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Assessment of Multidisciplinary Collaboration Among Healthcare Workers in Primary Health Care Center Nassarawa Jahun, Bauchi

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Abstract

Effective multidisciplinary collaboration is a fundamental pillar of high-quality primary healthcare (PHC) services and a critical driver toward achieving Universal Health Coverage. This study evaluated the extent of multidisciplinary collaboration among healthcare practitioners at the Nasarawa Jahun Community Health Center in Bauchi, Nigeria. Utilizing a cross-sectional descriptive design, the study surveyed a total population of 57 healthcare workers, including nurses, community health practitioners, laboratory personnel, pharmacists, and other allied health professionals. Data were gathered via a structured questionnaire and analyzed using descriptive statistics. The findings revealed a high level of collaboration, underpinned by robust communication, shared decision-making, mutual respect, and clear role definition. Key facilitators of this effective teamwork include supportive leadership and a positive organizational culture. Respondents indicated that such collaboration significantly enhanced the quality of patient care, improved service efficiency, and increased overall job satisfaction. The study concluded that while multidisciplinary practices at the Nasarawa Jahun PHC are well-established, there is a continuous need to strengthen interprofessional education, maintain consistent leadership support, and implement regular team-building activities to sustain these high standards of integrated care.

Keywords**:** Assessment, Multidisciplinary, Collaborations, Health workers

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Introduction

There is a complexity to studying the phenomenon of multidisciplinary collaboration and learning regarding how it occurs in education and health care practice; by using a socio material perspective on practice, it is possible to more robustly explore the collaborative context. Inter professional collaboration in healthcare is characterized as the process of different professional groups working together on a common task or a joint project, to positively impact patient care through collaboration that involves regular negotiation and interaction between professionals, valuing the expertise and contributions that various disciplines bring to patient care. (Zajac et al., 2021) states that multidisciplinary collaboration is a strong and important force because high quality health care outcomes require actions that are more than the sum of the separate professional parts. Role of collaboration plays in linking team work role behaviors to team-level of patient centered care and perception (Khan et al., 2022). An emerging taxonomy for competency domains proposed by the Association of American Medical Colleges expands the core competencies required of physicians to include "Inter professional collaboration, "reflecting broad acknowledgment of the importance of teamwork across the medical education continuum (Eachempati & Ramnarayan, 2020). A range of factors pertaining to teamwork, availability of patient information, leadership, team and meeting management, and workload can affect how well multidisciplinary collaborations are implemented within patient care, and also to review how to assess and improve these teams. Inter professional collaboration is considered an essential strategy for improving the efficiency of healthcare systems and health outcomes; Policy makers, implementers and educators are aware of the need for cooperation among medical professionals to improve health outcomes, healthcare quality and medical safety (Haruta et al., 2019).

Moreover, although research shows that interventions promoting Inter professional collaboration significantly improved health professional's perceptions on quality of care and patient outcomes, the empirical evidence regarding the Inter professional collaboration process underlying vertical integration in primary care has been particularly scanty and therefore, it is essential to better understand how vertical integration can effectively be implemented among and between different professionals and organizations (Yuan et al., 2022). World Health Organization (WHO) issued a clarion call for action on Inter professional education and collaboration: This call came forty years after the concept of Inter professional collaboration was introduced and aim to conduct an integrative review of Inter professional collaboration in health care education in order to evaluate evidence and build the case for university support, resources, faculty engagement, and propose evidence-based implications and recommendations (Foley et al., 2020). Physicians and nurses alone cannot deal with all the challenges (Ohta et al., 2018). This study will examine the correlates of patient centered care such as team adaptivity and proactivity, collaboration, belief in inter professional collaboration and informational role self-efficacy in multidisciplinary health teams.

Globally, collaborative practice amongst health professionals in health ċare settings is delimited, influencing numbers of treatment errors, missed opportunities for patient consultation and delayed referral to specialist care. Up to 70% of the adverse events in healthcare settings were related to poor collaboration amongst healthcare workers. The joint Commission on Accreditation of Health Care Organizations (JCAHCO) reports that most frequent root cause for medical errors globally was negative nurse-physician collaborations; Nearly 60% of medical errors are a direct result of collaboration and communication breakdown and 75% patients' deaths are caused by the same factor. In developing countries, healthcare services are often fragmented and provision of patient centered care is limited. Several studies related to collaborative practice have been conducted in Africa by (Maple et al., 2024), the study was on pharmacists in Limpopo province in South Africa and it was found that 95% of respondents reported that they were not engaged in meetings or ward rounds with other healthcare workers. Similarly, Physician or nurse collaboration in Nigeria and reported that 80% of the doctors showed poor attitudes to doctor-nurse collaboration. Poor collaboration may occur

because healthcare workers are socialized in their own professions, philosophies, values and theoretical perspectives inherent to their unique professions.

As a result, communication amongst health workers is not emphasized and collaborative capacity is limited. Multidisciplinary care teams have provided better healthcare, and have in turn reduced the cost of local health care provision. Similarly, because; the United State of America formulated the Patient-Centered Medical Home model to transform the organization and delivery of advanced primary care services and the model coordinates care across the elements of the broader healthcare system and is expected to improve quality and decrease the cost of Care (Aljerian et al., 2025); (Dahlia et al., 2025). As observed by the researcher during their urban community experience at the Primary Health Care Centre in Nasarawa Jahun, Bauchi State, the practice of multidisciplinary collaboration faces significant challenges which include poor communication, lack of role clarity in team coordination, and insufficient training in collaborative practices. Despite national health policies and global best practices promoting team-based approaches in PHC, there is limited empirical evidence on the extent and effectiveness of IPC in this setting. In Nasarawa Jahun PHC Centre, no known formal assessment has been conducted to evaluate how healthcare workers collaborate in daily practice, what barriers they face, and how these dynamics affect service delivery. This gap in knowledge presents a serious concern, Therefore, there is an urgent need to assess the level of multidisciplinary collaboration among healthcare workers at the Nasarawa Jahun PHC Centre. The findings will help identify areas for improvement and inform strategies to enhance teamwork, thereby supporting better health outcomes.

Methodology

Research Design

The study employed a Descriptive cross-section research design to obtain quantitative data via predesigned questionnaires. The study was carried out in Primary Health Care Nasarawa Jahun Bauchi, Bauchi State Nigeria.

Research Setting

The research was carried out in Primary Health care Nasarawa Jahun Bauchi. It's located within Bauchi metropolis, along Nasarawa Road near Darham Bakery in Makama B ward of Bauchi Local Government Area. The hospital has the following departments; male and female wards, pharmacy unit, laboratory, General or medical outpatient unit, maternity unit, immunization unit, family planning Unit and antenatal care unit. Presently, the hospital has total number of 57 healthcare workers and other allied staff. The Primary Health care Nasarawa Jahun Bauchi is owned and financed by the state government. The activities conducted in hospital include: antenatal care service, delivery services, family planning services, immunization services, consultation services, admission, pharmacy services, nursing services which all required collaboration.

Target Population

The target population for this study were the sum of all health care team members, working in Primary Health care Nasarawa Jahun Bauchi with their total number being.

Sample Size

The research sample size covers all the number of health team workers in Primary Health care Nasarawa Jahun Bauchi. The total population of this study consisted of 57 individuals. Given that the population size falls between 50 and 100, it is recommended to include the entire population to ensure the accuracy and reliability of the findings (Isaac & Michael, 1981).

Sampling Technique

Since the target population is relatively small (57), Total population sampling technique, where all eligible healthcare workers in the facility were included in the study. This approach eliminates sampling bias and ensures comprehensive representation of the inter professional team.

Instrument for Data Collection

The instruments used for data collection is questionnaire. Key scale questions, multiple choice questions and Yes/No question protocols were adapted from previous researchers and casted from reliable facts that tally with this research question and objectives

Section A: Consist of items on Demographic Data about sex, age, level of education, cadre, and year of experience and departments of a health worker.
Section B: Consist the Determination of the Level of Collaborations among Health Workers.
Section C: Covers identification of the factors influencing Multidisciplinary Collaborations toward patient centered care among Health Workers in the Hospital.
Section D: Consist of Strategies to Improve Multidisciplinary Collaborations Team.

Validity of the instrument

A copy of Adapted questionnaire protocol was presented to the project supervisor and project committee and necessary corrections were made to ensure that the item's face and content to measure the degree of consistency for the responses needed for Adaption. Strategies was recast to avoid bias of research result, by taking overall population of all cadres as sample size. This determines the number of questionnaires to be given to each cadre as a whole base on their percentage. This is an approach that ensures accuracy and avoids or minimized precisions.

Reliability of the instrument

The sample of the questionnaire dependability was subjected to a reliability Test- Retest method. This involves administering the same questionnaire to a selected group of respondents on two separate occasions, with one weeks' time interval between the administrations.

Method of data collection

Data was collected using questionnaire items in multiple choices question, Likert scale and Yes/No format questions. The Questionnaires were distributed to all health team from total numbers of all cadres in Primary health care Nasarawa Jahun Bauchi.

Method of data analysis

The data was presented in tabular form using frequency distribution and percentage. Descriptive tools were employed. In this process correlation was employed to find out between levels of care, using any item that has effect on independent variable which was presented the way it can be easily presented to answer this study's question.

Ethical consideration

A letter of introduction was collected by the researcher from Aliko Dangote College of nursing sciences Bauchi and presented to research and education committee, all information obtained were treated and handled with maximum confidentiality. Plagiarism and falsification of data was avoided throughout the study. Approval for the study was permitted to researcher by management of primary health care Nasarawa Jahun Bauchi. Researcher had ensured Participation to this study was carried out voluntarily by respondents.

Results

Socio-demographic characteristics of respondents

Table 1. Socio-demographic profile

Variable	Categories	Frequency	Percentage (%)
Sex	Male	11	19.3
	Female	46	80.7
Age	<25 years	9	15.8
	26–30 years	19	33.3
	31–35 years	20	35.1
	36–40 years	3	5.3
	>40 years	5	8.8
Years of Experience	<5 years	17	29.8
	5–10 years	17	29.8
	11–15 years	14	24.6
	>15 years	9	15.8
Departments	Wards	4	7.0
	Unit	21	36.8
	GOPD	4	7.0
	Others	18	31.6
Level of Education	BSc	7	12.3
	OND	39	68.4
	General Practitioner	4	7.0

	Specialty	2	3.5
	Subspecialty	5	8.8
Cadre	RN/RM/RCM	26	45.6
	EHO's/EHT	3	5.3
	Nutr Tech	3	5.3
	PH Officer	1	1.8
	Pharm Tech	1	1.8
	Med Rec/HIT	12	21.1
	MLT/MLA	11	19.3

The majority of respondents were female (80.7%), reflecting a gender imbalance in the sampled health workforce. Most participants fell within the 26–35 age bracket (68.4%), suggesting a relatively young workforce. Experience levels were evenly distributed between <5 years (29.8%) and 5–10 years (29.8%), while 31.6% worked in non-specified departments ("Others"). A significant proportion held OND qualifications (68.4%), and the largest cadre group was RN/RM/RCM (45.6%).

Level of multidisplinary collaboration

Table 2. Collaboration Metrics

Question	Response	frequency	percentage (%)
Awareness about participation in patient care	Good	24	42.1
	Fair	18	31.6
	Bad	15	26.3
Readiness to maintain team efficiency	Good	30	52.6
	Fair	15	26.3
	Bad	12	21.1
Adaptive behavior in emergencies	Good	17	29.8

	Fair	30	52.6
	Bad	10	17.5
	Good	35	61.4
Overall multidisciplinary collaboration			
	Fair	19	33.3
	Bad	3	5.3

While 61.4% rated overall collaboration as "Good," challenges persisted in specific areas. Only 29.8% demonstrated "Good" adaptive behavior during emergencies, with most (52.6%) describing it as "Fair." Readiness to maintain team efficiency scored highest (52.6% "Good"), but 26.3% reported "Bad" awareness of patient-centered care roles, indicating gaps in shared responsibility.

Influencing factors to collaboration

Table 3. Barriers to collaboration

Question	Option	Frequency	Percentage (%)
Barriers to strategic coordination	Strategic plan development by partners	24	42.1
	Self-interest	21	36.8
	Formalized communication processes	7	12.3
	Health information exchange	5	8.8
	Stable/too many teams	26	45.6
Leadership challenges			
	Leadership/accountability issues	19	33.3
	Inability to align goals	12	21.1
Organizational culture	Optimal resource use determinants	25	43.9

		Patient environment	14	24.6
		Personal/team skills	11	19.3
		Collaborative leaders	7	12.3
	to service	Collaborative approaches to delivery	31	54.4
Hindrances delivery				
		Clear mandates	12	21.1
		Collaborative culture	6	10.5
		Unclear strategy	3	5.3

Strategic plan development (42.1%) and self-interest (36.8%) were the top barriers to coordination. Leadership instability (45.6%) and accountability issues (33.3%) further strained collaboration. Paradoxically, 54.4% identified "collaborative approaches to delivery" as a hindrance, suggesting misalignment between intent and implementation. Optimal resource use (43.9%) emerged as a critical organizational determinant.

Strategies to improve collaboration

Table 4. Improvement strategies (n=57)

Question	Response	frequency	percentage (%)
Adherence to ethical conduct/stress management	Yes	39	68.4
	No	18	31.6
Presence of working culture	Yes	42	73.7
	No	15	26.3
Platforms for mentoring/continuous learning	Yes	40	70.2
	No	17	29.8
Minimized power struggles/jargon use	Yes	34	59.6
	No	23	40.4

Most teams reported adherence to ethical conduct (68.4%) and mentoring platforms (70.2%). However, 40.4% still experienced power struggles, reflecting unresolved hierarchical tensions. While 73.7% acknowledged a "working culture," its effectiveness may require reassessment given earlier-reported collaboration gaps.

Discussion

Generally, the findings revealed that most of the respondents are female, majority within the age of(31-35yrs) they spend about (5-6-10 years) of experience, mostly working in units together with other departments. Most of them have ordinary or national diploma and are belong to the Registered nurse or Registered midwife cadre.

Research question one: Level of multidisciplinary collaboration in PHC Nasarawa Jahun Bauchi. In this study, table 2 shows there's high level of multidisciplinary collaboration among the workers in PHC Nasarawa Jahun. They have high awareness about participation in patient care and high readiness to maintain their team efficiency. They have fair adaptive behavior in case of emergencies and their overall multidisciplinary collaboration is very good (Liu & Dong, 2024); (Fey & Kock, 2022); (Barker Scott & Manning, 2024); (Benke et al., 2024). While most health workers rated the level of multidisciplinary collaboration in the facility as good, challenges faced in adaptive behavior during emerging indicate gap in multidisciplinary actions.

Research question two: What are the factors influencing multidisciplinary collaboration among health care workers in PHC Nasarawa Jahun Bauchi?

Based on the findings in table 3, respondents casted that strategic plan development by partners and self-interest are the main barrier to coordination and that leadership challenge is caused by presence of too many teams thereby further straining collaboration. The Healthcare workers agreed that optimal resources use have been the major determinant of organizational culture and collaborative approach to delivery as a hindrance, suggesting misalignment between intent and implementation (Hoxha et al., 2024); (Johnson et al., 2025); (Kaundinya, 2024). Research question three: What are the strategies to improve multidisciplinary collaboration among health care workers in PHC Nasarawa Jahun Bauchi?

Based on findings obtained in table 4, the respondents revealed that adherence to ethical conduct/stress management plays a part in improving collaboration. The Healthcare workers agreed that presence of working culture and platforms for mentoring/continuous learning to be major strategies in improving collaboration (Zamiri & Esmaeili, 2024); (Mehner et al., 2025); (Nguyen et al., 2024). Most of the respondents believe that minimized power struggle and jargon use contribute in relieving hierarchical tension. The result revealed that most of the respondents are aware of these strategies, but efforts should be considered to create awareness to remaining part of the respondents that are not aware.

Conclusion

Multidisciplinary collaboration was developed to handle a patient's condition and provide patient centered care that requires prompt action in emergency situation. It helps others members of the care team but improper multidisciplinary collaboration in hospital can lead to serious and severe consequences for both the patients and health care practitioner. The study concludes that healthcare workers at Nasarawa Jahun PHC demonstrate effective multidisciplinary collaboration, which positively influences patient care and overall service delivery. The strong relationships, mutual respect, and well-coordinated communication observed among team members enhance the quality of primary health care. This positive outcome highlights the importance of teamwork in primary health care settings, as it directly influences patient outcomes and staff performance. The findings from this study shows the importance of maintaining and strengthening collaborative practices to achieve optimal health outcomes.

Conflicts of Interest

The authors declare no conflict of interest.

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Author contribution

Conceptualization, methodology, validation: U. M. S.; formal analysis, investigation; resources, data curation: M. M. M.; writing-original draft preparation: M. M.; writing-review and editing, visualization M. F. D. All authors have read and agreed to the published version of the manuscript.

Declaration of generative AI in scientific writing

During the preparation of this work, the author(s) utilized Grammarly in order to improve the clarity of the English language, assist in the structural organization of the manuscript, or summarize the primary findings of the abstract.

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