



MULTIDISCIPLINARY APPROACH TO PATIENT CARE: PERSPECTIVES FROM NURSING, RADIOLOGY, PARAMEDICINE, AND PHARMACY PROFESSIONALS IN SAUDI ARABIA

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Abstract

Background: Multidisciplinary collaboration is essential for providing comprehensive, high-quality patient care. However, limited research has explored the perspectives and experiences of healthcare professionals from different disciplines in Saudi Arabia regarding collaborative practice.

Objective: This study aimed to investigate the perceptions, barriers, and facilitators of multidisciplinary collaboration among nursing, radiology, paramedicine, and pharmacy professionals in Saudi Arabia.

Methods: A qualitative descriptive design was used. Semi-structured interviews were conducted with a purposive sample of 20 healthcare professionals (5 nurses, 5 radiological technologists, 5 paramedics, and 5 pharmacists) working in various healthcare settings in Riyadh, Saudi Arabia. Thematic analysis was performed to identify key themes and subthemes.

Results: Four main themes emerged: 1) understanding of multidisciplinary collaboration, 2) benefits of multidisciplinary collaboration, 3) challenges to multidisciplinary collaboration, and 4) strategies to enhance multidisciplinary collaboration. Participants recognized the importance of collaboration for improving patient outcomes, but identified several barriers such as communication issues, role ambiguity, hierarchical structures, and lack of interprofessional education. Strategies to promote collaboration included fostering open communication, clarifying roles and responsibilities, providing interprofessional training opportunities, and leadership support.

Conclusion: Multidisciplinary collaboration is valued by healthcare professionals in Saudi Arabia, but various challenges hinder its effective implementation. Addressing these barriers through interprofessional education, communication skills training, and organizational support



can foster a collaborative practice environment and ultimately improve patient care quality and outcomes.

Keywords: interprofessional collaboration; multidisciplinary teams; healthcare professionals; qualitative research; Saudi Arabia

Introduction

Multidisciplinary collaboration has been increasingly recognized as a key component of high-quality, patient-centered healthcare delivery (World Health Organization [WHO], 2010). It involves healthcare professionals from different disciplines working together to provide comprehensive care to patients with complex health needs (Jasemi et al., 2016). Effective collaboration among healthcare professionals has been associated with improved patient outcomes, reduced healthcare costs, increased job satisfaction, and enhanced patient and provider experience (Reeves et al., 2017).

In Saudi Arabia, the healthcare system has undergone significant reforms in recent years to improve the quality and accessibility of healthcare services (Almalki et al., 2011). One of the strategic goals of the Ministry of Health is to promote integrated and coordinated care delivery through multidisciplinary teamwork (Ministry of Health, 2017). However, limited research has explored the perspectives and experiences of healthcare professionals from different disciplines regarding collaborative practice in the Saudi context.

Nurses, radiological technologists, paramedics, and pharmacists are essential members of the healthcare team, each contributing unique knowledge and skills to patient care. Nurses play a central role in coordinating care, communicating with patients and families, and collaborating with other healthcare professionals to ensure continuity of care (Elsous et al., 2017). Radiological technologists work closely with physicians and other healthcare professionals to perform diagnostic imaging examinations and provide valuable information for patient diagnosis and treatment planning (Al-Hanawi et al., 2020). Paramedics are often the first point of contact for patients in emergency situations and collaborate with emergency department staff to ensure smooth transitions of care (Alshammari et al., 2017). Pharmacists collaborate with physicians, nurses, and other healthcare professionals to optimize medication therapy, educate patients, and prevent medication errors (Alsultan et al., 2021).

Despite the importance of multidisciplinary collaboration, healthcare professionals in Saudi Arabia face various challenges in implementing collaborative practice. These challenges include professional hierarchy, role ambiguity, communication barriers, lack of interprofessional education, and organizational constraints (Alsultan et al., 2021; Elsous et al., 2017). Understanding the perspectives and experiences of healthcare professionals from different disciplines can provide valuable insights into the factors that facilitate or hinder effective collaboration and inform strategies to promote interprofessional teamwork.

Therefore, this study aimed to explore the perceptions, barriers, and facilitators of multidisciplinary collaboration among nursing, radiology, paramedicine, and pharmacy professionals in Saudi Arabia. The specific objectives were to:

1. Describe healthcare professionals' understanding of multidisciplinary collaboration and its importance in patient care.
2. Identify the perceived benefits and challenges of multidisciplinary collaboration from the perspectives of healthcare professionals.
3. Explore strategies to enhance multidisciplinary collaboration in healthcare settings in Saudi Arabia.

Literature Review

Multidisciplinary collaboration has been extensively researched in various healthcare contexts worldwide. Several studies have demonstrated the positive impact of collaborative practice on patient outcomes, healthcare provider satisfaction, and healthcare system efficiency (Reeves et al., 2017). A systematic review by Rosen et al. (2018) found that interprofessional collaboration interventions in healthcare settings improved patient outcomes such as mortality rates, length of stay, and readmission rates.

Nurses' perceptions and experiences of multidisciplinary collaboration have been explored in various studies. A qualitative study by Elsous et al. (2017) investigated nurses' perceptions of teamwork in Palestinian hospitals and found that nurses viewed teamwork as essential for providing high-quality patient care. However, they identified several barriers to effective teamwork, including lack of communication, role ambiguity, and power dynamics. Similarly, a cross-sectional study by Al-Hamdan et al. (2017) examined the perceptions of teamwork among nurses in Jordan and found that nurses had positive attitudes towards teamwork but reported challenges such as workload, lack of time, and interpersonal conflicts.

Radiological technologists' involvement in multidisciplinary teams has been less frequently studied compared to other healthcare professionals. However, a qualitative study by Lundberg and Korducki (2020) explored the experiences of radiographers in interprofessional collaboration and found that they valued teamwork but felt that their role was often misunderstood or undervalued by other healthcare professionals. The authors highlighted the need for interprofessional education and role clarification to enhance collaboration between radiographers and other healthcare team members.

Paramedics play a crucial role in emergency care and collaborate with various healthcare professionals to ensure continuity of care. A qualitative study by O'Meara et al. (2015) investigated paramedics' perceptions of their role in the healthcare system and found that they viewed themselves as an integral part of the healthcare team. However, they reported challenges in collaborating with other healthcare professionals, such as lack of recognition, communication barriers, and differences in clinical practice guidelines.

Pharmacists' role in multidisciplinary teams has been increasingly recognized in recent years. A systematic review by Wang et al. (2020) found that pharmacist-led interventions in collaboration with other healthcare professionals improved medication adherence, reduced medication errors, and enhanced patient satisfaction. However, pharmacists face several barriers to effective collaboration, such as lack of time, limited access to patient information, and resistance from other healthcare professionals (Alsultan et al., 2021).

In the Saudi Arabian context, a few studies have explored healthcare professionals' perceptions and experiences of multidisciplinary collaboration. A cross-sectional study by Alsultan et al. (2021) investigated the attitudes of physicians, nurses, and pharmacists towards collaborative practice in a tertiary hospital in Riyadh. The study found that healthcare professionals had positive attitudes towards collaboration but reported challenges such as communication barriers, lack of trust, and power imbalances. Another qualitative study by AlRuthia et al. (2018) explored the experiences of pharmacists in interprofessional collaboration in a tertiary care setting in Riyadh. The study identified several facilitators of collaboration, such as effective communication, mutual respect, and shared goals, as well as barriers such as lack of time, limited resources, and resistance to change.

Despite the growing body of literature on multidisciplinary collaboration in healthcare, there is a paucity of research exploring the perspectives and experiences of healthcare professionals from different disciplines in Saudi Arabia. This study aims to address this gap by providing an in-depth understanding of the perceptions, barriers, and facilitators of multidisciplinary collaboration among nursing, radiology, paramedicine, and pharmacy professionals in the Saudi context.

Methods

Design

A qualitative descriptive design was used to explore healthcare professionals' perspectives and experiences of multidisciplinary collaboration. Qualitative research is appropriate for gaining an in-depth understanding of complex phenomena and capturing the perspectives of individuals in their natural context (Creswell & Poth, 2018). The descriptive approach allows for a comprehensive summary of the phenomenon of interest in everyday terms, without extensive interpretation or theorization (Sandelowski, 2000).

Setting and Participants

The study was conducted in Riyadh, the capital city of Saudi Arabia, which has a diverse healthcare system comprising public and private hospitals, primary care centers, and specialized clinics. A purposive sampling strategy was used to recruit healthcare professionals from four disciplines: nursing, radiology, paramedicine, and pharmacy. Purposive sampling involves selecting participants based on their knowledge and experience of the phenomenon of interest and their ability to provide rich and diverse perspectives (Patton, 2015).

The inclusion criteria for participants were: 1) licensed healthcare professionals in one of the four disciplines (nursing, radiology, paramedicine, or pharmacy), 2) currently working in a healthcare setting in Riyadh, 3) having at least one year of clinical experience, and 4) willing to participate in the study. The exclusion criteria were: 1) healthcare professionals who were not licensed to practice in Saudi Arabia, 2) those who had less than one year of clinical experience, and 3) those who were unable to communicate in English or Arabic.

A total of 20 healthcare professionals participated in the study, including 5 nurses, 5 radiological technologists, 5 paramedics, and 5 pharmacists. The sample size was determined based on data saturation, which occurs when no new themes or insights emerge from the data (Fusch & Ness, 2015). The characteristics of the participants are presented in Table 1.

Table 1
Characteristics of the Participants (N = 20)

Characteristic	n (%)
Discipline	
Nursing	5 (25%)
Radiology	5 (25%)
Paramedicine	5 (25%)
Pharmacy	5 (25%)
Gender	
Male	12 (60%)
Female	8 (40%)
Age (years)	
25-34	7 (35%)

Characteristic	n (%)
35-44	9 (45%)
45-54	4 (20%)
Years of clinical experience	
1-5	6 (30%)
6-10	8 (40%)
>10	6 (30%)
Highest educational level	
Diploma	3 (15%)
Bachelor's degree	12 (60%)
Master's degree	4 (20%)
Doctoral degree	1 (5%)

Data Collection

Data were collected through semi-structured individual interviews, which allow for in-depth exploration of participants' perspectives and experiences (DeJonckheere & Vaughn, 2019). An interview guide was developed based on the study objectives and the literature review. The guide included open-ended questions and probes to elicit participants' understanding of multidisciplinary collaboration, perceived benefits and challenges, and strategies to enhance collaborative practice. The interview guide was reviewed by two experts in qualitative research and interprofessional collaboration and piloted with two healthcare professionals to ensure clarity and relevance of the questions.

The interviews were conducted between January and March 2022 by two trained research assistants (one male and one female) who were fluent in English and Arabic. The interviews were conducted in the language preferred by the participants (English or Arabic) and took place

in a private room at the participants' workplace or a mutually convenient location. The interviews lasted between 45 and 60 minutes and were audio-recorded with the participants' permission. Field notes were also taken to capture non-verbal cues and contextual information.

Data Analysis

The audio recordings of the interviews were transcribed verbatim and translated into English if conducted in Arabic. The transcripts were checked for accuracy by the research assistants and the principal investigator. Thematic analysis was used to identify patterns and themes across the data set (Braun & Clarke, 2006). The analysis process involved six steps: 1) familiarization with the data through reading and re-reading the transcripts, 2) generating initial codes by systematically coding interesting features of the data, 3) searching for themes by collating codes into potential themes, 4) reviewing themes by checking if they work in relation to the coded extracts and the entire data set, 5) defining and naming themes by refining the specifics of each theme and the overall story, and 6) producing the report by selecting vivid examples and relating the analysis to the research question and literature.

The data were analyzed independently by two researchers (the principal investigator and a research assistant) to ensure rigor and trustworthiness. The researchers met regularly to compare and discuss their findings and resolve any discrepancies through consensus. The themes and subthemes were reviewed by the entire research team to ensure clarity and coherence. The final themes and subthemes were presented in a table with illustrative quotes from the participants.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board at King Saud University (Ref. No. KSU-HE-21-513). All participants provided written informed consent prior to the interviews. The participants were informed about the purpose and procedures of the study, the voluntary nature of participation, and their right to withdraw at any time without consequences. The participants were assured of the confidentiality and anonymity of their responses. The audio recordings and transcripts were stored in a password-protected computer accessible only to the research team. The participants were assigned pseudonyms to protect their identity in the reporting of the findings.

Results

Four main themes emerged from the data analysis: 1) understanding of multidisciplinary collaboration, 2) benefits of multidisciplinary collaboration, 3) challenges to multidisciplinary collaboration, and 4) strategies to enhance multidisciplinary collaboration. The themes and subthemes are presented in Table 2 with illustrative quotes from the participants.

Table 2
Themes and Subthemes with Illustrative Quotes

Themes and Subthemes	and	Illustrative Quotes
Understanding of Multidisciplinary Collaboration	of	
- Definition and key elements		"Multidisciplinary collaboration is when different healthcare professionals work together as a team to provide comprehensive care to patients. It involves communication, coordination, and cooperation among team members." (Nurse 3)
- Importance for patient care		"Collaboration is important because patients have complex needs that cannot be addressed by one discipline alone. By working together, we can provide holistic care and improve patient outcomes." (Pharmacist 2)
Benefits of Multidisciplinary Collaboration	of	
- Improved patient outcomes	patient	"When we collaborate effectively, we can prevent errors, reduce complications, and enhance patient safety. Patients also feel more satisfied when they see that the team is working together for their well-being." (Radiological Technologist 1)
- Enhanced provider satisfaction	provider	"Collaboration makes our work more enjoyable and fulfilling. We learn from each other's expertise and feel supported in providing the best care to patients." (Paramedic 4)
- Increased efficiency and cost-effectiveness		"By collaborating, we can avoid duplication of services, streamline care processes, and use resources more efficiently. This can lead to cost savings for the healthcare system." (Pharmacist 5)
Challenges	to	

Themes and Subthemes	Illustrative Quotes
Multidisciplinary Collaboration	
- Communication barriers	"Sometimes there are misunderstandings or conflicts because of different communication styles or lack of clarity in roles and responsibilities. Language barriers can also make communication difficult, especially

Theme 1: Understanding of Multidisciplinary Collaboration

The participants described multidisciplinary collaboration as healthcare professionals from different disciplines working together to provide comprehensive patient care. They identified key elements of collaboration, such as communication, coordination, cooperation, and shared decision-making. The participants emphasized the importance of collaboration for addressing the complex needs of patients and improving the quality and safety of care.

Theme 2: Benefits of Multidisciplinary Collaboration

The participants identified several benefits of multidisciplinary collaboration, including improved patient outcomes, enhanced provider satisfaction, and increased efficiency and cost-effectiveness. They reported that collaboration helped prevent errors, reduce complications, and enhance patient safety and satisfaction. The participants also described how collaboration made their work more enjoyable and fulfilling by providing opportunities for learning, support, and recognition. They noted that collaboration could lead to more efficient use of resources and cost savings for the healthcare system.

Theme 3: Challenges to Multidisciplinary Collaboration

The participants identified various challenges to effective multidisciplinary collaboration, including communication barriers, role ambiguity and professional hierarchy, lack of time and resources, and limited interprofessional education. They described how different communication styles, language barriers, and lack of clarity in roles and responsibilities could lead to misunderstandings and conflicts among team members. The participants also noted that heavy workloads, competing priorities, and limited resources such as staff, equipment, and space could hinder collaboration. They identified the lack of interprofessional education and training as a significant barrier to developing collaborative competencies.

Theme 4: Strategies to Enhance Multidisciplinary Collaboration

The participants suggested several strategies to enhance multidisciplinary collaboration in healthcare settings. These included fostering open communication and mutual respect, clarifying roles and responsibilities, providing interprofessional education and training, and ensuring organizational support and resources. The participants emphasized the importance of creating a

culture of open communication and respect where everyone feels valued and heard. They suggested using team meetings and other forums to discuss and negotiate roles and responsibilities. The participants highlighted the need for interprofessional education and training at all levels, from undergraduate to postgraduate and continuing professional development. They also emphasized the crucial role of organizational support, leadership, and resources in promoting and sustaining collaborative practice.

Discussion

This study explored the perspectives and experiences of healthcare professionals from nursing, radiology, paramedicine, and pharmacy regarding multidisciplinary collaboration in Saudi Arabia. The findings highlighted the participants' understanding of collaboration as a key component of effective patient care, the perceived benefits and challenges of collaboration, and the strategies to enhance collaborative practice.

The participants' understanding of multidisciplinary collaboration as healthcare professionals working together to provide comprehensive patient care is consistent with the definition provided by the World Health Organization (WHO, 2010). The key elements of collaboration identified by the participants, such as communication, coordination, cooperation, and shared decision-making, are also aligned with the core competencies for interprofessional collaborative practice (Interprofessional Education Collaborative [IPEC], 2016). The participants' emphasis on the importance of collaboration for addressing the complex needs of patients and improving the quality and safety of care is supported by previous research demonstrating the positive impact of interprofessional collaboration on patient outcomes (Rosen et al., 2018).

The benefits of multidisciplinary collaboration reported by the participants, including improved patient outcomes, enhanced provider satisfaction, and increased efficiency and cost-effectiveness, are consistent with the findings of previous studies (Al-Hamdan et al., 2017; Alsultan et al., 2021). The participants' descriptions of how collaboration prevents errors, reduces complications, and enhances patient safety and satisfaction are aligned with the goals of collaborative practice (WHO, 2010). The participants' reports of increased job satisfaction and opportunities for learning and support through collaboration are also supported by previous research (O'Meara et al., 2015).

The challenges to multidisciplinary collaboration identified by the participants, such as communication barriers, role ambiguity and professional hierarchy, lack of time and resources, and limited interprofessional education, are consistent with the barriers reported in previous studies (Alsultan et al., 2021; Elsous et al., 2017). The participants' descriptions of misunderstandings and conflicts due to different communication styles, language barriers, and lack of clarity in roles and responsibilities highlight the need for effective communication and role clarification in collaborative practice (IPEC, 2016). The participants' reports of heavy workloads, competing priorities, and limited resources as hindrances to collaboration are also supported by previous research (Al-Hamdan et al., 2017; AlRuthia et al., 2018). The participants' identification of limited interprofessional education and training as a significant barrier to

developing collaborative competencies underscores the importance of incorporating interprofessional learning opportunities in healthcare education and practice (WHO, 2010).

The strategies to enhance multidisciplinary collaboration suggested by the participants, including fostering open communication and mutual respect, clarifying roles and responsibilities, providing interprofessional education and training, and ensuring organizational support and resources, are aligned with the recommendations for promoting collaborative practice (IPEC, 2016; WHO, 2010). The participants' emphasis on creating a culture of open communication and respect where everyone feels valued and heard is consistent with the principles of effective teamwork (Suter et al., 2009). The participants' suggestion to use team meetings and other forums to discuss and negotiate roles and responsibilities is supported by previous research highlighting the importance of role clarity in collaborative practice (Elsous et al., 2017). The participants' recognition of the need for interprofessional education and training at all levels is aligned with the recommendations for developing a collaborative-ready workforce (WHO, 2010). The participants' emphasis on the crucial role of organizational support, leadership, and resources in promoting and sustaining collaborative practice is also consistent with the evidence on the importance of organizational factors in facilitating interprofessional collaboration (AlRuthia et al., 2018; Alsultan et al., 2021).

The findings of this study have implications for healthcare practice, education, and policy in Saudi Arabia. The study highlights the need to promote a culture of collaboration among healthcare professionals from different disciplines and to provide them with the necessary skills, knowledge, and resources to work effectively in teams. Healthcare organizations should create opportunities for interprofessional interaction, communication, and learning, such as team meetings, case conferences, and joint training sessions. Healthcare education institutions should incorporate interprofessional learning experiences into their curricula to prepare future healthcare professionals for collaborative practice. Policymakers should provide the necessary support and resources for collaborative practice, such as funding for interprofessional education and training, staffing for collaborative teams, and technology for communication and coordination.

The study has several strengths, including the inclusion of healthcare professionals from multiple disciplines, the use of a qualitative approach to gain an in-depth understanding of their perspectives and experiences, and the rigorous data analysis process. However, the study also has some limitations. The sample size was relatively small and may not be representative of all healthcare professionals in Saudi Arabia. The study was conducted in Riyadh and may not reflect the experiences of healthcare professionals in other regions of the country.

The use of a qualitative approach may limit the generalizability of the findings to other contexts. Future research could use larger and more diverse samples, employ quantitative or mixed-methods approaches, and explore the perspectives of other healthcare professionals such as physicians and dentists.

Conclusion

This study explored the perspectives and experiences of healthcare professionals from nursing, radiology, paramedicine, and pharmacy regarding multidisciplinary collaboration in Saudi

Arabia. The findings highlighted the participants' understanding of collaboration as a key component of effective patient care, the perceived benefits and challenges of collaboration, and the strategies to enhance collaborative practice. The participants identified the importance of open communication, role clarity, interprofessional education and training, and organizational support and resources in promoting effective collaboration. The findings have implications for healthcare practice, education, and policy in Saudi Arabia, emphasizing the need to create a collaborative culture, provide interprofessional learning opportunities, and ensure adequate support and resources for collaborative practice. Future research could explore the perspectives of other healthcare professionals and evaluate the effectiveness of interventions to enhance multidisciplinary collaboration in the Saudi context.

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