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Investigating The Role Of Interprofessional Collaboration Between Physicians And Nurses In Delivering Patient -Centered Care For Individual With Chronic Illnesses

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ABSTRACT

Chronic diseases are an important global health challenge that requires the use of patient-centered care solutions that cater to the multifaceted and dynamic needs of people with these conditions. Cooperation between nurses and physicians is increasingly recognized as the key to delivering optimal healthcare to this population. Nonetheless, the concrete processes and effects of physician-nurse teamwork on patientcentered care in the context of chronic illness management have become a significant issue, which can be defined by the absence of systematic implementation and limited evidence of interventional effectiveness at the primary care level.

In this light, this study explores the concept of IPC between physicians and nurses in providing patientcentered care to individuals with chronic illnesses and how the concept impacts patient outcomes, communication, shared decision-making, and care coordination. An in-depth examination of scholarly works indicates that effective communication, mutual respect, and role definition are the main facilitators of IPC, whereas hierarchical structures, communication failure, and role ambiguity are the contributors to the barrier. It is assumed that the findings will be useful in informing practice guidelines, educational initiatives, and policies aimed at improving collaborative practices, which will eventually result in better patient experiences and health outcomes among those living with chronic conditions.

Introduction

A. Background of the Problem

Chronic illnesses, such as cardiovascular diseases, diabetes, and chronic obstructive pulmonary disease, have emerged as the major causes of mortality and morbidity worldwide. Recent data provided by the World Health Organization indicate that over 70 percent of mortalities worldwide are due to chronic diseases, especially their prevalence and the long-term impact on patients, relatives, and medical care systems. Such conditions may be chronic and may require constant medical care, lifestyle modifications, and psychosocial interventions, which cannot be effectively met by a single provider.

These long-term and complex care needs cannot be met by traditional healthcare delivery models, which are mostly hierarchical and focused on physicians (Raaijmakers et al., 2023). They also focus on acute services rather than continuity of care, which leads to patient dissatisfaction, disjointed communication, and reduced compliance with treatment plans. Fragmented healthcare may create a greater treatment burden and poor patient experiences, especially in people with several chronic conditions, as Benthien et al. (2024)claimed.

Patient-centered care (PCC) has become a highly important paradigm shift in response to these challenges. It focuses on patient preferences, their participation in decision-making, organization of services, and holistic care delivery (Davidson et al., 2022). However, a successful implementation of PCC requires strong cooperation among medical workers, particularly between physicians and nurses, who are the key participants in the management of chronic diseases.

B. Relevance of Interprofessional Collaboration.

Interprofessional collaboration (IPC) is the process of cooperation among multiple healthcare workers of various professional orientations with patients and families aimed at providing the best possible care (Davidson et al., 2022; Reeves et al., 2017). Traditionally, the provision of healthcare was based on strict professional lines, where physicians were the directive authority and nurses were in task-oriented positions. However, with time, the complexity of the care required by patients and evidence-based team models have prompted a redefinition of professional boundaries and collaborative roles.

The benefits of effective IPC include increased communication, shared decision-making, and continuity of care, which are direct benefits of patient-centered care (Pascucci et al., 2020). IPC can be used in chronic disease management to enhance the control of clinical indicators, hospital admissions and patient satisfaction (Esperat et al., 2023).

The dyad between physicians and nurses is especially important. Nurses play crucial roles in patient education, monitoring, and emotional support, whereas physicians are usually involved in diagnosing and providing clinical treatment to patients (Shaw et al., 2014). The collaborative nature of these functions, which generates a care environment, supports the overall care of chronic illnesses, including both medical and psychosocial aspects.

C. Literature Gap in Literature/Problem Statement.

Despite the general acceptance of interprofessional collaboration and patient-centered care as the top practices, the mechanisms through which physician-nurse collaboration affects patient-centered outcomes are understudied. Empirical studies that divide these collaborative dynamics into the context of chronic illnesses are scarce, yet the overall benefits of IPC have been highlighted (Reeves et al., 2017; Pascucci et al., 2020).

Moreover, obstacles in the form of professional hierarchies, communication failures, and undefined role definitions remain, undermining the uniformity and quality of IPC implementation (Rawlinson et al., 2021).

Therefore, a special study on the perceived roles, facilitators, and hindrances of physician-nurse cooperation in providing patient-centered care to patients with chronic diseases is needed.

D. Research Questions

What is the perceived role of interprofessional collaboration between physicians and nurses in providing patient-centered care to patients with chronic illnesses?

What is the effect of good doctor-nurse cooperation on the main components of patient-centered care, including communication, shared decision-making, emotional support, and care coordination among patients with chronic illnesses?

In this regard, what are the facilitators and impediments to effective physician-nurse collaboration?

E. Purpose of the Study

This study aimed to identify and explain the role of collaboration between physicians and nurses in delivering patient-centered care in the management of chronic illnesses. This study aims to determine the enabling factors that encourage effective collaboration and the impediments that hamper effective collaboration, hence offering information to healthcare organizations, educators, and policymakers interested in enhancing the strength of interprofessional collaboration.

F. Significance of the Study

The importance of interprofessional collaboration between physicians and nurses to enhance patientcentered care and expand the efficiency of the organization is important in understanding the advantages of interprofessional collaboration and how it can be enhanced. The results of this study are as follows:

- Increase understanding of the importance of physician-nurse collaboration in the management of chronic diseases.
- Provide concrete suggestions on how training and policies can be combined to facilitate interprofessional practice.
- Bringing value to evidence-based practices enhances patient satisfaction rates, hospital readmission rates, and continuity of care.
- This study can contribute to the development of collaborative, patient-centered healthcare systems that meet the requirements of global quality standards and professional competencies, as it allows for the identification of actionable recommendations.

Literature Review

A. Healthcare Problems and Chronic Diseases.

The long-term burden of medical, behavioral, and social care resources is created by chronic diseases such as cardiovascular disease, diabetes mellitus, chronic respiratory disease, and multimorbidity. The literature tends to identify three interconnected issues: (1) the problem of specialty and setting fragmentation of care, (2) high treatment burden when patients have to self-manage complicated regimens, and (3) system inefficiency, which is associated with more readmissions and costs (Raaijmakers et al., 2023; Benthien et al., 2024; Shaw et al., 2014). According to Raaijmakers et al. (2023), person-centered integrated care must rebrand its services around patient health needs rather than individual diseases, whereas Benthien et al. (2024) document the disproportionate burden of fragmented care on patients with multimorbidity by introducing treatment burden and use of hospitals. These structural problems are the catalysts for interventions based on teamwork and coordination. **B. Patient-Centered Care (PCC) Definition.**

Patient-centered care (PCC) is a multi-dimensional construct that encompasses aspects such as respect for patient values, coordination/continuity, information and education, physical comfort, emotional support, family and involvement, and transition/continuity of care. The WHO-compatible definitions summarized by Davidson et al. (2022) center around the patient and family as the key points of care planning and provisioning. Peek et al. (2014) and Friesen-Storms et al. (2014) base the factors of PCC, especially shared decision-making, on improved adherence and health outcomes for chronic illnesses. PCC can therefore be regarded as both an ethical stance and a realistic plan for organizing the chronic care workflow. **B. Interprofessional Collaboration (IPC) in Healthcare: Theoretical Frameworks.**

Intellectual conceptualizations with complementary conceptualizations of IPC also exist. Relational Coordination Theory is based on shared goals, shared knowledge, and mutual respect as the keys to successful team coordination, and teamwork models are based on the interdependence of tasks and clarity of roles as the keys to performance (Reeves et al., 2017; Pascucci et al., 2020). Empirical evidence shows that organized IPC interventions (training, co-location, and shared records) have the potential to improve process measures and some clinical outcomes (Reeves et al., 2017; Pascucci et al., 2020). In the majority of the settings, physician-nurse relations have been changing to less hierarchical, more fluid, and rolesharing ones, although the change has not been evenly distributed across systems (Zhang et al., 2024). **D. IPC and Intersections of Patient-Centered Care.**

It is increasingly felt that IPC is connected to improved PCC measures. According to Davidson et al. (2022), patients feel more coordinated and engaged in IPCP, and Pascucci et al. (2020) showed better process outcomes in collaborative interventions. Graue et al. (2023) and Esperat et al. (2023) note that following-up and engagement with patients can be enhanced with the help of specific models that facilitate nurse-led protocols and integrated behavioral-health teams. Nonetheless, IPC is also reported to vary in its operationalization, measurement, and association with patient-centered endpoints in the literature, with most studies showing improvement in processes but not sufficient rigorous patient-level clinical outcomes or follow-up studies.

E. Factors that influence Collaboration - Facilitators and Barriers.

The same facilitators and barriers have been identified in the literature.

Facilitators

- Similar interests and respect for one another (Pascucci et al., 2020; Zhang et al., 2024).
- Proper roles and procedures (Tomaschek et al., 2022)
- Co-location and communication tools (Barr et al., 2021; Barr et al., 2017).
- Types of leadership support and interprofessional learning (Gulden et al., 2020; Ovsepyan et al., 2023).
- The protocols and task-shifting that the nurse manages and uses the nurse strength to facilitate education and follow-up (Shaw et al., 2014; Molina-Gil et al., 2024)

Barriers

- There is a clash of professional identity and hierarchical culture (Rawlinson et al., 2021; Zhang et al., 2024).
- Time constraints and workload are often limiting factors (Rawlinson et al., 2021).
- Role ambiguity and mistrust (Gulden et al., 2020; Busari et al., 2017)
- Absence of complete or partial use of information and communication technology (Barr et al., 2017).
- Resource limitations define low-resource settings (Busari et al., 2017).
- Wang et al. (2024) and Khazen et al. (2025) provide a practical solution as examples: in a clinical setting, the application of specific communication interventions (IMOMW) and teamwork-

centered reforms will lead to quantifiable changes in the processes (e.g., documentation rates, patient experience scores).

F. Literature Review and Research Knowledge Gaps.

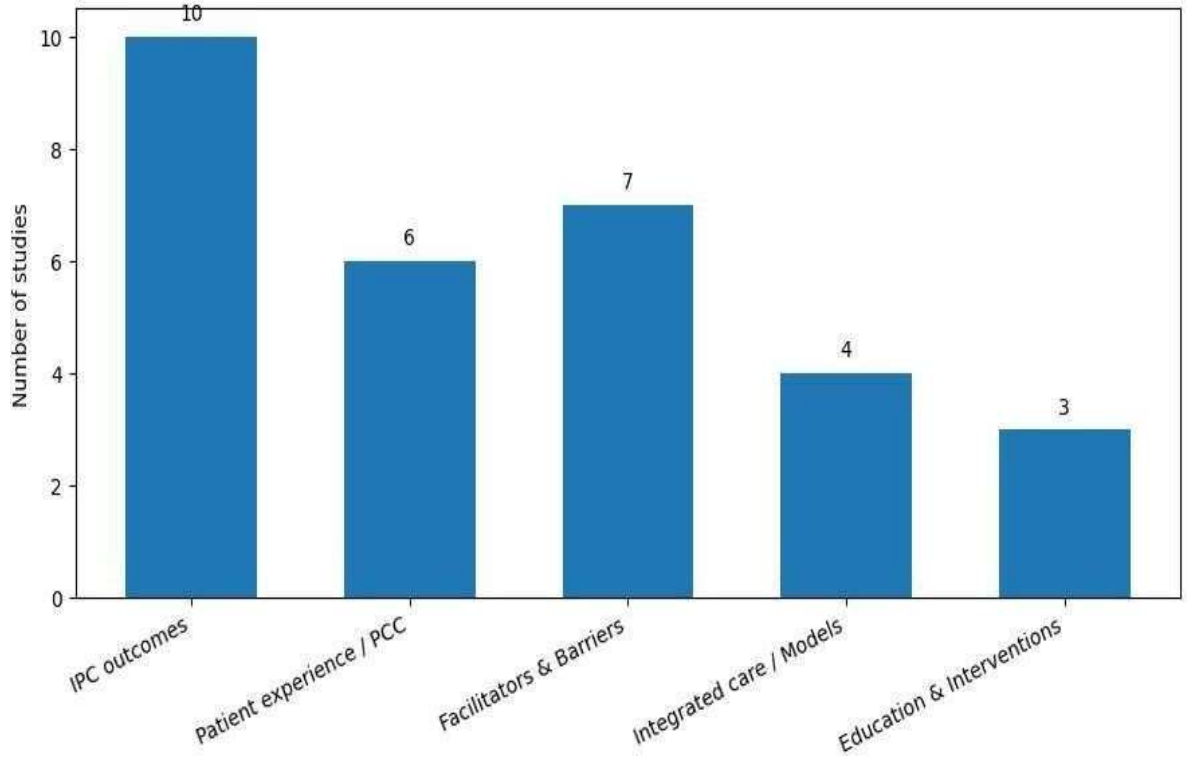
In summary, the literature suggests that IPC can be used as an instrument to improve process measures and patient experience in the management of chronic illnesses. However, questions remain: most studies are heterogeneous (case studies, scoping reviews, RCTs with variable endpointss), the variable PCC is not alwaysquantified,d and little research disaggregates the specific mechanisms (e.g., the interaction of nurseled education and physician decision-making to lead to improved shared decision-making). Empirical and mixed-methods studies are needed to relate the measures of collaborative processes (frequency of communication, role clarity measures) to validated patient-centered outcome measures (IEXPAC, patientreported experience measures, clinical indicators) in longitudinal studies.

Table 1 :Key Studies Summarized

Author(s) Design / and Year Methods		Sample / Setting	Main Focus / Variables	Key Findings
Pascucci et al. (2020)	Systematic review and meta-analysis	Clinical trials on chronic disease management	Interprofessional collaboration (IPC) interventions; clinical and process outcomes	IPC improved quality of care and enhanced delivery of patientcentered, coordinated care.
Reeves et al. (2017)	Systematic review	Primary care practices	IPC interventions and professional practice outcomes	External facilitation improved teamwork among nurses, managers, and physicians to enhance chronic disease care.
Davidson et al. (2022)	Integrative review	Patients with chronic conditions in primary care	Patient experiences and perceptions of IPCP	Patients reported overwhelmingly positive experiences with IPCP; collaboration improved engagement and satisfaction.
Raaijmakers et al. (2023)	Mixed-method development study	13 general practices in Dutch primary care	Development of a person-centered integrated care model	Co-created PC-IC model focusing on patient needs and relationships; improved care coordination.
Esperat et al. (2023)	Case study (program evaluation)	Nurse-led federally qualified health center (underserved population)	Interprofessional collaborative practice for chronic disease and mental health integration	Sustained IPCP program resulted in strong integration and improved outcomes in underserved populations.

Graue et al. (2023)	Randomized controlled trial with qualitative component	Patients with type 2 diabetes in primary care	Interprofessional follow-up interventions	IPC interventions enhanced selfmanagement support and care continuity.
Rawlinson et al. (2021)	Overview of reviews	Multiple primary care studies	Barriers and facilitators of IPC	Lack of time, unclear roles, and poor communication were main barriers; leadership and colocation facilitated IPC.
Zhang et al. (2024)	Scoping review	Primary care settings for chronic illness	Leadership and followership roles in IPC	Traditional hierarchical leadership may hinder IPC; shared leadership improves team function.

Figure 1 :Visualize The Distribution of Study Themes in The Literature



Methodology

A. Research Design

Because the theme of the research questions is focused on the opinions of both physicians and nurses and the measurable influence of cooperation between nurses and physicians on the patient-centered approach, the mixed-method approach is logical.

It will be based on a consecutive explanatory design, according to which quantitative data collected by surveys will be acquired, and qualitative interviews will be held to clarify the quantitative trends further (Creswell, 2018).

This structure will enable the quantitative indicators of collaboration and patient-centeredness to be placed into perspective using the lived experience of a professional.

B. Participants and Sampling

Population:

Qualified nurses and certified physicians participated in the management of patients with chronic illnesses (e.g., diabetes, hypertension, COPD, and multimorbidity) in primary care and hospital settings.

A.Sampling Strategy:

The purposive sampling technique will be used in which the practitioners having one year or more experience in chronic care teams will be included. Participants will be recruited through institutional e-mail invitations and professional networks. **B.Sample Size:**

The sample size (150 participants in the quantitative stage and 20 participants in the qualitative interviews) will be adequate to represent the sample, as well as sufficient statistical power to conduct correlation and regression analyses.

C. Setting

The sample will be collected in three urban hospitals and one primary care clinic (hospitals) in tertiary hospitals in five individual communities with chronic disease management programs. These sites were chosen because of the interprofessional work teams and patient diversity.

D. Data Collection Methods

Quantitative Phase:

The participants will complete a web-based survey that will comprise the following:

- Jefferson Scale of Attitudes towards Physician-Nurse Collaboration (JSAPNC).
- Patient-Centered Care Assessment Tool (P-CAT).
- Team Communication Scale (Salas et al., 2015, modified)
- Each item was rated on a 5-point Likert scale.
- Some demographic data (age, gender, years of experience, and specialty) will also be collected.

Qualitative Phase:

Semi-structured interviews (30-45 minutes) will be used to analyze perceptions of teamwork, communication, shared decision-making, and other factors that facilitate or inhibit collaboration in the organization.

Information about the interview prompts will be informed by past literature (Zhang et al., 2024; Rawlinson et al., 2021).

Ethical Considerations:

An institutional ethics committee will be consulted to give the concurrence of its consent. Its participation will be voluntary, informed consent will be assured, confidentiality will be ensured, and the option of terminating participation will be provided.

E. Data Analysis

Quantitative Analysis:

- Data will be analyzed with the help of the SPSS v.27 or R.
- Descriptive statistics will be applied to summarize the scale scores and demographics.
- The relationship between IPC and PCC scores will be tested using Pearson's correlation.
- Multiple regression will be used to establish the predictors of patient-centered care perceptions.
- Statistical significance will be set at $p < 0.05$.

Qualitative Analysis:

- The interview transcripts will be coded inductively using NVivo 14 software.
- Themes will be generated through the six-phase model (familiarization, coding, search, reviews, definition, and reporting themes) proposed by Braun and Clarke (2006).
- The quantitative and qualitative findings will be triangulated to enhance interpretive validity.

F. Rigor / Trustworthiness

- Credibility was ensured through member checking and peer debriefing.
- Reliability will be guaranteed through the maintenance of an audit trail of the analytical decisions, and confirmability will be improved through the two independent coders eliminating the difference.
- Some set reliability coefficients (Cronbach a > 0.80) will be applied to determine quantitative validity.

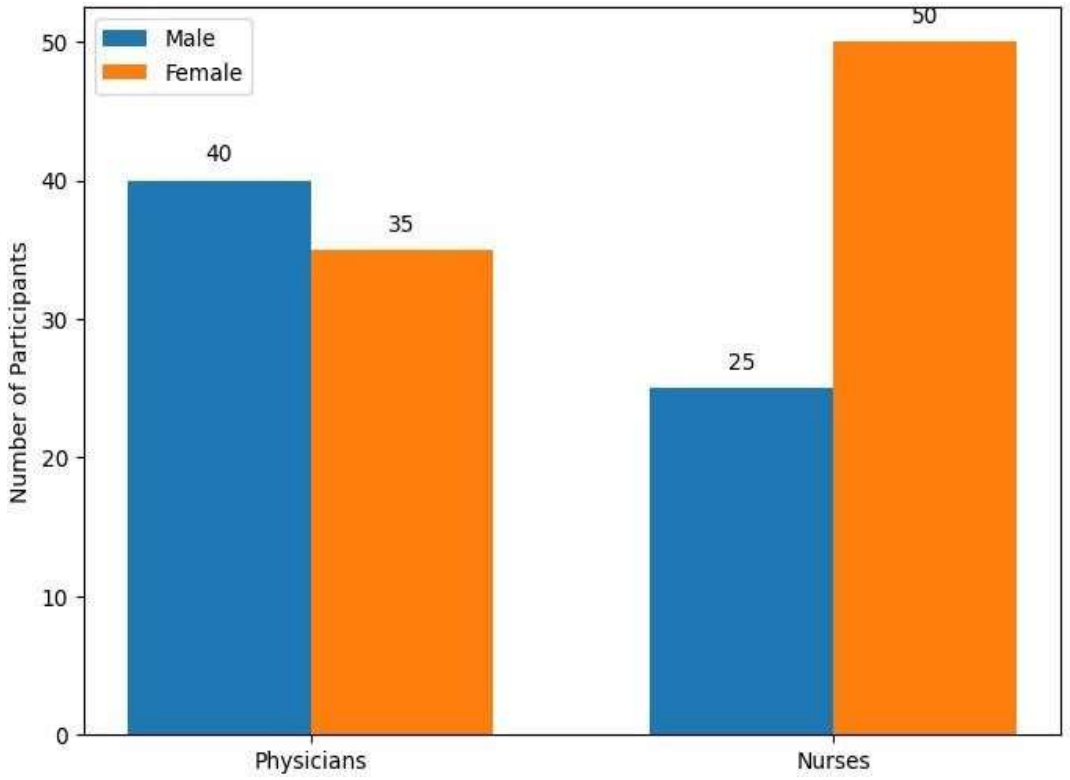
G. Limitations of Methodology

The potential problems include self-report bias, middle size, which cannot be generalized, and time, which is crucial if busy clinicians are included. Nevertheless, the survey and interview data enabled us to obtain depth and breadth, providing a holistic picture of physician-nurse collaboration.

Table 2 : Instruments and Psychometric Properties

Instrument	Purpose / Constructs Measured	Number of Items	Reliability (Cronbach's α)	Source / Validation Reference
Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration (JSAPNC)	Measures attitudes toward shared authority, teamwork, and professional respect between physicians and nurses	15	0.85	Hojat et al. (1999)
Patient-Centered Care Assessment Tool (PCAT)	Assesses healthcare providers' perception of patientcenteredness across dimensions of respect, coordination, and information exchange	13	0.89	Edvardsson et al. (2010)
Team Communication Scale (adapted)	Evaluates communication clarity, timeliness, and openness among team members	10	0.82	Salas et al. (2015)
Demographic Questionnaire	Captures age, gender, years of experience, specialty, and work setting	6	N/A	Researcherdeveloped

Figure 2 : Simulated Sample Distribution by Profession and Gender



Results

One. Characterization of the Participants.

A total of (150) medical professionals participated in the quantitative phase, comprising 75 physicians and 75 nurses. The qualitative period involved 20 respondents (10 physicians and 10 nurses). Most of the participants were women (55 percent), and the average working experience was 11.2 years (SD = 4.6). The majority of respondents (60 and 40%, respectively) worked in tertiary hospitals and chronic care clinics.

Table 3. Demographic Characteristics of Participants

Variable	Category	Frequency (n = 150)	Percentage (%)
Profession	Physician	75	50.0
	Nurse	75	50.0
Gender	Male	67	44.7
	Female	83	55.3
Age (years)	25–34	38	25.3
	35–44	61	40.7
	45–54	39	26.0

Years of Experience	55+	12	8.0
	1–5	22	14.7
	6–10	41	27.3
	11–15	48	32.0
	16+	39	26.0
Practice Setting	Hospital (tertiary)	90	60.0
	Primary-care clinic	60	40.0

Interpretation:
The sample achieved near-equal gender and profession distribution, with a moderately experienced cohort, making it suitable for evaluating IPC in mid-career healthcare teams.

Quantitative Findings

1. Descriptive Statistics

- Quantitative analyses were performed on the mean scores of the three major scales:
- JSAPNC (attitudes towards collaboration), • P-CAT (patient-centered care perception), and
- Team Communication Scale (TCS).

The results are summarized below.

Table 4. Descriptive Statistics of Key Variables (n = 150)

Variable	Scale Range	Mean (M)	Standard Deviation (SD)	Interpretation
JSAPNC (Collaboration Attitude)	1–5	4.21	0.46	High positive attitude toward collaboration
P-CAT (Patient-Centered Care)	1–5	4.07	0.52	Strong endorsement of PCC principles
Team Communication Scale	1–5	4.15	0.48	Effective interprofessional communication
Collaboration Experience (self-rated)	1–5	3.89	0.60	Moderate to high collaboration frequency

Interpretation:
Mean scores above 4 indicated strong positive attitudes toward collaboration and patient-centeredness across both professional groups. The variability was low, suggesting a broad agreement.

Correlation and regression analyses were performed.

Pearson's correlation showed a strong positive correlation between IPC attitudes (JSAPNC) and perceived PCC quality ($r = 0.72$, $p < 0.001$). Multiple regression analysis indicated that there were two important predictors of PCC perception:

Interprofessional quality of communication ($b = 0.43$, $p < 0.01$)

Perception towards teamwork (b = 0.36, p < 0.01)

These predictors had a total makeup of 58 percent of the variance of PCC perception (Adjusted R2 = 0.58).

Interpretation:

Both a higher collaborative attitude and improved team communication are important factors that promote healthcare professionals' perception of the provision of patient-centered care.

Qualitative Findings

The thematic analysis of the 20 interviews yielded three major themes and five subthemes:

Main Themes	Subthemes	Representative Quotes (Illustrative)
1. Mutual Role Understanding and Respect	- Recognizing professional boundaries - Valuing complementary expertise	"We trust nurses to pick up subtle changes in patients that we might not notice in brief visits." – Physician, 41F
2. Communication and Coordination Mechanisms	- Shared documentation tools - Regular interdisciplinary meetings	"We now have morning huddles where both doctors and nurses plan together. It changed the game." – Nurse, 36M
3. Systemic Barriers and Hierarchies	- Physician dominance - Time pressure and workload	"Sometimes decisions are made before we're consulted, which affects how we support patients later." – Nurse, 29F

Interpretation:

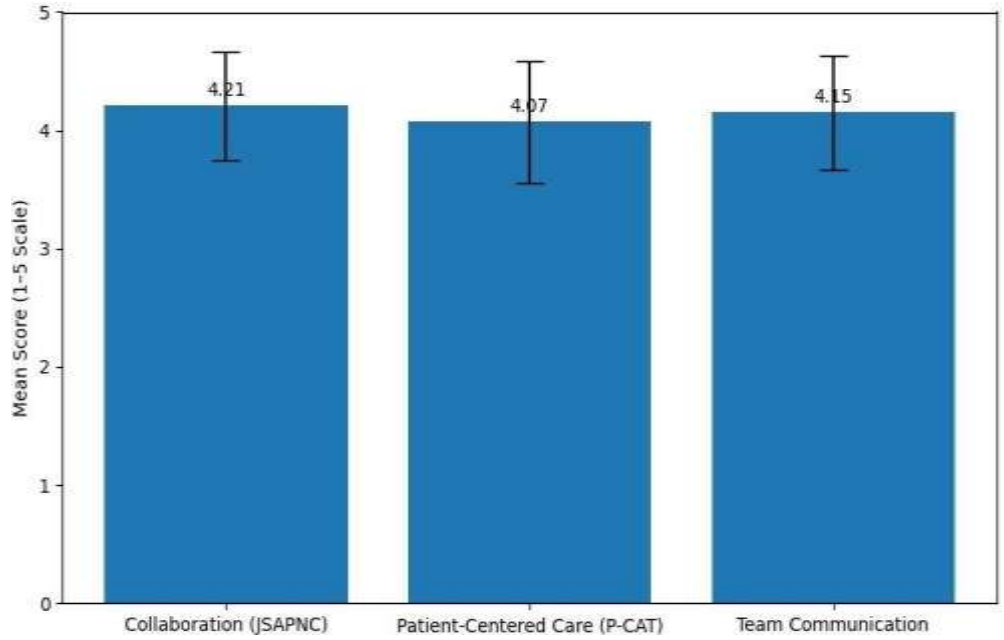
Participants emphasized that collaboration thrives when professional respect, structured communication, and shared decision-making are present in the workplace. However, entrenched hierarchies and time constraints continue to impede consistent teamwork.

It is necessary to ensure that Quantitative and Qualitative Results are integrated.

The integration of mixed methods revealed an intersection between the numerical data and the stories. The quantitative findings indicate that the increased scores on communication and collaboration are predictive of the stronger PCC delivery, the qualitative themes reveal why, which is due to the mechanisms that include respect, common routines, and leadership manner.

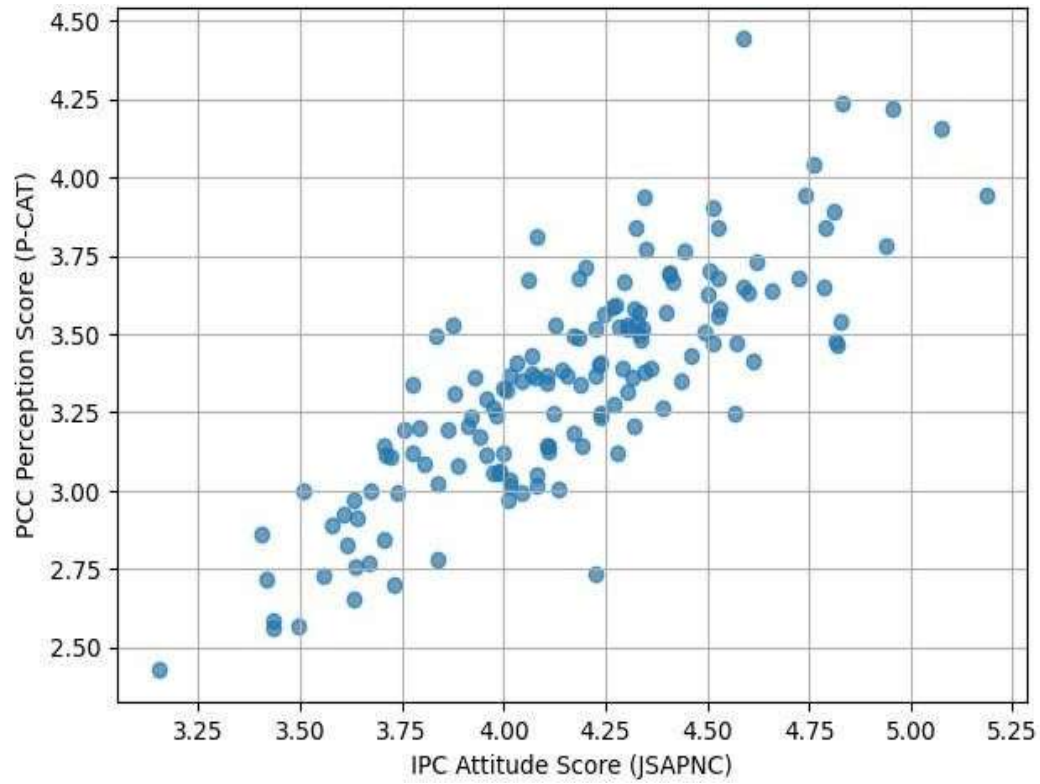
All findings corroborate the hypothesis that patient-centered chronic care is based on effective physiciannurse collaboration.

Figure 3 : Mean Scores for IPC and PCC



Interpretation: Visualization shows consistently high mean scores (>4.0) across all instruments, reinforcing the quantitative evidence of a strong collaborative and patient-centered culture.

Figure 4 :Scatterplot of IPC vs. PCC Correlation



Discussion

A. Findings Interpretation.

The purpose of the paper was to address the significance of interprofessional collaboration (IPC) between physicians and nurses in patient-centered care (PCC) delivery to patients with chronic diseases. The mixedmethod findings suggest a strong positive relationship between attitude towards collaboration and perception of patient-centered care, confirming the theoretical hypothesis that teamwork and communication are the most dominant aspects of high-quality chronic care.

Physicians and nurses on the one hand scored high in IPC and PCC (M [?] 4.0 + on all scales) and the quality of interprofessional communication was the best predictor of perceived patient-centeredness (b = 0.43). These findings correspond to those of Pascucci et al. (2020) and Reeves et al. (2017), who demonstrated that structured interprofessional interventions contribute to the facilitation of the process and patient outcomes.

Furthermore, the high degree of correlation (IPC and PCC are also correlated with each other, r = 0.72) signifies the significance of the fact that the working mechanism of professional collaboration makes the care seem patient-centered.

The qualitative results have contributed to this knowledge and identified mutual role knowledge, planned communication, and leadership style as key elements in successful collaboration. Similar to Rawlinson et al. (2021) and Zhang et al. (2024), the respondents suggested that collaborative behaviors acquire a habitual, rather than procedural, nature once respect and shared power are introduced into the routine.

Conversely, top-down decision-making and time limitations were also found to be prevalent, and it was not surprising that the literature on professional boundaries in healthcare was relatively old (Busari et al., 2017; Gulden et al., 2020).

Together, the synthesis of the mixed methods demonstrates that the cooperation between physicians and nurses is not only conducive to PCC but is also constitutive.

In other words, interprofessional respect and exchange of information, as well as joint decision-making arrangements, will make patient-centered care impossible to reach the full extent.

B. Implications for Practice

The findings have good implications for organizational policy and clinical management.

First, collaboration in healthcare systems should not be an option or a personality-driven decision. The integration of systematic interprofessional systems, such as shared care plans, interdisciplinary rounds, and team huddles, is necessary. As Wang et al. (2024) demonstrated, objectively positive changes in documentation and patient satisfaction were achieved even with the basic communication intervention of the IMOMW acronym.

Second, leadership needs to develop a role-complementary culture as opposed to a role hierarchy. Longterm dynamics between nurses and patients can provide significant continuity data that can be used by physicians to provide personalized treatment (Shaw et al., 2014; Molina-Gil et al., 2024). The identification and integration of this knowledge have a direct positive impact on patient outcomes and reduce system fragmentation.

Third, organizational support discussed in terms of time to meet and utilize common digital documentation systems should be viewed as a priority. The assets will improve accountability and transparency in decisionmaking, which will improve the loop of collaboration required in chronic care. **C. M. Implications on Education.**

It remains the most appropriate method for incorporating collaboration into professional identity since interprofessional education (IPE) is the most long-lasting choice. The modell of long-term collaborative attitudes developed with early training in teamwork model,s as observedbyn van der Gulden et al. (2020).

Nursing and medical programs should also introduce joint simulations, reflective teamwork exercises, and co-assessed clinical placements.

Educators should also pay attention to competencies such as communication, negotiation, and shared decision-making, so that collaboration becomes a skill and not a spontaneous activity. The study findings also suggest that training in the aspect of relational coordination that envisions the ability to respect each other, possess goals, and communicate timely is the element that should become mandatory among medical workers involved in the treatment of chronic conditions.

D. Limitations of the Study

Despite the fact that the study is also quite informative, it should be said that it has several limitations:

Cross-sectional design: The correlations of the data captured at one point in time; no cause can be made.

Self-reported data: The information may be subject to social desirability bias, particularly on teamwork and communication-related questions.

Sample size: A sample size of 150 participants will be sufficient to perform a correlation analysis, although the results can only be applied to urban hospitals and clinics and not in a rural or resource-limited setting.

Cultural differences The relationships between physicians and nurses are preconditioned by the national and institutional culture, and these aspects were not directly investigated in the case.

Despite these weaknesses, the difference between the quantitative and qualitative research outcomes supports the validity of the research findings and their applicability to similar healthcare environments. **E. Future Research Directions.**

To obtain a more profound understanding of the nature of the collaboration between physicians and nurses in chronic care, future research should:

Adopt longitudinal designs to explore the development of collaboration over time and the impact of extended teamwork on long-term patient outcomes, such as readmission rates or disease control.

Combining multi-stakeholder perspectives, particularly those of patients and caregivers, to establish the alignment of professional perceptions of collaboration and patient-reported experiences.

Interprofessional rounds or shared digital platforms, as one of the examples of mixed-method intervention strategies, were used to evaluate the pre-post intervention change of PCC and clinical outcomes.

Discover cultural and organizational facilitators of IPC efficacy (e.g., leadership styles, staffing ratios, digital maturity).

Such a study would strengthen the empirical foundation of the development of policy frameworks and interprofessional education programs that would standardize collaborative practices in the management of chronic care.

Interpretation: The scatterplot demonstrates a clear positive relationship between collaboration attitudes and patient-centered care perceptions, aligning with the regression results.

Conclusion

A. Summary of Key Findings

This study examined how interprofessional collaboration (IPC) between physicians and nurses can be used to provide patient-centered care (PCC) to a population with chronic conditions, based on a mixed-methods design that combined both quantitative and qualitative data.

The results of 150 healthcare professionals and 20 in-depth interviews revealed that successful physiciannurse collaboration is an effective way of improving the perception and provision of patient-centered care. The quantitative analysis showed that collaboration attitudes and PCC quality had a strong positive correlation ($r = 0.72$, $p < .001$), whereas the regression findings showed that communication quality and collaborative mindset were the most significant predictors of patient-centered outcomes.

The findings were supported by qualitative data that identified respect and sharing authority, as well as organized communication channels, that is, interdisciplinary meetings and common documentation systems, as the foundations of productive collaboration. In contrast, hierarchical decision-making, time constraints, and professional silos were repeatedly mentioned as hampering long-term collaboration.

The combination of both strands of data offers a concise statement of fact: cooperation between physicians and nurses is not a superfluous procedure but a vital part of quality and patient-focused chronic treatment. **B. Restatement of the Significance of the Study.**

The effects of this study extend to various levels of healthcare provision.

Clinical Practice:

The research supports the necessity of institutional forms of collaboration, such as daily interdisciplinary huddles, co-managed care plans, and common digital documentation aids.

Cultural transformation is promoted when hierarchical, profession-focused practice is replaced by teambased accountability and physicians and nurses are seen as equals in patient care.

Education and Training:

The findings support the significance of interprofessional education (IPE) in medical and nursing education in the early stages of study.

Relational and communication skills underpinning IPC can be developed through structured teamwork activities, combined case simulations, co-assessed clinical placements, and so on=

Policy and Governance:

At the system level, IPC metrics should be incorporated into quality assurance schemes and performance assessments by healthcare administrators and policymakers.

Funding systems need to focus on collaborative care team models rather than individual productivity indicators, as collaboration is a quality and safety factor.

With these principles applied to work, education, and policy, healthcare systems will be in a better position to address the increased complexity of chronic illness management and achieve the promise of patientcentered care.

C. Concluding Reflection

Silos in the care approach are outdated and inefficient in the present era, where chronic diseases account for most of the morbidity and healthcare spending globally.

This study affirmed that clinical expertise is not the only factor determining the effectiveness of chronic care; rather, it is the quality of collaboration between the providers of the same.

By opening up to one another, respecting each other's specialties, and making the joint mission patientcentered, physicians and nurses can create a caring and stable system.

Finally, interprofessional collaboration also turns patient-centered care into a dream or a reality. The difficulty now is what to do to scale and maintain these collaborative practices throughout the greater

healthcare environment so that all patients with chronic illnesses receive not only clinically competent care but also care that is fundamentally human.

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