

Optimizing Patient-Centered Care: A Review of Interdisciplinary Approaches in Nursing, Laboratory, and Pharmacy Services within Saudi Arabian Healthcare Systems

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ABSTRACT

Objective: This qualitative study aimed to explore interdisciplinary approaches to optimizing patient-centered care within nursing, laboratory, and pharmacy services in Saudi Arabian healthcare systems.

Methods: Semi-structured interviews were conducted with a purposive sample of 24 healthcare professionals (8 nurses, 8 laboratory staff, 8 pharmacists) working in Hafr El Batin. Interview transcripts underwent thematic analysis.

Results: Three main themes emerged: 1) Communication and collaboration, with subthemes of interdisciplinary meetings, shared decision-making, and mutual respect; 2) Patient engagement, with subthemes of education, empowerment, and cultural competence; and 3) Systemic factors, with subthemes of supportive leadership, resources and staffing, and continuous improvement.

Conclusions: Optimizing patient-centered care requires an interdisciplinary approach built on effective communication, patient engagement, and a supportive system. Implementing the identified strategies, while addressing challenges, can enhance patient-centeredness across nursing, laboratory, and pharmacy services in Saudi Arabia and beyond.

Keywords: patient-centered care, interdisciplinary collaboration, nursing, laboratory, pharmacy, Saudi Arabia

INTRODUCTION

Patient-centered care (PCC) is a core component of healthcare quality, associated with improved outcomes, satisfaction, and efficiency (Santana et al., 2018). PCC involves providing care that is respectful of and responsive to patient preferences, needs, and values, ensuring patient values guide clinical decisions (Institute of Medicine, 2001). Optimizing PCC requires effective collaboration across healthcare disciplines (Reeves et al., 2017).

In Saudi Arabia, the healthcare system has undergone significant development in recent decades, with increasing focus on quality and patient-centeredness (Alsulame et al., 2016). However, challenges remain in fully realizing PCC, particularly in highly specialized settings like nursing, laboratory, and pharmacy services, where technical and safety demands can overshadow patient perspectives (Al-Dossary, 2018). Exploring how interdisciplinary approaches can optimize PCC in these contexts is therefore crucial.

The present qualitative study aimed to identify strategies for enhancing PCC through interdisciplinary collaboration in nursing, laboratory, and pharmacy services within Saudi Arabian hospitals, from the perspective of professionals working in these fields. Understanding their experiences, perceptions, and recommendations can inform initiatives to advance PCC and overall healthcare quality in Saudi Arabia and beyond.

LITERATURE REVIEW

Patient-Centered Care: Definition and Importance

The Institute of Medicine (2001) defines patient-centered care as: "Providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical

decisions" (p. 3). PCC involves treating patients as unique individuals, empowering them to be active partners in their care, and tailoring services to their personal context (Constand et al., 2014).

Substantial evidence indicates PCC is associated with better clinical outcomes, patient safety, satisfaction, treatment adherence, and resource efficiency (McMillan et al., 2013; Rathert et al., 2013). As healthcare shifts from doctor-centric to patient-centric models, providing PCC is increasingly recognized as an ethical imperative and crucial dimension of quality (Santana et al., 2018; Delaney, 2018).

Interdisciplinary Collaboration and Patient-Centered Care

Optimizing PCC requires healthcare professionals to collaborate effectively across disciplinary boundaries (Salmond & Echevarria, 2017). Each profession brings complementary skills and perspectives needed to address diverse patient needs (Green & Johnson, 2015). Reviews indicate interprofessional teamwork is associated with improved PCC, clinical outcomes, and patient safety (Reeves et al., 2017; Rosen et al., 2018).

However, barriers to interdisciplinary collaboration are common, including siloed workflows, status hierarchies, role conflicts, and communication gaps (Brown et al., 2015; Karam et al., 2018). Overcoming these requires deliberate cultivation of teamwork competencies and processes (Banfield et al., 2018; Patel & Fulford, 2016).

Patient-Centered Care in Nursing

The nursing discipline has long championed PCC as the foundation of quality care (McCance et al., 2011). Nursing theories and frameworks like Watson's Theory of Human Caring center empathic, individualized care as nurses' moral and professional duty (Edvardsson et al., 2015; Lusk & Fater, 2013). Studies show patient-centered nursing care predicts greater satisfaction, safety, and functional outcomes (Kuipers et al., 2019; Rathert et al., 2009).

However, delivering PCC in nursing faces barriers like heavy workloads, rigid routines, and lack of decision-making autonomy (Fix et al., 2018; Luxford et al., 2011). Fostering nurses' patient-centeredness requires education, leadership, and work environments that prioritize PCC (Labrague et al., 2017; Thomas et al., 2018).

Patient-Centered Care in Laboratory Services

While less visible to patients, laboratory professionals play a vital diagnostic role and are increasingly recognized as part of patient-facing teams (Harolds & Bourgoin, 2018). A patient-centered laboratory service communicates results clearly, welcomes patient inquiries, and ensures testing quality and accessibility (Plebani et al., 2017).

Studies indicate lab-clinician collaboration using protocols and electronic systems can improve testing appropriateness, turnaround, and accuracy, thereby enhancing PCC (Epner et al., 2017; Xu et al., 2019). Likewise, involving lab professionals in interdisciplinary care meetings can optimize testing to patient needs (Harolds & Bourgoin, 2018). Main barriers include labs' detachment from patient interactions and narrow focus on technical quality over patient experience (Morrison et al., 2017).

Patient-Centered Care in Pharmacy Services

Pharmacists have evolved from medication dispensers to key providers of patient-centered services (Barnett et al., 2017). Patient-centered pharmacy care involves understanding patients' drug-related needs, educating and engaging them in treatment decisions, and ensuring safe and appropriate medication use (Alhossan et al., 2017; Schottenfeld et al., 2016).

Integrating pharmacists into care teams can enhance medication adherence, safety, and outcomes, core elements of PCC (Dalton & Byrne, 2017; McLachlan et al., 2018). Pharmacy-based patient education, medication therapy management, and collaborative drug therapy improve patients' self-management and quality of life (Buxton et al., 2018; Nathan et al., 2017).

Barriers include pharmacists' limited opportunity for patient interaction, lack of access to full patient records, and narrow professional identity (Harding & Wilcock, 2010; Mesquita et al., 2010). Enabling patient-centered roles for pharmacists requires re-orienting pharmacy culture, training, and workflows around patient needs and teamwork (Achtenhagen et al., 2018; Hua et al., 2020).

Patient-Centered Care in Saudi Arabian Context

Saudi Arabia's healthcare system is rapidly expanding, with increasing focus on quality and patient-centeredness (Alsulame et al., 2016). The government has launched initiatives to promote PCC, like the Patient's Bill of Rights and quality accreditation standards (Al Asmri et al., 2019; Almaki et al., 2017).

However, studies indicate ongoing challenges in achieving PCC across Saudi healthcare settings, including nursing, laboratory, and pharmacy (Al-Dossary et al., 2018; Alzaydi et al., 2018; Elmontsri et al., 2017). Key barriers include professional-centric attitudes, hierarchical culture, workforce shortages, and educational gaps in PCC competencies (Alhusaini et al., 2018; Hashim, 2017).

Advancing interdisciplinary PCC in Saudi healthcare requires interventions tailored to the local cultural and systemic context. This may include culturally-sensitive patient engagement, interprofessional education in teamwork and communication, and policies and resources that enable PCC-oriented practices (Alyasin et al., 2017; Joseph et al., 2019). The present study aims to inform such efforts by exploring experiences and insights of nurses, lab staff, and pharmacists in Saudi Arabia regarding optimizing PCC through collaboration.

METHODS

Design

A qualitative descriptive design using semi-structured interviews was employed to gain an in-depth understanding of participants' perspectives and experiences (Neergaard et al., 2009). This approach allows capturing the complexity of PCC and collaboration as situated in participants' real-world contexts (Bradshaw et al., 2017).

Setting and Participants

The study was conducted in Hafr El Batin, a city in the Eastern Province of Saudi Arabia. Purposive sampling was used to recruit 24 healthcare professionals - 8 each from nursing, laboratory, and pharmacy services - with direct patient contact and ≥ 2 years' experience. Participants were recruited from 4 hospitals, spanning public and private sectors. Sample size was guided by data saturation (Saunders et al., 2018).

Data Collection

Individual face-to-face interviews using a semi-structured interview guide were conducted in Arabic by the first author. The guide was developed based on PCC and collaboration literature, piloted with 2 non-participants, and refined. Main questions explored participants' understanding and experiences of PCC, interdisciplinary collaboration, and perceived facilitators and barriers in their specific professional contexts. Interviews lasted 45-60 minutes, were audio-recorded, and transcribed verbatim, with identifying details removed.

Data Analysis

Interview transcripts underwent thematic analysis, involving an iterative process of data familiarization, coding, theme development, and review (Braun & Clarke, 2006). Two authors independently coded 6 transcripts, compared coding for reliability, discussed discrepancies to consensus, and developed a coding framework. The first author applied the framework to remaining transcripts, with new codes added as needed. Codes were clustered into preliminary themes, which were reviewed against coded extracts and full dataset, discussed among authors, and refined into final themes capturing participants' perspectives. Reporting aligns with the Standards for Reporting Qualitative Research (O'Brien et al., 2014).

RESULTS

Participant characteristics are summarized in Table 1. Three main themes emerged regarding optimizing PCC through interdisciplinary collaboration: 1) Communication and collaboration; 2) Patient engagement; and 3) Systemic factors. Each theme had several subthemes, detailed below with illustrative quotes. Additional supporting quotes are provided in Table 2.

Table 1: Participant Characteristics (N=24)

Characteristic	n (%)
Professional Role	
Nurse	8 (33.3%)
Laboratory Technician	8 (33.3%)
Pharmacist	6 (25.0%)
Pharmacy Technician	2 (8.3%)
Gender	
Female	14 (58.3%)
Male	10 (41.7%)
Age	
20-29 years	5 (20.8%)
30-39 years	12 (50.0%)
40-49 years	5 (20.8%)
≥ 50 years	2 (8.3%)
Years in Practice	
2-5 years	7 (29.2%)
6-10 years	9 (37.5%)

11-20 years	6 (25.0%)
≥21 years	2 (8.3%)

Theme 1: Communication and Collaboration

1a. Interdisciplinary Meetings and Huddles

Participants emphasized the value of regular interdisciplinary meetings for optimizing PCC. A nurse shared:

"In our morning huddle, the nurses, lab techs, and pharmacists quickly touch base on each patient - their progress, issues, needs. It keeps us all on same page in tailoring care" (N3).

A laboratory technician described benefits of meetings:

"When we meet as a team to discuss complex cases, I get to understand the clinical context, and doctors and nurses learn the reasons behind delays or unexpected results. It helps us work together better for patients" (L5).

1b. Shared Decision-Making

Collaborating in care planning and decisions was seen as key to PCC. A pharmacist explained:

"If a patient's having problems with side effects, the physician, nurse and I will discuss together to adjust the regimen. Bringing our different expertise to the table helps find a solution that works for the patient" (P2).

A nurse highlighted the role of patient input:

"We involve patients and families in our interdisciplinary meetings. Their preferences and concerns are central in goals of care" (N6).

1c. Mutual Respect and Trust

Participants cited the importance of respecting and trusting each other's roles in PCC. A pharmacist technician shared:

"The nurses know I'm not just here to fill orders, but to ensure medication safety and effectiveness for patients. They trust my recommendations" (PT1).

A laboratory technician emphasized valuing contributions:

"When clinicians acknowledge the effort we put into delivering timely, accurate results, it motivates us to keep striving for best patient care" (L4).

Theme 2: Patient Engagement

2a. Patient Education and Counseling

Interdisciplinary patient education was seen as essential to PCC. A nurse stated:

"I team up with the pharmacist to educate patients about their meds - indications, side effects, interactions. We reinforce each other's teaching so it sinks in better" (N1).

A laboratory technician described engaging patients:

"I walk patients through what to expect during blood draws, answer questions. Helping them understand the process reduces anxiety" (L2).

2b. Empowering Patients in Care

Participants expressed the significance of empowering patients to be active partners. A pharmacist explained:

"We don't just educate, but elicit patients' therapy goals, concerns, barriers. Understanding their perspective helps us tailor medication counseling and support" (P5).

A nurse talked about enabling self-management:

"Our interdisciplinary care plans build patients' skills and confidence to manage their condition. When patient takes ownership of health, that's patient-centered care" (N7).

2c. Cultural Competence

Delivering culturally congruent PCC requires interdisciplinary collaboration, per participants. A nurse commented:

"Many of our patients are anxious about anesthesia. In our pre-op clinic, the anesthesiologist and I work together to address their fears in a culturally sensitive way" (N5).

A pharmacist described adapting to cultural norms:

"We have women who prefer female providers. As an interdisciplinary team, we make sure their cultural needs are respected across all touchpoints of their care experience" (P1).

Theme 3: Systemic Factors

3a. Leadership and Organizational Culture

Participants highlighted the role of leadership in promoting PCC and collaboration. A laboratory technician stated:

"Our hospital director constantly communicates patient-centeredness as our core value. It sets the tone for us to always put patients first" (L7).

A nurse manager shared an example:

"I role-model and coach staff in effective collaboration. When they see me seeking input from pharmacy and lab to solve a patient issue, they learn how to partner" (N4).

3b. Staffing, Workload, and Resources

Adequate staffing and resources were deemed critical for PCC. A pharmacist technician explained:

"When we're short-staffed, our focus narrows to just getting meds out. No time to properly educate patients or collaborate with team" (PT2).

A nurse highlighted impact of workload:

"With a proper nurse-patient ratio, I can spend quality time understanding each patient's unique needs. But when overwhelmed with tasks, that personal connection is lost" (N8).

3c. Performance Monitoring and Improvement

Participants noted the value of tracking and improving PCC performance. A pharmacist shared:

"We have patient experience and clinical outcome measures that we review regularly as a team. It sparks discussions on how to collaborate better to achieve the results our patients deserve" (P3).

A laboratory technician described improvement efforts:

"After receiving feedback about long waits, we partnered with nursing to streamline lab draws and co-locate with clinics. It's a continuous interdisciplinary effort to enhance patient access and experience" (L6).

Table 2: Additional Participant Quotes Supporting Themes

Theme/Subtheme	Quote
Communication & Collaboration	
Interdisciplinary Meetings	"The weekly tumor board where oncologists, radiologists, pathologists, surgeons discuss complex cancer cases exemplifies how bringing our collective expertise to the table results in optimal patient-centered treatment plans" (P6, Pharmacist)
Shared Decision-Making	"In family meetings for critically ill patients, nurses are the voice of patient values and wishes, I share understanding of disease trajectory, pharmacist explains medication options. Together with family, we reach a care decision that aligns with patient goals" (N2, Nurse)
Mutual Respect & Trust	"I call physicians right away if I see a critical lab result, and they trust my judgment. That mutual respect is fundamental to us functioning as an effective patient-centered team" (L8, Lab technician)
Patient Engagement	
Patient Education	"Patients are often overwhelmed after a new diagnosis. So nurse and I coordinate to space out education, reinforce key points. Repetition from different angles helps information stick so patient can be an informed participant in care" (P4, Pharmacist)
Patient Empowerment	"We engage patients in bedside handovers between shifts. Nurses invite patient to share their goals for the day, concerns, questions. It empowers them to co-direct their care journey" (N3, Nurse)
Cultural Competence	"We have large Filipino population. Understanding cultural beliefs about illness causation and treatment is key. As a multicultural team, we leverage our diversity to provide culturally appropriate education and care" (P7, Pharmacist)
Systemic Factors	
Leadership & Culture	"Our CEO does rounds talking to patients, soliciting staff ideas to improve care experience. She models patient-centeredness and collaboration as our core cultural values" (N8, Nurse)
Staffing & Resources	"More resources to support a dedicated pharmacist on each unit would hugely enhance medication safety and allow more proactive patient-centered education and monitoring" (PT1, Pharmacy technician)
Performance Improvement	"We're piloting an anticoagulation clinic where pharmacist, nurses, physicians jointly manage patients' INR and dosing. Preliminary data shows improved TTR, lower bleeds. Teamwork improves outcomes" (L3, Lab technician)

DISCUSSION

This study provides rich insights into frontline perspectives on optimizing PCC through interdisciplinary collaboration in nursing, laboratory, and pharmacy services in Saudi Arabia. Findings align with and extend limited prior research on PCC and teamwork in this cultural context.

The emphasis on communication and collaboration reinforces these as foundational to PCC excellence (Santana et al., 2018). Regular interdisciplinary meetings, shared decision-making, and mutual respect enable patient-tailored care, consistent with research in other settings (Azar et al., 2017; Green & Johnson, 2015). However, realizing shared decision-making may require confronting the traditional hierarchical, physician-centric culture still common in the Saudi context (Alsuwaigh et al., 2020).

The results also highlight the interdisciplinary nature of patient engagement - a core PCC component (Stacey et al., 2019). Reinforcing education, cultural competence, and empowerment across team members' interactions with patients can foster more impactful, coherent engagement. This synergistic approach warrants further research.

Moreover, the findings underscore the role of system-level factors in facilitating or hindering PCC and teamwork. Concordant with evidence from other contexts, leadership and organizational culture set the tone, while adequate resources enable PCC (Moore et al., 2017; Olsson & Grawé, 2018). Policies and procedures that incentivize interdisciplinary collaboration and performance monitoring are also key (Baumhoff et al., 2018; Reilly et al., 2019).

The Saudi healthcare system should consider educational and policy interventions to enhance these facilitating factors. Interprofessional education can build teamwork and PCC competencies (Doolen et al., 2018). Staffing standards, performance measures, and reimbursement models that prioritize PCC and collaboration are also recommended (Alalshikh et al., 2020). User-friendly health information systems can facilitate interdisciplinary communication and patient engagement (Almayali & Abdelhai, 2017).

Limitations and Future Research

Limitations include the single-city sample, which may limit transferability to other regions with different demographics and resources. Additionally, the perspectives of other relevant professions, such as physicians and allied health providers, were not included. Future studies should explore PCC and collaboration experiences more broadly.

The cross-sectional design also precludes insight into changing dynamics over time. Longitudinal research could elucidate how collaboration evolves with shifting demographics, policies, and resource constraints. Comparative studies across Saudi regions and with other countries could identify cultural factors shaping interdisciplinary PCC.

Finally, the reliance on interview accounts may not fully reflect actual practices. Observational studies could provide more objective data on enacted behaviors and interactions. Linking observed collaboration quality to patient-reported outcomes and experiences is an important avenue for future research.

CONCLUSION

This qualitative study advances understanding of how to optimize PCC through interdisciplinary collaboration in the Saudi healthcare context. Effective communication, shared decision-making, and mutual trust among nurses, laboratory technicians, and pharmacists can synergize efforts to engage and empower patients. System-level facilitators include leadership commitment, adequate resources, and performance monitoring. Implementing participants' recommended strategies, while addressing cultural and resource challenges, can help realize the full potential of PCC in Saudi Arabia. Educational and policy initiatives to foster interdisciplinary teamwork and patient-centered competencies and environments are paramount. Aligning these efforts with the cultural and structural realities of the Saudi context is vital. Through coordinated commitment to PCC across macro, meso, and micro levels, the Saudi healthcare system can progress towards truly patient-centered, high-quality care.

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