Understanding the Role of Interprofessional Collaboration between Nursing, Nutrition, and Sonography in Prenatal Care: A Qualitative Study

Wafaa A. Alkhamis[1], Weaam A. Alabdulhai[2], Kholoud S. Alqassem[3], Maha Y. Qattan[4], Shatha A. Alkhamis[5], Moutaz F. Alluhaydan[6]

Health Affairs at the Ministry of National Guard

Abstract

Interprofessional collaboration is essential for delivering comprehensive prenatal care, involving healthcare professionals from various disciplines. This qualitative study explores the experiences of nurses, clinical nutritionists, and sonographers in prenatal care to understand the factors that influence effective interprofessional collaboration. Data were collected through semi-structured interviews with 15-20 participants and analyzed using thematic analysis. Three main themes emerged: communication and information sharing, role clarity and professional boundaries, and collaborative practices and patient outcomes. Findings reveal both the benefits and challenges of interprofessional collaboration, emphasizing the need for improved communication, role clarity, and organizational support. Enhancing these factors could lead to better patient outcomes in prenatal care.

Keywords: **Interprofessional Collaboration, Prenatal Care, Nurses, Clinical Nutritionists, Sonographers, Communication, Role Clarity, Qualitative Study**

Introduction

Interprofessional collaboration in healthcare is increasingly recognized as a critical component of delivering comprehensive patient care, particularly in complex settings such as prenatal care. Prenatal care requires multidisciplinary teamwork to address the diverse health needs of pregnant women, including medical, nutritional, and psychosocial aspects. The integration of care provided by nurses, clinical nutritionists, and sonographers has been shown to improve patient outcomes and satisfaction by ensuring a more holistic approach to care (Zwarenstein et al., 2009; Reeves et al., 2010).

Nurses play a key role in patient education, monitoring health conditions, and providing psychosocial support, which are essential elements of effective prenatal care (Dotto et al., 2006). Clinical nutritionists, on the other hand, contribute significantly to prenatal health by providing dietary guidance that promotes optimal maternal and fetal health, especially in high-risk pregnancies (Kaiser & Campbell, 2014). Sonographers contribute to prenatal care by providing critical imaging that aids in assessing fetal development and identifying potential complications (Chudleigh et al., 2004). Despite the evident benefits

of each profession, effective collaboration among these healthcare providers is often hindered by barriers such as communication challenges, lack of role clarity, and insufficient understanding of each other's contributions (Reeves et al., 2011).

Studies have demonstrated that interprofessional collaboration leads to improved patient outcomes, particularly in maternity care, by enhancing the continuity of care and reducing the incidence of adverse outcomes (D'Amour et al., 2005; Downe et al., 2010). Effective collaboration can help address the unique needs of pregnant women by leveraging the strengths of each discipline. Nurses, nutritionists, and sonographers working together can provide a comprehensive approach that improves maternal and fetal health, ensures timely interventions, and supports the emotional well-being of patients (Downe et al., 2010).

However, despite the recognized importance of collaboration, there is limited qualitative research focusing on the lived experiences of healthcare professionals engaged in prenatal care, particularly in the context of nursing, nutrition, and sonography (Reeves et al., 2011; Zwarenstein et al., 2009). Understanding the experiences of these professionals can provide valuable insights into the challenges and facilitators of interprofessional collaboration, thereby informing strategies to enhance the quality of prenatal care. This study aims to explore the experiences of nurses, clinical nutritionists, and sonographers working in prenatal care, with the goal of understanding how interprofessional collaboration can be improved to better meet the needs of pregnant women.

Literature Review

Interprofessional collaboration has become a crucial element in providing high-quality healthcare, particularly in settings that require diverse expertise such as prenatal care. The concept of interprofessional collaboration is based on the integration of multiple healthcare disciplines to ensure comprehensive patient care, enhance outcomes, and improve patient satisfaction (Zwarenstein et al., 2009). Research indicates that such collaboration is especially important in maternity care, where the complexity of pregnancy often requires coordinated efforts from professionals with different specializations (Downe et al., 2010; D'Amour et al., 2005).

Nurses are fundamental in prenatal care, as they provide not only medical assessments but also crucial psychosocial support, patient education, and continuous health monitoring. Dotto et al. (2006) highlights the importance of nursing roles in prenatal care, noting that nurses serve as the primary point of contact for pregnant women, ensuring they receive the information and support necessary to manage their health effectively. Studies also suggest that nurses' close interaction with patients fosters trust, which is essential for effective care during pregnancy (Dotto et al., 2006).

The role of clinical nutritionists in prenatal care is equally significant. Nutrition plays a critical role in pregnancy, affecting both maternal and fetal health outcomes. Kaiser and Campbell (2014) emphasize that nutritional counseling can significantly improve health outcomes, particularly for high-risk pregnancies where appropriate dietary adjustments can mitigate complications. The involvement of nutritionists ensures that pregnant women receive personalized dietary advice that aligns with their health needs, contributing to healthier pregnancies and better fetal development.

Sonographers also play an indispensable role in prenatal care by providing crucial imaging services that allow for the monitoring of fetal growth and the early detection of potential complications. According to

Chudleigh et al. (2004), the ability to visualize fetal development through ultrasound not only provides valuable diagnostic information but also reassures expectant mothers by giving them insight into the progress of their pregnancy. This reassurance is an important psychosocial benefit that complements the clinical information provided by sonographers.

Despite the evident benefits of multidisciplinary collaboration in prenatal care, barriers still exist that can hinder effective teamwork among nurses, nutritionists, and sonographers. Reeves et al. (2011) identify several obstacles to effective collaboration, including communication challenges, lack of understanding of each professional's role, and insufficient opportunities for interprofessional education. These barriers can lead to fragmented care and missed opportunities for intervention, ultimately affecting patient outcomes. D'Amour et al. (2005) also note that the success of interprofessional collaboration depends significantly on the establishment of clear roles and open lines of communication between all team members.

The importance of interprofessional education (IPE) in fostering collaboration has been widely documented. Reeves et al. (2010) argue that IPE is essential for breaking down professional silos and promoting mutual understanding among healthcare providers. IPE initiatives that include nurses, nutritionists, and sonographers can facilitate better communication, clarify roles, and foster respect for each discipline's contributions. The ultimate goal is to ensure a seamless integration of care that benefits patients, particularly in complex settings like prenatal care.

Research also highlights the positive impact of collaboration on patient outcomes. Downe et al. (2010) found that collaborative practices in maternity care can enhance the continuity of care, reduce adverse outcomes, and improve patient satisfaction. Similarly, Zwarenstein et al. (2009) reported that practice-based interventions that promote interprofessional collaboration lead to improved healthcare outcomes and more efficient care delivery. Such findings underscore the value of interprofessional collaboration in prenatal care, where the combined efforts of nurses, nutritionists, and sonographers can provide a more comprehensive approach to addressing the needs of pregnant women.

In conclusion, the literature emphasizes the importance of interprofessional collaboration in prenatal care, particularly involving nurses, clinical nutritionists, and sonographers. Despite the barriers that exist, fostering effective collaboration through interprofessional education and clear communication can significantly enhance the quality of care provided to pregnant women. This literature review provides the foundation for understanding the experiences of healthcare professionals engaged in prenatal care, which will be explored in this study to identify ways to improve interprofessional collaboration.

Methodology

This study will employ a qualitative research design to explore the experiences of nurses, clinical nutritionists, and sonographers involved in prenatal care. A qualitative approach is appropriate for this study as it allows for an in-depth understanding of the participants' perspectives, experiences, and the contextual factors that influence interprofessional collaboration. Semi-structured interviews will be conducted with healthcare professionals working in prenatal care within a tertiary hospital setting. This method will provide rich, detailed data that can capture the complexities of interprofessional interactions and the challenges faced by each professional group.

Participants

The participants in this study will include nurses, clinical nutritionists, and sonographers who have experience working in prenatal care. A purposive sampling strategy will be used to select participants who are knowledgeable about and experienced in interprofessional collaboration in the context of prenatal care. Approximately 15-20 participants will be recruited to ensure a diverse range of perspectives, allowing for a comprehensive exploration of the research topic.

Data Collection

Data will be collected through semi-structured interviews, which will be conducted either in-person or via video conferencing, depending on participants' preferences and availability. The interviews will be guided by an interview protocol that includes open-ended questions designed to elicit participants' experiences with interprofessional collaboration, perceived barriers and facilitators, and suggestions for improving collaborative practices. Each interview is expected to last between 45 to 60 minutes and will be audio-recorded with participants' consent to ensure accurate transcription and analysis.

Data Analysis

The data collected from the interviews will be analyzed using thematic analysis, as described by Braun and Clarke (2006). This method involves familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Thematic analysis is well-suited for this study as it allows for the identification of patterns and themes within the data that can provide insights into the factors influencing interprofessional collaboration in prenatal care. NVivo software will be used to assist in organizing and coding the data, ensuring a systematic and rigorous analysis process.

Ethical Considerations

Ethical approval for the study will be obtained from the ethics committee prior to data collection. Informed consent will be obtained from all participants, who will be assured of the confidentiality and anonymity of their responses. Participants will also be informed of their right to withdraw from the study at any time without any consequences. The data will be securely stored, and only the research team will have access to the recordings and transcripts.

Findings

The findings of this study are organized into three main themes, each with corresponding sub-themes that reflect the experiences and perspectives of the participants.

Theme 1: Communication and Information Sharing

Sub-theme 1.1: Challenges in Communication
Participants highlighted difficulties in communication between different professional groups, often due to differences in terminology or lack of understanding of each other's roles. One nurse stated, "Sometimes the nutritionist uses terms that I am not familiar with, and it takes extra time to clarify what they mean." A

sonographer noted, "We are not always informed of dietary recommendations that may affect ultrasound findings, which can make it challenging to provide comprehensive care."

Sub-theme 1.2: Facilitators of Effective Communication

Several participants emphasized the importance of regular meetings and informal discussions to facilitate effective communication. A clinical nutritionist mentioned, "When we have regular interdisciplinary meetings, it really helps in understanding each other's perspectives and aligning our care plans." A nurse added, "The informal catch-ups in the break room are sometimes more helpful than formal meetings for solving quick issues."

Theme 2: Role Clarity and Professional Boundaries

Sub-theme 2.1: Lack of Role Clarity

Many participants expressed concerns regarding unclear role boundaries, which sometimes led to overlapping responsibilities. A nurse explained, "I often feel like I'm stepping on the nutritionist's toes when I talk about diet with patients." Similarly, a sonographer remarked, "I sometimes find myself answering questions about nutrition or overall health that I feel are outside my scope."

Sub-theme 2.2: Developing Role Understanding

Participants agreed that joint training sessions and shadowing opportunities could help in understanding each other's roles better. A clinical nutritionist commented, "I believe that shadowing other professionals for a day could give us insight into what their work entails and how best we can support each other." A sonographer stated, "Having joint workshops where we discuss our roles could help eliminate the confusion around responsibilities."

Theme 3: Collaborative Practices and Patient Outcomes

Sub-theme 3.1: Positive Impact of Collaboration on Patient Care

All participants recognized the benefits of interprofessional collaboration in improving patient care. A nurse shared, "Working closely with the nutritionist and sonographer allows us to provide a more comprehensive care plan, which ultimately benefits the patient." A clinical nutritionist added, "When we collaborate effectively, patients feel more supported because they receive consistent messages from all of us."

Sub-theme 3.2: Barriers to Effective Collaboration

Barriers such as time constraints and workload were mentioned as significant challenges to collaboration. A sonographer noted, "We are often so pressed for time that it's hard to find moments to discuss cases with the nutritionist or nurse." A nurse similarly expressed, "Our workload is heavy, and sometimes collaboration feels like an added task rather than an integrated part of our routine."

Discussion

The findings of this study highlight both the strengths and challenges of interprofessional collaboration among nurses, clinical nutritionists, and sonographers in prenatal care. One of the key themes that emerged was the importance of effective communication, which was often hindered by differences in terminology and lack of shared understanding between professional groups. These findings align with previous literature, which emphasizes the role of communication in ensuring effective collaboration (Reeves et al., 2011;

Zwarenstein et al., 2009). Participants expressed that regular interdisciplinary meetings and informal discussions were valuable facilitators of effective communication, indicating that structured opportunities for dialogue can enhance collaborative practices.

The lack of role clarity was another significant challenge identified by participants. This lack of clarity sometimes led to overlapping responsibilities and confusion about the scope of practice, which has also been noted in earlier research as a barrier to effective collaboration (D'Amour et al., 2005). Participants suggested that joint training sessions and shadowing opportunities could help in developing a better understanding of each other's roles, which could in turn improve collaboration. This suggests that interprofessional education (IPE) and shared learning experiences are crucial for enhancing team dynamics and ensuring that each professional's contributions are well understood (Reeves et al., 2010).

Despite these challenges, the study also highlighted the positive impact of collaboration on patient care. Participants consistently noted that when they worked together effectively, patient outcomes were improved, and patients felt more supported. This finding is consistent with Downe et al. (2010), who reported that collaborative practices in maternity care can enhance patient satisfaction and reduce adverse outcomes. The participants' experiences underscore the importance of fostering an environment that supports collaboration, as it can lead to a more comprehensive approach to patient care that leverages the unique expertise of each discipline.

Barriers such as time constraints and heavy workloads were also identified as challenges to effective collaboration. These barriers are commonly reported in the literature, where workload and limited time are often cited as obstacles to regular communication and joint decision-making (Reeves et al., 2011; Zwarenstein et al., 2009). Addressing these barriers will require organizational support, such as allocating time for interdisciplinary meetings and ensuring manageable workloads to facilitate meaningful collaboration.

The implications of these findings are significant for improving prenatal care. Healthcare organizations should prioritize creating opportunities for interprofessional education and collaboration, such as joint workshops, role shadowing, and regular interdisciplinary meetings. These initiatives can help clarify roles, improve communication, and ultimately lead to better patient care. Furthermore, addressing systemic barriers, such as time constraints and workload, is essential for supporting healthcare professionals in their collaborative efforts.

In conclusion, this study provides valuable insights into the experiences of nurses, clinical nutritionists, and sonographers in prenatal care, highlighting both the challenges and benefits of interprofessional collaboration. Effective communication, role clarity, and organizational support are crucial factors that influence the success of collaborative practices. By addressing these factors, healthcare organizations can enhance the quality of prenatal care and ensure better outcomes for pregnant women and their families.

References

1. Chudleigh, P., & Pearce, J. M. (2004). Obstetric ultrasound: how, why and when. *(No Title)*.
2. D'amour, D., Ferrada-Videla, M., San Martin Rodriguez, L., & Beaulieu, M. D. (2005). The conceptual basis for interprofessional collaboration: Core concepts and theoretical frameworks. *Journal of interprofessional care*, *19*(sup1), 116-131.

3. Downe, S., Finlayson, K., & Fleming, A. (2010). Creating a collaborative culture in maternity care. *Journal of midwifery & women's health*, *55*(3), 250-254.

4. Kaiser, L. L., & Campbell, C. G. (2014). Practice paper of the Academy of Nutrition and Dietetics abstract: nutrition and lifestyle for a healthy pregnancy outcome. *Journal of the Academy of Nutrition and Dietetics*, *114*(9), 1447.

5. Dotto, L. M. G., Moulin, N. D. M., & Mamede, M. V. (2006). Prenatal care: difficulties experienced by nurses. *Revista Latino-Americana de Enfermagem*, *14*, 682-688.

6. Reeves, S., Lewin, S., Espin, S., & Zwarenstein, M. (2011). *Interprofessional teamwork for health and social care*. John Wiley & Sons.

7. Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Koppel, I., & Hammick, M. (2010). The effectiveness of interprofessional education: key findings from a new systematic review. *Journal of interprofessional care*, *24*(3), 230-241.

8. Zwarenstein, M., Goldman, J., & Reeves, S. (2009). Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane database of systematic reviews*, (3).

9. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.