous festivals, languages, and customs that reflect the varied backgrounds of its inhabitants.

Brief History of Kogi State Specialist Hospital, Lokoja

Kogi State Specialist Hospital, Lokoja, traces its origins to the Lokoja General Hospital, which was established to serve the healthcare needs of people in Lokoja and its environs. According to facility records, the hospital was formally established on 28 July 2008 as a government-owned public health institution, licensed by the Nigeria Ministry of Health and operating round the clock to provide a range of medical services including surgical, paediatric, obstetric and general clinical care (TheHospitalBook, 2021). Over time, the facility evolved from its initial status as a general hospital into a more advanced healthcare institution to better meet the growing and specialised medical needs of Kogi State's population.

In response to expanding service demands and the strategic aim of improving specialist healthcare delivery within the state, the Kogi State Government embarked on significant renovation and expansion projects in the 2010s. These efforts

culminated in the rebranding of the facility as Kogi State Specialist Hospital, marking its transition into a centre equipped to offer comprehensive specialist medical services. Investments in modernising the hospital have included infrastructural upgrades and the addition of diagnostic and treatment facilities, reflecting the government's commitment to enhancing tertiary healthcare access in the state (TheHospitalBook, 2021).

The selected hospital is a tertiary healthcare institution, which offers a wide range of services, including general medicine, surgery, obstetrics and gynaecology, paediatrics, and specialised care. The hospital serves as a referral centre for smaller healthcare facilities within the state and neighbouring regions. The setting is characterised by a multi-disciplinary team of healthcare professionals, including doctors, nurses, pharmacists, laboratory scientists, and allied health workers. This structured classification highlights the hospital's functional areas, emphasizing its multidisciplinary and integrated healthcare approach and providing an ideal environment to study collaboration dynamics across Departments:

Clinical Departments

These departments focus on direct patient care across multiple specialties:

- i. Emergency & Surgical Care: Accident & Emergency, Anaesthesia, General Surgery, Orthopaedics
- ii. Medical Specialties: Cardiology, Dermatology, Endocrinology, Gastroenterology, Haematology, Neurology, Pulmonology, Renal, Urology
- iii. Maternal & Child Health: Obstetrics & Gynaecology, Paediatrics
- iv. Specialized Care: Oncology, Ophthalmology, Psychiatry, Radiology

Diagnostic Departments

Supporting medical investigations and diagnostics:

- i. Laboratory Services: Laboratory, Pathology
- ii. Imaging Services: Radiology, Imaging

Support Departments

Providing essential non-clinical services:

- i. Pharmacy & Rehabilitation: Pharmacy, Physiotherapy, Occupational Therapy
- ii. Diet & Wellness: Nutrition & Dietetics
- iii. Facility Operations: Health Information Management, Facilities Management, Security, Laundry & Linen
- iv. Social Worker

Administrative Departments

Managing hospital operations and resources:

- i. Hospital Management: Administration, Human Resources
- ii. Financial & Public Relations: Finance, Marketing & Communications.

Population of the Study

The population of this study comprised of all healthcare professionals working in the Kogi State Specialist Hospital Lokoja. These include medical doctors, nurses, pharmacists, laboratory scientists, radiographers and physiotherapists involved in patient care across the various departments which according to the information gathered from the Administrative desk of the hospital are 260 in total numbers. There are eight Wards and seven Clinics where the healthcare professionals operate and meet with patients in this health institution.

The Wards comprised of – Accident and Emergency, Male Medical, Female Medical, Male Surgical, Female Surgical, Maternity Ward, Pediatric Ward and Labour Ward. The Clinics on the other hand are, Eye Clinic, Urology Clinic, Antenatal Clinic, Dental Clinic, Ear, Nose and Throat (ENT), Surgical Out- Patient (SOPD) and MOPD.

Source: Researcher's Field Pre-Survey, 2024

Sample Size and Sampling Technique

Sample Size Determination

Considering the related small size of the study population, it was not too difficult to cover the entire population and therefore, the researcher studied the entire population of study (260).

Sampling Techniques

Given the decision to study the entire population, the Census Method (Complete Enumeration) was adopted as the sampling technique. This approach involves collecting data from every member of the population that fits the inclusion criteria rather than selecting a representative sample. The census method is particularly suitable for this study due to the manageable size of the population and the need for comprehensive and highly accurate data.

Therefore, table 1 shows the total number of healthcare professionals dealing directly with patients across the various department (Wards and Clinics) of the Kogi State Specialist Hospital.

Table 1: The Healthcare Professionals selected for the Study

Healthcare Professionals	Total Population / Sample
Doctors	79
Nurses	<u>121</u>
Pharmacists	10
Pharm Technologist	3
Medical Lab Scientists	37
Optometrics	1
Dental Techologist	2
Physiotherapists	4
Xtray Technologists	1
Social Workers	2
TOTAL	260

Source: Researcher's Field Pre-Survey, 2024

Sources of Data

This study adopted both primary and secondary methods of data collection. The primary source involved the use of survey through questionnaire, while secondary sources involved the use of secondary data such as books, journal articles, reports, newspaper/magazines among internet documented sources that are relevant to the subject matter of this study.

Method of Data Collection

As the study adopted a purely quantitative approach, positivist paradigm is the most appropriate because positivism is grounded in objectivity, emphasizing measurement, statistical analysis, and empirical validation of hypotheses. Since a quantitative study relies on numerical data, such as surveys, structured questionnaire, or hospital performance metrics, the positivist paradigm ensures reliability, generalizability, and a systematic evaluation of collaboration among healthcare professionals and its impact on healthcare delivery. This approach allows the researcher to identify patterns, test relationships, and draw conclusions based on observable and measurable phenomena, making it well-suited for assessing efficiency and effectiveness in a structured healthcare setting.

Instruments of Data Collection

For the instruments of data collection, structured electronic questionnaire was used to elicit information from the respondents in a quantitative manner using the google form. The structured questionnaire gives the respondents several alternative options from which they choose the one closest to their view, or requires the respondent to fill in the actual response related to the question asked. The questionnaire was in sections consisting of the socio-demographic characteristics of the respondents and the substantive issues of the research in tandem with the objectives of the study.

Pilot Study

A pilot study was conducted at the Emergency Ward, Medical Wards and Maternity Wards of Federal Teaching Hospital, Lokoja (FTHL). Thirty (30) copies of the questionnaire (i.e 10 copies per ward) were distributed to the respondents (doctors and nurses only) to provide answers from which validity and reliability of the research instrument was ascertained before the main research survey. The pilot test was necessary because it helped to identify the problems and omissions as well as to check the time spent in responding and for the clarity of language. Testing instruments through the use of pilot tests also improved the reliability, precision and cross-cultural validity of data. Data collected from the pilot study were subjected to

analysis with the use of Cronbach’s Alpha reliability coefficient test and Exploratory Factor Analysis.

Validity and Reliability of Instruments of Data Collection

Validity of Instrument of Data Collection

To prove that the questionnaire (instrument for data collection) was of acceptable standard constructed for the survey research, the instrument was subjected to face validity by two experts in the field of the study, the researcher’s supervisor and two other experts from the Department of Sociology and Economics of the Prince Abubakar Audu University Anyigba. This was aimed at ascertaining that the instrument was free from errors, ambiguity of instruction or wording, time inadequacy and measurability of construct.

Validity was done with the use of Exploratory Factor Analysis (EFA) where the item communality and item loading of 0.7 is considered acceptable. Cohen (2013) states that if inter-item correlation lies within 0.10 and 0.29, then there is a weak correlation for both positive and negative values, and when inter-item correlation lies within 0.30 and 0.49 a medium correlation, and lastly if inter-item correlation is between 0.50 and 1.00 a strong correlation. Moreover, Robinson et al., (1991 cited by Yunusa et al., 2025) recommends that, in an empirical approach and as a rule of thumb, if the score of the item-total correlations is more than 0.50 and the inter-item correlations exceeds 0.30, the construct validity is satisfied.

Table 2: Validity Test Results for the Questionnaire

Measure Name	Number of Items	Item Communality range	Construct Validity (Item total Correlation range)	KMO Measure of Variable Adequacy
The prevalence of collaboration among healthcare professionals in Kogi State Specialist	5	0.71 - 0.82	0.72 - 0.83	0.88

Hospital (KSSH), Lokoja.				
The effects of collaboration among healthcare professionals on healthcare delivery in Kogi State Specialist Hospital (KSSH).	7	0.70 - 0.84	0.70 - 0.81	0.81

Source: Researcher's Computation, 2025

Based on Table 2, five different scales (The prevalence of collaboration among healthcare professionals in KSSH and the effects of collaboration among healthcare professionals affect healthcare delivery in KSSH) were used to assess various aspects of the topic: Collaboration among Healthcare Professionals and Effective Healthcare Delivery in Kogi State Specialist Hospital, Lokoja, Kogi State – Nigeria. For each scale, Exploratory Factor Analysis (EFA) was used where item communality loading was obtained at figures between 0.66 to 0.89, which is considered acceptable (El hajjar, 2018); also, inter-item correlation or item total correlation using bivariate analysis was used to determine construct validity and figures obtained ranged between 0.70 to 0.87 which was also considered acceptable (Robinson et al., 1991). Kaiser-Meyer-Olkin (KMO) was used to measure variable adequacy to which figures range of 0.81 to 0.87 obtained were acceptable (Beaves et al., 2013).

In this study, all the scales have good content validity, which means that the items in the construct accurately represent the content domain of Collaboration among Healthcare Professionals and Effective Healthcare Delivery in Kogi State Specialist Hospital, Lokoja, Kogi State, Nigeria. The instrument also has good construct validity, which means that they accurately measure the underlying constructs or concepts they are intended to measure. Furthermore, the measures have acceptable criterion validity, which means that they are related to external criteria or standards scale for investigating the Collaboration among Healthcare Professionals and Effective Healthcare Delivery in Kogi State Specialist Hospital in Lokoja, Kogi State, Nigeria.

Reliability of the Research Instrument

Reliability refers to the degree to which instrument or scale is consistent in its result overtime (Easterby, 2008). To ascertain the reliability of the instrument, a pilot study was conducted. In this study, 30 participants (different from the participants of the main study) were selected to complement the questionnaire. Cronbach Alpha Co-efficient was used in estimating the reliability which according to Nunnally (1978) is the major way to test internal consistency reliability is Cronbach's alpha. A general accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good level (Hulin et al., 2001; Wim et al, 2008). Cronbach Alpha Co-efficient is chosen as it gives a numerical coefficient of the internal consistency of the variables under study.

Table 3: Reliability Test Results

Measure Name	Number of Items	Cronbach's Alpha
The prevalence of collaboration among healthcare professionals in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State	5	.714
The effects of collaboration among healthcare professionals on healthcare delivery in Kogi State Specialist Hospital (KSSH), Lokoja, Kogi State	7	.822

Source: Researcher's Computation, 2025

Table 3 shows the five different scales (The prevalence of collaboration among healthcare professionals in KSSH and The Effects of collaboration among healthcare professionals affect healthcare delivery in KSSH) that were used to various aspects of the topic: Collaboration among Healthcare Professionals and Effective Healthcare Delivery in Kogi State Specialist Hospital, Lokoja, Kogi State – Nigeria. For each measure, the study conducted a reliability test using Cronbach's Alpha as the reliability coefficient. The table shows the number of items in each measure and the corresponding Cronbach's Alpha value, which indicates the internal consistency of each measure. Note that a Cronbach's Alpha value of 0.70 or higher is generally considered acceptable for research purposes. In this study, all the scales have a

Cronbach's Alpha value greater than 0.70, which suggests that they are reliable scales for assessing the various aspects Collaboration among Healthcare Professionals and Effective Healthcare Delivery in Kogi State Specialist Hospital, Lokoja, Kogi State – Nigeria.

Administration of the Research Instruments

Data collection was carried out over a period of three weeks. The researcher obtained permission from the hospital's management and ethical clearance committee before commencing data collection process. The respondents were recruited through direct contact within their respective departments and shifts. A link to google questionnaire was shared on WhatsApp platforms of the various healthcare professionals of the hospital through the assistance of the various heads of unit who scanned and uploaded the ethical clearance letter alongside the shared google link where the respondents completed and submitted the form.

Methods of Data Analysis

The quantitative data collected from the field were presented and analysed in tables and percentages to give a clearer understanding, enhances and clarifies the data collected from the field using descriptive statistics. It was done using frequency count of each response to the questions and then the percentages were discerned in tables. Meanwhile, hypothesis one of this study was tested using Simple Linear Regression because of the interest in testing the quality of healthcare delivery on the prevalence of collaboration, and the interest in testing the predictive influence on the role of technology on collaboration. Hypotheses 2 was tested using Multiple Linear Regression because it helped in testing the predictive impact of the independent variable (Collaboration) on several dependent variables (each modelled separately).

Ethical Consideration

Ethical considerations are paramount in this study, given its focus on human participants. The researcher adhered to the ethical guidelines of informed consent, confidentiality, and voluntary participation. Before data collection, all participants were provided with an information detailing the purpose of the study, the nature of

their involvement, and their rights as participants. Confidentiality was maintained by anonymising the data and ensuring that no personal information is included in the research reports. Moreover, ethical clearance letter was obtained from the Kogi State Specialist Hospital, Lokoja.

Inclusion and Exclusion Criteria

Inclusion Criteria

This study included only healthcare professionals dealing directly with patient's healthcare in Kogi State Specialist Hospital such as Doctors, Nurses, Pharmacists, Midwives, Opticians, Dentist and Physiotherapists among others.

Exclusion Criteria

This study excluded healthcare workers working in Kogi State Specialist Hospital who have no direct dealings with patient's treatment, such as the hospital administrators, hospital accountants, drivers, security, clerical staff etc.

DATA PRESENTATION AND ANALYSIS

Table 4: Socio-Demographic Characteristics of the Respondents (N = 249)

Variable	Category	Frequency (N=249)	Percentage (%)
Sex	Male	115	46.2
	Female	134	53.8
Age (years)	18-25	9	3.6
	26-35	47	18.9
	36-45	98	39.4
	46-55	60	24.1
	56 and above	35	14.1
Marital Status	Single	47	18.9
	Married	172	69.1
	Separated / Divorced	8	3.2
	Widowed/Widower	22	8.8

Religion	Christianity	144	57.8
	Islam	100	40.2
	Traditional Religion	1	0.4
	Neutral	4	1.6
Ethnic Affiliation	Okun - Yoruba	58	23.3
	Ebira	78	31.3
	Igala	58	23.3
	Bassa	33	13.3
	Others	22	8.8
Job Category	Doctor	75	30.1
	Nurse	117	47.0
	Pharmacist	10	4.0
	Medical Lab /Tech.	35	14.1
	Optometrics	1	0.4
	Dental Tech	1	0.4
	Physiotherapist	4	1.6
	X-ray Tech	1	0.4
	Social Worker	2	0.8
	Pharm Tech	3	1.2
Highest Qualification	F.W.A.C.P / F.M.C	12	4.8
	MBBS	63	25.3
	MSc Nursing	19	7.6
	BNSc	56	22.5
	HND Nursing	35	14.1
	RN or RM	6	2.4
	B. Pharm	8	3.2
	M.Pharm / Pharm.D	2	0.8
	BSc Medical Lab. /Tech	24	9.6
	MMLS/MCLS/ DML	9	3.6
O.D(Dr of Optometric	1	0.4	

	Bachelor Physio (BPT)	4	1.6
	H/ND Dental Tech	3	1.2
	BA /MA Social Work	2	0.8
	Others	5	2.1
Length of Service	Less than 5 years	36	14.5
	5 – 10 years	72	28.9
	11 – 15 years	62	24.9
	16 – 20 years	44	17.7
	More than 20 years	35	14.0

Source: Researcher's Field Survey, 2025

The sex distribution of the respondents from table 4 shows that the male respondents were 115(46.2%) while the remaining 134(53.8%) of the respondents were female. The high figure of female respondents is an indication that we have more females especially nurses in the healthcare institutions particularly in Kogi State Specialist Hospital (KSSH). This is not unconnected to the fact that the role of women as caregivers and nurturers have led to a natural conformity with nursing as a profession. Nursing profession requires empathy, compassion, and a strong desire to care for others, traits that are often associated with women. The healthcare system's need for emotional labour, which involves managing emotions to provide care, also informs more recruitment of women into nursing in the hospitals. Moreover, women are socialized to be more emotionally expressive and attentive to others' needs, making them well-suited and more recruitment for nursing roles in the hospitals.

Age-wise, table 4 reveals that the respondents largely fall within the youthful and middle-aged brackets. Specifically, 9(3.6%) were aged 18–25 years, 47(18.9%) were between 26–35 years, 98(39.4%) were between ages 36–45, 60(24.1%) between 46–55 years and 35(14.1%) were 56 years and above. This youthful workforce implies a dynamic and potentially adaptable health team, particularly open to modern collaborative practices and technological integration. The relative underrepresentation of older staff may limit mentorship and experiential knowledge cross fertilisation that often enhances decision making in clinical settings. However, the age diversity, albeit skewed towards youth, provides a strong foundation for

cultivating enduring interprofessional collaboration practices if properly nurtured in Kogi State Specialist Hospital Lokoja.

The Marital Status of respondents on table 4 shows that 172(69.1%) were married, 47(18.9%) single, while the remaining 30(12%) were either divorced, separated, or widowed. Married healthcare professionals may bring a sense of stability and responsibility that positively influences teamwork and patient interaction. On the other hand, single and younger professionals might offer flexibility and greater availability for interdepartmental collaboration, especially during emergencies and shift-based schedules. The combination of both groups within the workforce creates an environment where varying life experiences and support systems could influence communication, work ethic, and conflict resolution.

Religious Affiliation on table 4 was predominantly Christian 144(57.8%), followed by Islam 100(40.2%) and the remaining minority of 5(2%) are either traditionalist or prefer not to say. This religious plurality reflects the diversity of Kogi State and necessitates religious sensitivity within workplace interactions. As religious beliefs may influence attitudes towards hierarchy, gender roles, and end-of-life decisions in healthcare, an awareness of these backgrounds is crucial in fostering mutual respect and a collaborative spirit. If not well managed, religious diversity could pose subtle tensions in interprofessional discourse, especially in ethically or culturally charged clinical decisions.

The ethnic distribution highlights the multicultural nature of the respondents, with 78(31.3%) identifying as Ebira, 58(23.3%) as Okun-Yoruba, 58(23.3%) as Igala, and 33(13.3%) as Bassa while the remaining 22(8.8%) are of other ethnic extractions across the Nigerian state. These ethnic groups are the major socio-cultural clusters in Kogi State. While such diversity can enrich teamwork by offering varied perspectives and approaches to care, it may also pose challenges in communication, especially where language barriers or ethnic stereotypes exist. Therefore, hospital management must promote cross-cultural competence as part of its staff development programs to ensure ethnicity does not become a barrier to collaboration.

In terms of professional qualifications, the respondents reflect a wide academic and clinical spectrum. For instance, among the Doctors, 12(4.8%) were Consultants, while 63(25.3%) holds an MBBS. Among the Nurses 19(7.6%) held a Master in Nursing Science, 56(22.5%) had a Bachelor in Nursing Science, 35(14.1%) had HND (Double qualification) and 6(2.4%) had either a single qualification as a Registered Nurse or Midwifery (RN and RM). 24(9.6%) either had a BSc in Medical Laboratory or a diplomas certificates as a laboratory Technician. A smaller percentages held qualifications such as B.Pharm 8(3.2%), Bachelor of Physiotherapy 4(1.6%), Radiography, Physiotherapist and other allied health fields were equally represented. This educational diversity is indicative of a multidisciplinary workforce which, ideally, should foster integrated healthcare delivery. However, such diversity also brings with it the challenge of professional boundaries, hierarchy, and possible conflict, especially if role clarity is lacking. The presence of both high and mid-level professionals necessitates clearly defined scopes of practice, mutual respect, and institutional support to encourage effective teamwork.

On the job category of respondents, table 4 reveals that nurses constitute the largest professional group 117(47%), followed by Doctors 75(30.1%) and then the medical laboratory scientists/Technicians with 35(14.1%), Pharmacists 10(4%), Physiotherapists 4(1.6%), Pharm Tech 3(1.2%), Social Worker 2(0.8%) and a single respondent of Optometrists, Dental Technician and X-ray technicians 1(0.4%) each, were also represented. This distribution confirms the multidisciplinary nature of the hospital environment and is significant for collaborative healthcare delivery. The predominance of nurses suggests they play a critical role in both initiating and sustaining collaborative efforts. Their involvement in nearly every stage of patient care position them as the fulcrum of teamwork. However, this also raises concerns about workload distribution and power dynamics, especially if their roles are undervalued by other professionals. Doctors, although fewer in number, may still exert considerable hierarchical influence, a phenomenon commonly reported in health systems globally. The balanced mix of clinical, diagnostic, and rehabilitative professionals is ideal for integrated care but requires structured communication frameworks to harmonise professional input and avoid conflict based on role.

In terms of length of service on table 4, the workforce appears to be fairly experienced: 35(14%) of the respondents have over 20 years of service, 44(17.7%) have between 16–20 years, and 62(24.9%) fall within the 11–15 years bracket. This indicates that more than half of the respondents have over a decade of clinical experience. Meanwhile, 72(28.9%) have served 5–10 years, and 36(14.5%) have less than five years of experience.

This spread of experience has vital implications for collaboration. The strong presence of long-serving staff enhances institutional memory and professional maturity, which are assets in collaborative decision-making and mentoring. Conversely, newer employees, and in particular those with under five years of service may be more inclined to embrace interprofessional models and technological tools that support teamwork. However, they might also encounter challenges in asserting their voices in multidisciplinary teams dominated by longer-serving professionals. Hence, deliberate onboarding and team integration strategies are needed to bridge experience gaps and promote inclusive collaboration.

Table 5: Prevalence of Healthcare Professionals’ Collaboration in KSSH

Item	Category	Frequency (N= 249)	Percentage (%)
I frequently collaborate with other healthcare professionals in the course of my work.	Strongly Agreed	164	65.9
	Agreed	83	33.3
	Neutral	1	0.4
	Strongly Disagreed	1	0.4
I regularly participate in joint decision-making, share patient information and care plans with other professionals to enhance care delivery.	Strongly Agreed	101	40.6
	Agreed	117	47
	Neutral	10	4.0
	Disagreed	17	6.8
	Strongly Disagreed	4	1.6
There is a strong culture of teamwork among healthcare professionals in our health	Strongly Agreed	99	39.8
	Agreed	108	43.4
	Neutral	32	12.8

facility.	Disagreed	9	3.6
	Strongly Disagreed	1	0.4
How are collaborative decisions usually made in your hospital?	Hierarchical (Doctor led)	171	68.6
	Shared equally	34	13.7
	Based on Case-by-Case	43	17.3
	I don't know	1	0.4
What mode of communication are mostly used for collaboration in your facility?	Verbal (Face to Face)	17	6.8
	(EMR) Elect Med Record	141	56.6
	Written Notes	88	35.4
	Phone calls / WhatsApp	3	1.2

Source: Researcher's Field Survey, 2025

The data from Table 5 indicate a generally high prevalence of interprofessional collaboration among healthcare professionals at KSSH. A significant 164(65.9%) of the respondents strongly agreed, and another 83(33.3%) agreed that they frequently collaborate with other healthcare professionals in the course of their work. This means that over 99% of the healthcare workforce actively engages in collaborative practices. This level of collaboration is encouraging and suggests that the hospital has a functioning culture of teamwork, which is a critical pillar in effective healthcare delivery. However, the 1(0.4%) neutral and 1(0.4%) strongly disagreed raises concerns about either they are under-engaged, isolated or in departments lacking collaborative structures.

On the issue of joint decision making and information sharing, which is a more specific indicator of meaningful collaboration, 117(47%) agreed and 101(40.6%) strongly agreed that they regularly participate in these activities. This suggests that about 87% of respondents are involved in shared planning of patient care, pointing to the adoption of interprofessional practice models. Yet, the fact that 10(4%) remained neutral and 21(8.4%) disagreed or strongly disagreed reflects the presence of partial or fragmented collaboration—possibly shaped by professional hierarchies or role ambiguity.

When asked whether a strong culture of teamwork exists within the facility, 108(43.4%) agreed and 99(39.8%) strongly agreed, accounting for 83% of

respondents. This aligns with previous findings and reinforces that teamwork is not only operational but also institutionalised as part of the hospital's work ethos. However, with 32(12.8%) being neutral and 10(4%) disagreeing and strongly disagreeing, it becomes evident that some professionals may still perceive teamwork as inconsistent or constrained by structural or interpersonal barriers. Delving into the modes of decision-making, the data reveal that a dominant 171(68.6%) of respondents stated that collaborative decisions are hierarchical (doctor-led), while 34(13.7%) claimed decisions are shared equally among professionals. Another 43(17.3%) noted that decisions are made based on case-by-case needs, and 1(0.4%) admitted uncertainty. The implication here is substantial, despite a high level of declared collaboration, the structure of decision-making remains largely top to bottom. This hierarchical model could hinder the full realisation of interprofessional synergy, especially in critical care situations where timely input from nurses, pharmacists, or lab scientists could alter outcomes.

Regarding the preferred modes of communication for collaboration, the highest response went to electronic medical records (EMR) with 141(56.6%), followed by written notes and documentation with 88(35.4%), verbal face-to-face at 17(6.8%) and lastly phone calls/WhatsApp 3(1.2%). This distribution highlights a shift towards digitalized and structured communication platforms in clinical practice thus aligning modern trend for accurate record keeping and access. The gradual shift from the use of written notes and documentation suggests that digital infrastructure is being utilized and encouraged. The underuse of face-to-face communication could be less preferred due to the time constraints and physical distance in clinical environment even though it reduces opportunities for empathy, immediacy, and team bonding, elements that are crucial in healthcare teamwork. The turndown on phone calls/WhatsApp may have implication for confidentiality and professionalism or stem from institutional or health policy that discourages unsecured platforms.

The implications of these findings are that the high prevalence of reported collaboration across the board strongly supports the premise of this study that healthcare professionals in KSSH are aware of and engage in collaborative practices. However, the data also reveal structural challenges; the fact that collaboration is

largely doctor-led indicates persistent professional hierarchies that may limit the contributions of other health workers, particularly nurses, social workers, or allied health professionals.

The widespread use of electronic medical records (EMR) technology and written notes for communication, while efficient, might lack the real-time depth required for rapid clinical decision-making in emergencies. On the contrary, real-time communication channels as face-to-face interaction and phone call / WhatsApp messaging offers some level of intimacy and responsiveness needed in critical circumstances of emergencies and case deliberation. Furthermore, the variation in levels of agreement across all items, particularly the significant minority who feel neutral or excluded, suggests that while collaboration is institutionally present, it is not yet uniformly practiced or perceived across all job categories or levels of seniority. This has implications for patient safety, staff morale, and the sustainability of collaborative models.

Table 6: Effects of Collaboration Among Healthcare Professionals on Healthcare Delivery in Kogi State Specialist Hospital (KSSH), Lokoja

Item	Category	Frequency (N= 249)	Percentage (%)
Collaboration improves the efficiency of healthcare service delivery.	Strongly Agreed	183	73.5
	Agreed	64	25.7
	Neutral	1	0.4
	Disagreed	1	0.4
Interprofessional teamwork help reduce patient wait time and hospital stay.	Strongly Agreed	131	52.6
	Agreed	109	43.8
	Neutral	3	1.2
	Disagreed	6	2.4
Interprofessional collaboration helps in reducing medical errors.	Strongly Agreed	140	56.2
	Agreed	107	43
	Neutral	2	0.8
Team-based care enhances	Strongly Agreed	134	53.8

patient satisfaction	Agreed	110	44.2
	Neutral	3	1.2
	Disagreed	2	0.8
Collaborative practice increases patient access to comprehensive care.	Strongly Agreed	140	56.2
	Agreed	99	39.8
	Neutral	5	2.0
	Disagreed	5	2.0
Effective collaboration leads to faster diagnosis and treatment of patients.	Strongly Agreed	137	55
	Agreed	99	39.8
	Neutral	5	2.0
	Disagreed	8	3.2
Interprofessional collaboration improves the quality of patient care and lead to better health outcomes.	Strongly Agreed	143	57.4
	Agreed	104	41.8
	Neutral	2	0.8

Source: Researcher's Field Survey, 2025

The responses from healthcare professionals in Table 6 show an overwhelming consensus on the positive effects of collaboration on healthcare delivery. A striking 183(73.5%) strongly agreed and 64(25.7%) agreed that collaboration improves the efficiency of service delivery, with only 1(0.4%) disagreeing and 1(0.4%) remaining neutral. This highlights a strong belief among staff that effective teamwork contributes to smoother operations, reduced redundancy, and streamlined processes. In a resource-constrained environment like KSSH, this perception is crucial, as collaboration may mitigate systemic inefficiencies and help compensate for infrastructural or staffing limitations.

Furthermore, the data shows an agreement that interprofessional teamwork reduces patient wait time and hospital stay, with 131(52.6%) strongly agreeing and 109(43.8%) agreeing, 3(1.2%) neutral and 6(2.4%) disagreement. This consensus points to the critical role of synergy among professionals in speeding up diagnosis, treatment initiation, and discharge procedures. In real terms, patients are likely to

benefit from timely interventions when professionals work in concert, rather than in isolated silos.

When asked about the role of collaboration in reducing medical errors, 140(56.2%) strongly agreed and 107(43%) agreed, whereas 2(0.8%) were neutral. The majority opinion confirms the widely held view that multidisciplinary checks, peer consultations, and information sharing help catch potential errors before they affect patients. Regarding patient satisfaction, an above average 134(53.8%) strongly agreed closely followed by 110(44.2%) agreement that team-based care enhances satisfaction. This underscores the emotional and psychological benefits patients derive from coordinated care: it builds confidence in the system, enhances communication, and fosters a sense of being holistically cared for. Only a negligible percentage of 2(0.8%) disagreed and 3(1.2%) neutral indicating minimal resistance to this notion among the staff. A similar sentiment was expressed about patient access to comprehensive care, with 140(56.2%) strongly agreeing and 99(39.8%) agreeing, affirming that collaborative care improves the breadth and depth of services delivered. The minority who were neutral 5(2%) or disagreed 5(2%) may work in departments with less interprofessional engagement or experience fragmented collaboration in practice. The statement that effective collaboration leads to faster diagnosis and treatment was supported, with 137(55%) strongly agreeing and 99(39.8%) agreeing, amounting to almost 95% endorsement. This is critical because diagnostic delays are a major contributor to poor outcomes in public hospitals. Collaboration reduces referral lags and promotes timely intervention by facilitating integrated care pathways. Additionally, the statement that interprofessional collaboration improves the quality of patient care and lead to better health outcome was acknowledged as beneficial by most respondents: 143(57.4%) strongly agreed and 104(41.8%) agreed while 2(0.8%) were neutral.

Implications of these findings for Healthcare Delivery at KSSH is that the overwhelmingly positive responses across all items affirm that collaboration is not merely a procedural necessity but a vital enabler of quality care. The fact that over three-quarters of respondents consistently endorsed collaboration's positive impact

on efficiency, error reduction, patient satisfaction, and timeliness of care illustrates that interprofessional practice is both recognised and valued within the hospital.

HYPOTHESIS 1

H₀: There is no significant relationship between the prevalence of collaboration among healthcare professionals and the quality of healthcare delivery in Kogi State Specialist Hospital (KSSH).

H₁: There is a significant relationship between the prevalence of collaboration among healthcare professionals and the quality of healthcare delivery in Kogi State Specialist Hospital (KSSH).

Test Statistics: To evaluate this hypothesis, this study employed simple linear regression because of the interest in testing the quality of healthcare delivery on the prevalence of collaboration.

Decision Rule: If p-value is less than 0.05, we reject the null hypothesis and accept the alternative hypothesis why if P-value is greater 0.05 we accept the null hypothesis and reject the alternative hypothesis.

Table 7: Summary of Simple Linear Regression on the Prevalence of Collaboration and Quality of Healthcare Delivery in KSSH.

Model	Unstandardised Coefficients (B)	Standard Error	Standardised Coefficients (Beta)	t-Statistics	Sig. (p-value)
(Constant)	2.045	0.214	nan	9.556	0.0
Prevalence of Collaboration	0.781	0.068	0.632	11.485	0.0

Decision Making: Since the P-value which is 0.00 is less than 0.05, We reject the null hypothesis and accept the alternative hypothesis. This means that there is a significant relationship between the prevalence of collaboration among healthcare professionals and the quality of healthcare delivery at KSSH. Hence collaboration leads to improvement in the quality of health care delivery in KSSH.

Conclusion: There is a significant relationship between the prevalence of collaboration among healthcare professionals and the quality of healthcare delivery at KSSH. This shows that collaboration among healthcare professionals is significantly related to the quality of healthcare delivery at KSSH; meaning that fostering a collaborative culture within the hospital can have a positive impact on improving patient care, reducing errors, and increasing efficiency.

HYPOTHESIS 2

H₀: Collaboration among healthcare professionals does not significantly affect healthcare service delivery, patient length of stay, medical error rates, and patient satisfaction scores in Kogi State Specialist Hospital (KSSH).

H₁: Collaboration among healthcare professionals significantly affect healthcare service delivery, patient length of stay, medical error rates, and patient satisfaction scores in Kogi State Specialist Hospital (KSSH).

Test Statistics: To evaluate the above hypothesis, this study employed the multiple linear regression because it helped in testing the predictive impact of the independent variable (Collaboration) on several dependent variables (each modelled separately).

Decision Rule: If p-value is less than 0.05, we reject the null hypothesis and accept the alternative hypothesis why if P-value is greater 0.05 we accept the null hypothesis and reject the alternative hypothesis.

Table 8: Summary of Multiple Linear Regression Results of the Collaboration and Healthcare Delivery Outcomes in Kogi State Specialist Hospital (KSSH).

Dependent Variable	B (Collaboration)	Std. Error	Beta	T	Sig.
Service Delivery	0.65	0.07	0.6	9.29	0.0
Length of Stay	-0.32	0.11	-0.41	-2.91	0.004
Medical Errors	-0.48	0.1	-0.55	-4.8	0.0
Patient Satisfaction	0.71	0.06	0.68	11.83	0.0

Decision Making: Since all the P-value is less than 0.05, We reject the null hypothesis and accept the alternative hypothesis.

Conclusion/Interpretation: Collaboration among healthcare professionals significantly affects service delivery, patient length of stay, medical error rates, and patient satisfaction at KSSH.

- ✓ Service Delivery: $B = 0.65$, $Beta = 0.60$, $t = 9.29$, $p\text{-value} = 0.000$. The positive coefficient indicates that collaboration improves service delivery, and the significant p-value suggests a robust impact.
- ✓ Length of Stay: $B = -0.32$, $Beta = -0.41$, $t = -2.91$, $p\text{-value} = 0.004$. The negative coefficient indicates that higher levels of collaboration are associated with shorter patient stay. This relationship is statistically significant.
- ✓ Medical Errors: $B = -0.48$, $Beta = -0.55$, $t = -4.80$, $p\text{-value} = 0.000$. The negative coefficient here implies that as collaboration increases, the rate of medical errors decreases, a statistically significant result.
- ✓ Patient Satisfaction: $B = 0.71$, $Beta = 0.68$, $t = 11.83$, $p\text{-value} = 0.000$. The positive coefficient indicates that improved collaboration leads to higher patient satisfaction, with the result being statistically significant.

Implications: These results indicate that collaboration of healthcare professionals has a significant positive impact on multiple healthcare outcomes in Kogi State Specialist Hospital Lokoja as it improves service delivery, reduces length of patient stay, lowers medical errors, and increases patient satisfaction.

DISCUSSION OF FINDINGS

The aim of this study was to examine collaboration among healthcare professionals and effective healthcare delivery in Kogi State Specialist Hospital, Lokoja.

The sex distribution of the respondents shows a high figure of female respondents, an indication that we have more females especially nurses in the healthcare institutions particularly in Kogi State Specialist Hospital (KSSH). This is not unconnected to the fact that the role of women as caregivers and nurturers have led to a natural

conformity with nursing as a profession. Nursing profession requires empathy, compassion, and a strong desire to care for others, traits that are often associated with women. The healthcare system's need for emotional labour, which involves managing emotions to provide care, also informs more recruitment of women into nursing in the hospitals. Moreover, women are socialized to be more emotionally expressive and attentive to others' needs, making them well-suited and more recruitment for nursing roles in the hospitals.

The Age bracket reveals that the respondents largely fall within the youthful and middle-aged brackets between 36 and 45 years. This youthful workforce implies a dynamic and potentially adaptable health team, particularly open to modern collaborative practices and technological integration. The relative underrepresentation of older staff may limit mentorship and experiential knowledge cross fertilisation that often enhances decision making in clinical settings. However, the age diversity, albeit skewed towards youth, provides a strong foundation for cultivating enduring interprofessional collaboration practices if properly nurtured in Kogi State Specialist Hospital Lokoja.

The Marital Status of respondents shows that a larger number of respondents were married. Married healthcare professionals may bring a sense of stability and responsibility that positively influences teamwork and patient interaction. The religious plurality reflects the diversity of Kogi State and necessitates religious sensitivity within workplace interactions. The ethnic distribution highlights the multicultural nature of the respondents. In terms of professional qualifications, the respondents reflect a wide academic and clinical spectrum. This educational diversity is indicative of a multidisciplinary workforce which, ideally, should foster integrated healthcare delivery. However, such diversity also brings with it the challenge of professional boundaries, hierarchy, and possible conflict, especially if role clarity is lacking. The presence of both high and mid-level professionals necessitates clearly defined scopes of practice, mutual respect, and institutional support to encourage effective teamwork.

The predominance of nurses suggests they play a critical role in both initiating and sustaining collaborative efforts. Their involvement in nearly every stage of patient

care position them as the fulcrum of teamwork. However, this also raises concerns about workload distribution and power dynamics, especially if their roles are undervalued by other professionals. Doctors, although fewer in number, may still exert considerable hierarchical influence, a phenomenon commonly reported in health systems globally. The balanced mix of clinical, diagnostic, and rehabilitative professionals is ideal for integrated care but requires structured communication frameworks to harmonise professional input and avoid conflict based on role.

The discussion of the findings was done in relation to the study's objectives: assessing the prevalence of collaboration among healthcare professionals, examining its effect on healthcare delivery in Kogi State Specialist Hospital (KSSH), Lokoja. The findings are examined holistically, with a comparative analysis of related literature, culminating in the theoretical interpretation using the relational coordination framework.

The study revealed that collaboration among healthcare professionals at Kogi State Specialist Hospital (KSSH) is highly prevalent, with 78% of respondents reporting that interprofessional interactions are part of their daily routine. This prevalence reflects a maturing hospital culture where teamwork is increasingly valued and applied. More importantly, the data indicate that this collaborative culture is not superficial, as respondents strongly agreed that they engage in joint decision-making, share patient information across departments, and coordinate responsibilities. Such consistent patterns suggest that collaboration is not only encouraged but also practiced across different departments and professional roles.

This finding reflects a growing culture of teamwork and resonates with Chukwu and Nwankwo (2022), who observed that collaborative practices tend to be stronger in high-demand and specialized medical contexts such as emergency units, where complexity of patient management necessitates joint decision-making. Similarly, Adenle (2021) reported that urban health institutions in Nigeria exhibit about 45% higher collaboration rates compared to rural healthcare facilities due to better access to resources, training, and exposure. Yunusa (2024) reported a prevalence of 72% in Nigerian tertiary hospitals, while Reeves et al. (2018) found collaboration rates as high as 85% in developed countries. While many studies were largely conducted in

developed contexts, the present study provides valuable evidence from a resource-constrained Nigerian environment, addressing a key gap identified in the literature. The conceptualisation of collaboration in this study as synergistic interactions to influence patient care (Karam, 2005) is reinforced by the empirical evidence. The consistent affirmation by respondents across departments at KSSH indicates an embedded, though not fully formalised, collaborative culture.

Furthermore, statistical evidence from Hypothesis 1 corroborates this observation, as simple linear regression established a strong positive and significant relationship ($\beta = 0.632$, $p < 0.05$) between the prevalence of collaboration and quality healthcare delivery. This supports the growing recognition globally that integrated care improves health outcomes, particularly when collaborative practices are consistently applied.

These findings substantiate the claims by Sicotte et al. (2019) and Ogundele et al. (2023) that effective collaboration reduces clinical inefficiencies and strengthens continuity of care, especially in fragmented systems like those in many Nigerian public hospitals. Furthermore, the positive effects observed in this study echo the Donabedian Model's emphasis on process as a determinant of healthcare quality, as well as findings from international studies such as Kwame & Fernandez (2022), which showed reduced referral rates and improved efficiency in collaborative Ghanaian primary health centres. Contrastingly, studies such as Okoro (2022) identified uneven collaboration across professional lines, with non-physician roles less integrated a concern that also emerged marginally in this study among respondents who reported occasional professional exclusion.

However, the study also found that collaboration at KSSH is predominantly doctor-led, reflecting hierarchical tendencies. This supports Okeke (2023), who emphasized that approximately 68% of Nigerian healthcare institutions maintain rigid professional demarcations that limit interdisciplinary inclusiveness. Thus, while prevalence is high, inclusivity remains an area requiring policy intervention.

The findings demonstrated that collaboration significantly upscales healthcare delivery outcomes at the KSH. Respondents reported that collaboration not only

enhances the speed and accuracy of service delivery but also shortens patient hospital stay, reduces medical errors, and significantly improves patient satisfaction. These self-reported outcomes are critical in resource-constrained settings like KSSH, where the efficiency of service delivery is often hampered by systemic limitations. The findings imply that even within infrastructural and personnel shortages, coordinated efforts among available professionals can optimise patient care pathways. This is especially relevant in managing chronic conditions, emergencies, and post-operative recovery, where communication across departments determines treatment efficiency and outcome timeliness. Hypothesis 2, results of the multiple linear regression demonstrated that collaboration significantly: Improved service delivery ($\beta = 0.60$), Reduced patient length of stay ($\beta = -0.41$), Decreased medical error rates ($\beta = -0.55$), and Increased patient satisfaction ($\beta = 0.68$), all at $p < 0.05$.

These results align with Zwarenstein (2019), who highlighted that effective interprofessional communication minimizes medical errors and improves patient safety. Similarly, Reeves (2020) and Lingard et al. (2023) established that collaboration enhances diagnostic accuracy, treatment outcomes, and healthcare efficiency. Furthermore, the finding is consistent with Bamigboye et al. (2025), who reported that 96.7% of healthcare professionals in UNIOSUN Teaching Hospital perceived interprofessional collaboration as positively influencing patient care, particularly in surgical units. It also reflects Umezulike, Osuala, and Azuonwu (2024), who found that multidisciplinary collaboration improved service delivery in Federal Medical Center Onitsha, despite communication barriers. Therefore, the results confirm that collaborative practice is a strong determinant of quality, safe, and patient-centered healthcare delivery.

CONCLUSIONS

This study investigated collaboration among healthcare professionals and how it affect healthcare delivery in Kogi State Specialist Hospital (KSSH), Lokoja. The findings have underscored that collaboration is not only prevalent among the hospital workforce but also essential for delivering high-quality, efficient, and patient-centred care. Most healthcare professionals reported participating in routine interprofessional interactions, reflecting a hospital culture that values teamwork and mutual support.

However, the study also uncovered that these collaborative efforts are still predominantly doctor-led, suggesting that entrenched hierarchical structures continue to shape decision-making dynamics. For collaboration to be fully realised, a more balanced and inclusive approach is needed across all professional groups.

The impact of collaboration on healthcare delivery was found to be substantial. Healthcare professionals unanimously affirmed that working together across disciplines improves the speed and quality of service, reduces patients' length of stay, minimises the likelihood of clinical errors, and enhances overall patient satisfaction. These outcomes demonstrate that collaborative healthcare practices are not abstract ideals but practical tools for enhancing institutional performance and patient well-being. In a system where resources are often limited, these efficiencies have far-reaching implications for public health delivery.

RECOMMENDATIONS

Arising from these findings, the study put forward the following recommendations:

- i. The study revealed that although collaboration among healthcare professionals at KSSH is prevalent, it is largely doctor-led, with hierarchical dominance limiting equal participation of other cadres in decision-making. The hospital administrators, State Ministry of Health / Hospitals Management Board, Professional Regulatory Councils and policymakers should institutionalise inclusive collaboration frameworks that transcend professional boundaries, giving equal voice to all healthcare workers in clinical decision-making.
- ii. The study found that collaboration improves healthcare delivery. Therefore, professional Councils/Regulatory Bodies should strengthen collaboration through continuous interprofessional training programmes is essential, particularly those that simulate real-life scenarios and encourage role appreciation across the hospital departments.

SUGGESTIONS FOR FURTHER STUDIES

The following topics are proposed for further studies:

1. An Evaluation of Leadership Influence on Interprofessional Collaboration in Kogi State Public Hospitals
2. Digital Health Readiness and Its Impact on Collaborative Practices in Secondary Healthcare Facilities in Nigeria
3. A Comparative Study of Collaborative Practices between Public and Private Healthcare Institutions in Kogi State.

AUTHORS' CONTRIBUTION

Samuel Soji **AKINWALE** drafted the manuscript and carried out the entire research work

Prof. Julius Olugbenga **OWOYEMI** supervised the research work

Edime **YUNUSA** proofread the manuscript and analyzed the data

CONFLICT OF INTEREST

The authors declared no conflict of interest regarding this research paper

REFERENCES

1. Abdullahi, M., Ahmad, R., Usman, S., & Davies, J. (2020). Digital health platforms and interprofessional collaboration: Implementation challenges in Nigerian specialist hospitals. *Journal of Health Informatics in Developing Countries*, 14(2), 45-63.
2. Abramson, J. S., & Mizrahi, T. (2021). Understanding collaboration between social workers and physicians: Application of a typology. *Social Work in Healthcare*, 37(2), 71-100.
3. Adams, J., & Williams, S. (2022). Collaborative leadership and its impact on patient outcomes in public hospitals. *Journal of Healthcare Management*, 67(2), 145-160.

4. Adebayo, F. (2022). Impact of collaborative practices on maternal and child health services in Nigerian public hospitals. *African Journal of Reproductive Health*, 26(3), 115-130.
5. Adebayo, O. A., Jimoh, R. O., & Suleiman, M. (2024). Collaborative practices and patient safety in Nigerian tertiary hospitals. *Journal of Healthcare Management*, 45(2), 112-128.
6. Adebukola, S. F., Ajibola, S. S., & Abike, S. K. (2024). Evaluation of collaborative care for patient medication management between pharmacists and clinicians in healthcare institutions in Ogun State, Nigeria. *West African Journal of Pharmacy*, 35(1), 128–140. <https://www.wapcpjournal.org.ng/index.php/home/article/view/344>
7. Adekunle, A. O., & Adeolu, T. (2022). Job satisfaction and collaboration among healthcare professionals in Nigeria. *Journal of Healthcare Leadership*, 14, 1-9.
8. Adenle, A. A. (2020). Healthcare collaboration dynamics in Nigeria. *Journal of Healthcare Management*, 45(3), 221-237.
9. Adeolu, T., & Oladapo, O. T. (2022). Communication and collaboration among healthcare professionals in Nigeria. *Journal of Communication in Healthcare*, 15(1), 1-8.
10. Alvarez, C., Rodriguez, M., Garcia, S., & Fernandez, J. (2023). The impact of nurse-physician collaboration on hospital-acquired infections: A prospective cohort study. *International Journal of Nursing Studies*, 138, 104274.
11. Asuzu, M. C. (2023). The necessity for a health system reform in Nigeria. *Journal of Community Medicine & Primary Health Care*, 16(1), 1-3.
12. Baggs, J. G., & Schmitt, R. (2020). Collaboration between nurses and physicians. *Journal of Nursing Scholarship*, 20, 145-149.
13. Bakare, O., & Johnson, P. (2024). Collaborative care teams and management of chronic conditions: Outcomes from integrated care models. *BMJ Quality & Safety*, 33(1), 17-29.

14. Bamigboye, T. L., Taiwo, O. A., Adegoke, J. I., & Adeleke, E. A. (2025). Perceived impact of inter-professional collaboration on the quality of care in surgical units among healthcare professionals in UNIOSUN Teaching Hospital. *Fountain Journal of Basic Medical and Health Sciences*, 1(1). [https:// fountainjournals.com /index.php/FUJBMHES/article/view/654](https://fountainjournals.com/index.php/FUJBMHES/article/view/654)
15. Bello, S., Ajayi, D. T., & Asuzu, M. C. (2018). Determinants of job satisfaction among physicians in public hospitals in Calabar, Nigeria. *Journal of Community Medicine and Primary Health Care*, 30(1), 19-33.
16. Bolton, R., Logan, C., & Gittell, J. H. (2021). Revisiting relational coordination: A systematic review. *The Journal of Applied Behavioral Science*, 57(3), 290-322.
17. Bond, B. J., & Naughton, D. (2011). The role of emotions in inter-organisational collaboration: Developing the relational coordination perspective. *Journal of Public Administration Research and Theory*, 21(4), 705-729.
18. Bryant, R., Char, B., & Schneider, C. (2018). Differing clinical pharmacy service models: Quantitative and qualitative analysis of nurse perceptions of support from pharmacists. *International Journal of Nursing Studies*, 86, 90-98.
19. Chimezie, R. O. (2019). Advanced practice nursing in Nigerian healthcare: Prospects and challenges. *Journal of Social Change*, 11(1), Article 6. Retrieved from <https://scholarworks.waldenu.edu/jsc/vol11/iss1/6>
20. Chukwu, J. N. (2021a). Electronic health records and collaborative practices. *Nigerian Medical Informatics Review*, 19(3), 87-104.
21. Chukwu, J. N. (2021b). Regulatory frameworks and interprofessional collaboration. *Nigerian Medical Journal*, 62(4), 345-359.
22. Cramm, J. M., & Nieboer, A. P. (2012). Relational coordination promotes quality of chronic care delivery in Dutch disease-management programmes. *Health Care Management Review*, 37(4), 301-309.

23. Cramm, J. M., & Nieboer, A. P. (2019). The impact of social capital and relational coordination on the provision of chronic care. *Journal of Management & Organization*, 25(1), 92-105.
24. Cullati, S., Bochatay, N., Maitre, F., Laroche, T., Muller-juge, V., Blondon, K. S., & Perron, N. J. (2019). When team conflicts threaten quality of care: A study of healthcare professionals' experiences and perceptions. *Mayo Clinic Proceedings: Innovations, Quality and Outcomes*, 3(1), 43-51.
25. Davis, P. C. (2022). *Alternative modes of reproduction: Determinants of choice: Reproductive laws for the 1990s*. Clifton, NJ: Humana Press.
26. Dovlo, D., Ametepeh, S., & Awoonor-Williams, K. (2022). Health services delivery. In A. Mills, E. Atun, & M. Ranson (Eds.), *Making health systems work in low and middle income countries* (pp. 177–195). Cambridge University Press. <https://doi.org/10.1017/9781108973129.015>
27. Edmondson, A. C., & Gittel, J. H. (2021). Creating psychological safety across boundaries: The role of relational coordination. *Administrative Science Quarterly*, 66(3), 515-541.
28. Egbunu, D. A., & Yunusa, E. (2022). Factors determining the health-seeking behaviour of rural dwellers in Dekina Local Government Area of Kogi State, Nigeria. *International Medical Science Research Journal*, 2(1), 1-20.
29. Elom, P., Agu, A. P., Unah, A. F., Azuogu, B. N., Ituma, B., Okah, O. U., Okocha, Y. I., Ugwunweze, J. I., Ossai, E. N., & Igwe-Okomiso, D. O. (2024). Prevalence and factors associated with workplace violence in a tertiary healthcare facility in South East Nigeria. *Nigerian Medical Journal*, 65(2), 173–184.
30. Fagin, C. (2019). Collaboration between nurses and physicians: No longer a choice. *Nursing and Healthcare*, 13, 354-363.
31. Federal Ministry of Health. (2010). *National Strategic Health Development Plan (NSHDP) 2010 - 2015*. Abuja, Nigeria: Federal Ministry of Health.

32. Furnham, A. (2018). The brainstorming myth. *Business Strategy Review*, 11(4), 21-28.
33. Garcia, R., & Mohammed, H. (2022). Technological, environmental and policy barriers to interprofessional collaboration in emergency departments. *Emergency Medicine Journal*, 39(4), 267-275.
34. Gibbons, M. C., Shaikh, Y., & Ayalasomayajula, S. (2022). Healthcare delivery in the digital age. *Health Services Insights*, 15, 1–8. <https://doi.org/10.1177/11786329221121015>
35. Gittell, J. H. (2002). Coordinating mechanisms in care provider groups: Relational coordination as a mediator and input uncertainty as a moderator of performance effects. *Management Science*, 48(11), 1408-1426.
36. Gittell, J. H. (2006). Relational coordination: Coordinating work through relationships of shared goals, shared knowledge and mutual respect. In O. Kyriakidou & M. Özbilgin (Eds.), *Relational perspectives in organizational studies: A research companion* (pp. 74-94). Edward Elgar Publishing.
37. Gittell, J. H. (2016). *Transforming relationships for high performance: The power of relational coordination*. Stanford University Press.
38. Gittell, J. H., Beswick, J., Goldmann, D., & Wallack, S. S. (2013). Teamwork methods for accountable care: Relational coordination and TeamSTEPPS. *Health Care Management Review*, 38(3), 274-284.
39. Gittell, J. H., Godfrey, M., & Thistlethwaite, J. (2020). Interprofessional collaborative practice and relational coordination: Improving healthcare through relationships. *Journal of Interprofessional Care*, 34(1), 10-16.
40. Gittell, J. H., Seidner, R., & Wimbush, J. (2010). A relational model of how high-performance work systems work. *Organization Science*, 21(2), 490-506.
41. Goldman, S., Kuper, A., Ivers, N., & Reeves, S. (2022). The influence of interprofessional collaboration on professional development and patient care quality in healthcare settings. *Journal of Interprofessional Care*, 36(2), 124-134.

42. Gougeon, L., Johnson, J., & Morse, H. (2022). Interprofessional collaboration in healthcare teams for the maintenance of community-dwelling seniors' health and well-being in Canada: A systematic review of trials. *Journal of Interprofessional Education & Practice*, 7, 29-37.
43. Green, B. N., & Johnson, C. D. (2020). Interprofessional collaboration in research, education, and clinical practice: Working together for a better future. *Journal of Chiropractic Education*, 29(1), 1-10.
44. Harris, M. F., Advocat, J., Crabtree, B. F., Levesque, J. F., Miller, W. L., Gunn, J. M., & Russell, G. M. (2021). Interprofessional teamwork innovations for primary health care practices and practitioners: Evidence from a comparison of reform in three countries. *Journal of Multidisciplinary Healthcare*, 35-46.
45. Harrison, T., & Mgbere, O. (2020). Structural and interpersonal barriers to healthcare professional collaboration: A mixed-methods study in Scottish hospitals. *BMC Health Services Research*, 20(1), 810.
46. Havens, D. S., Gittell, J. H., & Vasey, J. (2018). Impact of relational coordination on nurse job satisfaction, work engagement and burnout: Achieving the quadruple aim. *Journal of Nursing Administration*, 48(3), 132-140.
47. Hustoft, M., Biringer, E., Gjesdal, S., Aßmus, J., & Hetlevik, Ø. (2018). Relational coordination in interprofessional teams and its effect on patient-reported benefit and continuity of care: A prospective cohort study from rehabilitation centres in Western Norway. *BMC Health Services Research*, 18(1), 719.
48. Ibrahim, M., & Okafor, E. (2021). Mobile health applications for healthcare team communication: Adoption patterns in Nigerian tertiary hospitals. *African Journal of Health Informatics*, 7(2), 132-147.
49. Integrating Digital Health Technologies into the Healthcare System: Challenges and Opportunities in Nigeria. (2024). *PMC*. Retrieved from <https://pmc.ncbi.nlm.nih.gov/articles/PMC12289021/>

50. Jackson, R., & Ahmed, F. (2021). Collaborative practices among healthcare professionals in tertiary hospitals: A comparative analysis of urban and rural settings. *Australian Health Review*, 45(3), 352-361.
51. Jadotte, Y. T., Holly, C., Chase, S. M., Powell, A., & Passannante, M. (2018). Interprofessional collaboration and health outcomes: A systematic review and meta-synthesis. *Comprehensive Systematic Review for Advanced Practice Nursing*, 3(22-35).
52. Jimoh, A., & Smith, B. (2023). Electronic health records and collaborative care: Implementation experience in Nigerian specialist hospitals. *Health Policy and Technology*, 12(1), 100675.
53. Kalb, K. A., & O'Conner-Von, S. (2022). Breaking down silos, building up teams. *Health Progress*, 93(38-42), 44-45.
54. Karam, M., Brault, I., Van Durme, T., & Macq, J. (2018). Comparing interprofessional and interorganizational collaboration in healthcare: A systematic review of the qualitative research. *International Journal of Nursing Studies*, 79, 70-83.
55. Kilman, R. H., & Thomas, K. W. (2021). Thomas-Kilman conflict mode instrument. Mountain View, CA: Xicom, a subsidiary of CPP, Inc.
56. Kogi State Government. (n.d.). *About Kogi State*. <https://kogistate.gov.ng/about-kogi-state>
- Kwame, A., & Fernandez, V. (2022). Interprofessional collaboration and healthcare efficiency: Evidence from primary healthcare centres in Ghana. *Health Economics*, 31(4), 654-669.
57. Lee, G., & Nguyen, M. (2021). Collaborative practices and staff burnout in emergency departments. *Journal of Emergency Medicine*, 58(3), 210-220.
58. Leiyu, S., & Douglas, S. (2015). *Essentials of the U.S. health care system* (4th ed.). Jones & Bartlett Learning.

59. Lingard, L., Regehr, G., Espin, S., & Reznick, R. (2023). Collaborative teamwork and healthcare efficiency: Reducing wait times and hospital stays through effective communication. *BMJ Quality & Safety*, 32(3), 201-210.
60. Lingard, L., Regehr, G., & Eva, K. (2023). Collaborative healthcare teams and efficiency of service delivery: A systematic review. *Journal of Interprofessional Care*, 37(2), 145–157.
61. Lutfiyya, M. N., Chang, L. F., & Lipsky, M. S. (2020). Patient perceptions of healthcare provider teamwork: Correlation with satisfaction and quality of care. *American Journal of Medical Quality*, 35(4), 312-320.
62. Makinde, O. A., Azeez, A., Bamidele, S., Oyemakinde, A., Oyediran, K. A., & Adebayo, W. (2022). Development of a master health facility list in Nigeria. *Online Journal of Public Health Informatics*, 6(2), e184.
63. Manski-Nankervis, J. A., Furler, J., Blackberry, I., Young, D., O'Neal, D., & Patterson, E. (2018). Relational coordination amongst health professionals involved in insulin initiation for people with type 2 diabetes in general practice: An exploratory survey. *BMC Health Services Research*, 18(1), 204.
64. Mbeki, K., & Wilson, G. (2024). Collaborative practice models among healthcare professionals in resource-constrained settings: A case study of rural South African hospitals. *Social Science & Medicine*, 337, 116142.
65. Medical and Dental Council of Nigeria (MDCN). (n.d.). *Part One of Medical and Dental Schools for Practice in Nigeria (Provisional Registration & Internship)*. MDCN
66. Mukhalalati, B. A., & Taylor, A. (2019). Adult learning theories in context: A quick guide for healthcare professional educators. *Journal of Medical Education and Curricular Development*, 6, 23-50.
67. Musa, A., & Ekwueme, C. (2024). Artificial intelligence decision support systems and interprofessional collaboration in specialist care: A pilot implementation in Kogi State. *Digital Health*, 10, 20552076231200458.

68. Nguyen, L., & Awofeso, N. (2024). Professional stereotyping as a barrier to effective collaboration: An intervention study among healthcare students. *Journal of Interprofessional Education & Practice*, 34, 100596.
69. Nugus, P., Greenfield, D., Travaglia, J., & Braithwaite, J. (2020). The politics of action: Reconciling different perspectives on relational coordination. *Learning in Health and Social Care*, 19(3), 233-244.
70. Nwajiobi, C. (2018). Nursing and midwifery practice in Nigeria: The legal perspective. Enugu: His Glory Publications. Retrieved from <https://www.scribd.com/document/648164745/nursing-and-midwifery-practice-in-nigeria-the-legal-perspective>
71. Nwosu, C., Okeke, B., & Uzoma, K. (2021). Professional identity and collaborative practice: Tensions and opportunities in teaching hospitals. *Medical Education*, 55(5), 604-616.
72. Nwozichi, C. U., & Olatunji, P. O. (2022). Mobile health technologies in professional communication. *Digital Health Studies*, 28(4), 221-237.
73. Obichi, C., Anieche, C., Osuala, E., & Oruche, U. (2021). The role and practice of clinical nurse specialist in Nigeria. *International Journal of Nursing and Midwifery*, 13(2), 45–52. Retrieved from <https://www.researchgate.net/publication/354002093>
74. Odeyemi, B., & Oyelade, A. (2023). Role of interprofessional collaboration in emergency care delivery in Nigerian public hospitals. *West African Journal of Medicine*, 40(4), 289-298.
75. Ogbaje, O. S., Gomment, T. I., & Ogwuche, G. G. (2024). Spatial assessment of the effect of income on healthcare facilities patronage in Kogi-East Senatorial District, Kogi State, Nigeria. *Journal of Advanced Research and Multidisciplinary Studies*, 4(3) 1-22.
76. Ojule, A. C. (2024). Policy making for effective laboratory practice in Nigeria. University of Port Harcourt Teaching Hospital, Port Harcourt (unpublished).

77. Okonkwo, U., Abubakar, M., & Njoku, P. (2022). Prevalence and characteristics of interprofessional collaboration in Nigerian teaching hospitals. *Nigerian Journal of Clinical Practice*, 25(3), 267-276.
78. Olowoselu, T., & Olatunde, J. (2020). Collaboration in the management of chronic diseases in Nigerian public hospitals. *Nigerian Journal of Clinical Practice*, 23(5), 618-624.
79. Oluwadare, C. T., Olorunfemi, A. A., Atiba, A. S., & Ijabadeniyi, O. A. (2021). A comparative assessment of access to healthcare of people living in Ekiti and Kogi States of Nigeria. *Asian Journal of Medicine and Health*, 19(1), 7-17.
80. Onuoha, E., & Okafor, C. (2024). Interprofessional collaboration and healthcare delivery in rural Nigerian public hospitals. *Journal of Rural Health*, 40(2), 190-200.
81. Onyekwere, L. A. (2024). Team working in healthcare settings: Barriers and enablers. *Journal of Interprofessional Education & Practice*, 14, 12-19.
82. Osemekwe, C. C. (2022). Interprofessional collaboration and healthcare service delivery in Nigeria. *Journal of Medical Ethics*, 21(3), 115-120.
83. Osoba, M., Usman, S., Oyadiran, O., Odeyemi, J., & Abode, M. (2021). Undergraduate medical education in Nigeria: current standard and the need for advancement. *The Pan African Medical Journal*, 38.
84. Oyemakinde, A. (2021). Healthcare delivery in Nigeria: Current status and future goals. Nigeria Centre for Disease Control.
85. Patel, S., Brown, R., & White, J. (2021). The relationship between healthcare professional collaboration and quality of care in stroke management: A multicentre study. *BMJ Quality & Safety*, 30(5), 418-430.
86. Plsek, P. (2019). Reducing complexity in healthcare: Management strategies for success. *Health Services Management Research*, 12(3), 163-173.
87. Reeves, S., Lewin, S., Espin, S., & Zwarenstein, M. (2018). *Interprofessional teamwork in healthcare: Principles and evidence*. Wiley-Blackwell.

88. Rodriguez, K., & Singh, A. (2020). Impact of interprofessional collaboration on patient safety outcomes: A systematic analysis of surgical care units. *CMAJ Open*, 8(3), E474-E483.
89. Shi, L., & Singh, D. A. (2019). *Delivering health care in America: A systems approach* (7th ed.). Jones & Bartlett Learning.
90. Starfield, B. (2011). Is primary care essential? *The Lancet*, 344(8930), 1129–1133. [https://doi.org/10.1016/S0140-6736\(94\)90634-3](https://doi.org/10.1016/S0140-6736(94)90634-3)
91. Suleiman, H., & Park, Y. (2022). Telemedicine implementation and interprofessional collaboration in rural Nigerian hospitals: A mixed-methods evaluation. *Telemedicine and e-Health*, 28(5), 614-625.
92. TheHospitalBook. (2021). Kogi State Specialist Hospital, Lokoja, Nigeria. Retrieved from <https://thehospitalbook.com/kogi-state-specialist-hospitallokoja/>
93. Udo, E., & Peterson, K. (2023). Barriers to interprofessional collaboration in primary healthcare: Perspectives from low and middle-income countries. *Global Health Action*, 16(1), 2172784.
94. Umezulike, E. O., Osuala, E., & Azuonwu, G. (2024). Perceived impact and factors influencing multidisciplinary collaboration in patient care among healthcare providers in Federal Medical Center Onitsha, Anambra, Nigeria. *Asian Journal of Research in Medicine and Medical Science*, 6(1), 100–109. <https://jofmedical.com/index.php/AJRMMS/article/view/73>
95. Valentine, M. A., Nembhard, I. M., & Edmondson, A. C. (2015). Measuring teamwork in health care settings: A review of survey instruments. *Medical Care*, 53(4), e16-e30.
96. Weinberg, D. B., Lusenhop, R. W., Gittell, J. H., & Kautz, C. M. (2019). Coordination between formal providers and informal caregivers. *Health Care Management Review*, 32(2), 140-149.
97. WHO. (2020). Framework for action on interprofessional education & collaborative practice. https://www.who.int/hrh/resources/framework_action/en/

98. Williams, J., Taylor, E., & Brown, S. (2020). Patterns of interprofessional collaboration in primary care settings: A cross-sectional analysis. *BMC Family Practice*, 21(1), 234.
99. World Health Organization (WHO). (2007). *Everybody's business: Strengthening health systems to improve health outcomes: WHO's framework for action*. WHO Press. <https://apps.who.int/iris/handle/10665/43918>
100. World Population Review. (2025). *Lokoja population 2025*. World Population Review. <https://worldpopulationreview.com/cities/nigeria/lokoja>
101. Williams, T., Bruminhent, J., Siddiqui, S., & Gittell, J. H. (2022). Relational coordination during crisis: Healthcare provider responses to the COVID-19 pandemic. *Journal of General Internal Medicine*, 37(3), 546-553.
102. Yoshida, T., & Kumar, R. (2023). Temporal patterns of healthcare professional collaboration: A longitudinal analysis of electronic health record interactions. *Journal of the American Medical Informatics Association*, 30(6), 1053-1063.
103. Yunusa, E. (2024). A review of the effects of doctor-nurse conflict on patients' healthcare in Nigerian public hospitals. *Thomas Adewumi University Journal of Innovation Science and Technology*, 1(1), 1-11.
104. Yusuf, K. A., & Mohammed, S. I. (2023). Economic implications of healthcare collaboration inefficiencies. *Nigerian Health Economics Review*, 28(2), 45-61.
105. Zwarenstein, M. (2019). Improving patient safety through interprofessional collaboration and communication. *BMJ Quality & Safety*, 28(9), 742-748. <https://doi.org/10.1136/bmjqs-2018-009246>
106. Zwarenstein, M., Reeves, S., & Perrier, L. (2021). Effectiveness of pre-licensure inter-professional education and training on practice behaviours and patient outcomes. The Cochrane Library.