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Analysis of Interprofessional Collaboration in the Implementation of Midwifery Led Care at Brawijaya University Hospital

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Background: Effective interprofessional collaboration is crucial in implementing the Midwifery-Led Care (MLC) model to improve the quality of midwifery services. The recently initiated implementation of MLC at RSUB (Brawijaya University Hospital) requires an evaluation of interprofessional collaboration.
Objective: To evaluate interprofessional collaboration in the implementation of MLC at RSUB using the Interprofessional Collaboration Measurement Scale (IPCMS) to identify the strengths and weaknesses of interprofessional collaboration.
Method: This study used a quantitative method. Quantitative data were collected through the IPCMS questionnaire completed by various healthcare professionals at RSUB, including midwives, doctors, nurses, pharmacists, nutritionists, and management.
Results: The results indicate a variation in collaboration scores, with differences in communication, accommodation, and isolation scores among professions. Midwives and doctors showed significant differences in their levels of participation and perceptions of collaboration.
Conclusion: Challenges remain in terms of communication, accommodation, and isolation among different professions at RSUB. To improve service quality, it is essential for the hospital to enhance cross-professional collaboration with a focus on reducing isolation, increasing accommodation, and improving interprofessional communication.
Keywords: Interprofessional collaboration, Midwifery-Led Care, communication, accommodation, isolation.

1. Introduction

In recent decades, a collaborative approach in healthcare practice has increasingly been recognized as a vital factor in improving service quality, including in midwifery care. One midwifery care model currently developing and being implemented in various countries, including Indonesia, is the Midwifery-Led Care Model (MLCM). This model emphasizes midwife-led care, with principles of partnership, continuity of care, the normality of pregnancy and childbirth processes, and a women-centered approach (1). At Brawijaya University Hospital (RSUB), efforts to implement the MLCM have been undertaken to provide more holistic and quality care for mothers and infants, as well as to support a safe and comfortable childbirth process.

However, interprofessional collaboration among midwives, doctors, nurses, and other healthcare providers in implementing this model still faces various challenges. Effective collaboration is crucial, as it not only ensures good coordination among professionals but also maximizes the role of midwives in providing optimal care(2). Failure to establish effective collaboration can reduce service effectiveness, ultimately affecting the quality of care received by mothers and infants(3).

In midwifery, interprofessional collaboration is increasingly important due to the multidimensional nature of midwifery services. The processes of pregnancy, childbirth, and postpartum require excellent coordination among various health professions. When collaboration is effective, midwives can work more independently within a supportive team framework to provide timely, high-quality care(4). Conversely, if interprofessional collaboration is ineffective, there is a higher risk of miscommunication and decreased service quality(5). For RSUB as a teaching hospital, an added challenge lies in ensuring that collaborative practices can be well-implemented by healthcare professionals working in an academic environment.

Several studies in the healthcare field have demonstrated that interprofessional collaboration is key to improving the quality of health services(6). Specifically, in midwifery care, effective collaboration between midwives, obstetricians, nurses, and other healthcare providers is essential to ensure the safety of mothers and infants(7). Studies indicate that the success of MLCM implementation is heavily influenced by the extent to which interprofessional collaboration is maintained, especially in hospital environments where medical hierarchy sometimes prevails(8).

The presence of this hierarchy often places midwives in a more subordinate position than doctors, especially in critical decision-making related to childbirth. This can impact the level of autonomy midwives have in providing care according to MLCM principles(9). If interprofessional collaboration is not well-established, midwives may feel marginalized in the decision-making process, reducing the effectiveness of MLCM implementation. This may also lead to dissatisfaction among mothers receiving services, as they may not experience fully women-centered care(10).

This issue can also impact the psychosocial aspects of the healthcare providers involved. Studies have shown that when communication and coordination within healthcare teams are ineffective, the risk of burnout among midwives and nurses increases(11). Additionally, failure

in interprofessional collaboration can increase the perceived workload of each profession due to a lack of clear task division and effective coordination(12). This can be a primary cause of job dissatisfaction among healthcare providers, ultimately negatively impacting the quality of midwifery services.

To address this issue, the methodological approach used in this study is a quantitative descriptive design with a cross-sectional method. This method was chosen as it allows a detailed description of how interprofessional collaboration is implemented in Midwifery-Led Care at RSUB at a given time and measures the perceptions and effectiveness of interprofessional collaboration among healthcare professionals(13). Using questionnaires as the data collection instrument aligns with previous studies that evaluated interprofessional collaboration in the context of midwifery services(14).

With this approach, the study will focus on measuring key aspects of interprofessional collaboration, such as communication, team coordination, mutual respect, and collaborative decision-making. Additionally, this research will assess the extent to which the principles of partnership, continuity of care, normality, and women-centered care are implemented within the collaborative framework at RSUB. Similar approaches have been used in studies at other hospitals to measure the effectiveness of health teams in providing collaborative midwifery services(15).

The results of this study are expected to significantly contribute to enhancing interprofessional collaboration quality at RSUB, particularly in the context of MLCM implementation. By analyzing the factors that affect interprofessional collaboration, this study can offer practical recommendations to improve MLCM implementation effectiveness, from hospital policy, healthcare workforce development, to better collaboration guidelines.

More broadly, the results of this study may serve as a reference for other teaching hospitals in Indonesia aiming to implement MLCM as part of their midwifery services. Since interprofessional collaboration is a key to MLCM success, this study's findings are expected to help address issues commonly faced by healthcare teams in various healthcare facilities.

Furthermore, this research will also contribute to the existing literature on interprofessional collaboration in healthcare, particularly in midwifery care. The results of this study can be used by academics and healthcare practitioners to develop more effective training and education models to enhance interprofessional collaboration. Thus, this study is beneficial not only for RSUB but also for the broader fields of midwifery and healthcare.

2. Methods

This study is a descriptive quantitative research with a cross-sectional approach, aimed at analyzing interprofessional collaboration among healthcare professions at the hospital in implementing the Midwifery-Led Care Model (MLCM). The research was conducted at Brawijaya University Hospital (RSUB) over a period of 2 months. The study population comprised healthcare providers involved in MLCM-based midwifery services, including midwives, doctors, nutritionists, nurses, and the managerial team. Respondents were selected using purposive sampling.

A structured questionnaire was used to measure the level of interprofessional collaboration based on several key indicators: Interprofessional Communication, Team Coordination, Collaborative Decision-Making, Mutual Respect, Recognition among professions, and Continuity of Care. A Likert scale of 1-5 was used to assess each aspect of collaboration. The collected data were analyzed descriptively to provide an overview of the level of interprofessional collaboration in MLCM implementation. Regression analysis was conducted to determine the contribution of each collaboration aspect to the effectiveness of MLCM.

3. Results

Table 1. Characteristics of Respondents

Profession	Nutritionist	Pharmacist	Midwife	Obstetrician	General Practitioner	Management	Nurse
Total (n)	2	1	5	1	2	3	4
Age (mean)	38	34	34.2	35	30	35.67	37
Years of Service	7.5	8	8	0.5	4.5	8	10.5
Working Hours per Week	42.5	45	40	20	40	41.67	40
Experience in Current Profession (years)	12	9	8	1.5	5.5	11.67	15.75
Experience in Other Professions (years)	4	0	0.4	0	2.5	1	0

This table summarizes the demographic and professional characteristics of respondents participating in the study, including their average age, years of service, weekly working hours, years of experience in their respective professions, and experience outside their primary field. The diversity of experience and service duration provides a context for understanding the interprofessional collaboration dynamics within the MLCM framework at RSUB.

Table 2. Analysis for Interprofessional Collaboration Measurement Scale (Mean Scores by Profession)

Profession	Communication Score	Accommodation Score	Isolation Score
Nutritionist	2.4	3.5	2
Pharmacist	2.6	2.6	2.33
Midwife	2.5	2.47	1.61
Obstetrician	2.8	2	2
General Practitioner	2.3	3	1.67
Management	2.8	3.13	2.56
Nurse	2.75	2.9	2

This table displays the mean scores for interprofessional collaboration metrics, including Communication, Accommodation, and Isolation, categorized by profession. The scores suggest varying levels of perceived collaboration among different professions. For example, management and obstetricians have the highest communication scores, while midwives report the lowest isolation scores, indicating a perceived lower sense of separation in their collaborative environment.

Based on the IPCMS questionnaire results, which assessed respondents at RSUB across three categories: Communication Score, Accommodation Score, and Isolation Score. the average scores were as follows: the Communication Score averaged 2.59, the Accommodation Score was slightly higher at 2.80, and the Isolation Score was the lowest at 2.02. These results provide a comparative insight into the strengths and weaknesses of interprofessional collaboration at RSUB.

The analysis by profession reveals varying strengths and areas for improvement in interprofessional collaboration. Nutritionists have a slightly below-average communication score (2.4) but the highest accommodation score (3.5), suggesting strong integration into collaborative practices with some need for better communication. Pharmacists score near average in communication (2.6), lower in accommodation (2.6), and slightly above average in isolation (2.33), indicating a balanced but limited collaborative role that could benefit from greater support. Midwives show average communication (2.5), slightly below-average accommodation (2.47), and the lowest isolation score (1.61), reflecting effective integration with minimal feelings of isolation. Obstetricians achieve the highest communication score (2.8) but the lowest accommodation score (2.0), highlighting strong communication but challenges in flexibility and mutual support. General practitioners exhibit slightly below-average communication (2.3), good accommodation (3.0), and low isolation (1.67), indicating positive engagement with minor communication challenges. Management scores high in both accommodation (3.13) and communication (2.8) but has the highest isolation score (2.56), suggesting active collaboration yet a sense of separation from clinical teams. Lastly, nurses show an above-average communication score (2.75) and moderate isolation (2.0), reflecting strong participation in collaborative efforts.

In general, communication within the healthcare team at RSUB is generally good, with minor variations across professions. Nutritionists and management show the strongest accommodation scores, while obstetricians may need support to enhance this aspect. Midwives report the lowest isolation, suggesting better integration in team collaboration.

This data highlights specific areas for improvement in interprofessional collaboration at RSUB, particularly for professions with higher isolation scores or lower accommodation scores, to foster a more cohesive and supportive work environment.

Table 3. Pairwise Comparisons Between Professions

Profession 1	Profession 2	Communication Diff	Accommodation Diff	Isolation Diff
Nutritionist	Pharmacist	-0.2	0.9	-0.33
Nutritionist	Midwife	-0.1	1.03	0.39
Nutritionist	Obstetrician	-0.4	1.5	0

Profession 1	Profession 2	Communication Diff	Accommodation Diff	Isolation Diff
Nutritionist	General Practitioner	0.1	0.5	0.33
Nutritionist	Management	-0.4	0.37	-0.56
Nutritionist	Nurse	-0.35	0.6	0
Pharmacist	Midwife	0.1	0.13	0.72
Pharmacist	Obstetrician	-0.2	0.6	0.33
Pharmacist	General Practitioner	0.3	-0.4	0.67
Pharmacist	Management	-0.2	-0.53	-0.22
Pharmacist	Nurse	-0.15	-0.3	0.33
Midwife	Obstetrician	-0.3	0.47	-0.39
Midwife	General Practitioner	0.2	-0.53	-0.06
Midwife	Management	-0.3	-0.67	-0.94
Midwife	Nurse	-0.25	-0.43	-0.39
Obstetrician	General Practitioner	0.5	-1	0.33
Obstetrician	Management	0	-1.13	-0.56
Obstetrician	Nurse	0.05	-0.9	0
General Practitioner	Management	-0.5	-0.13	-0.89
General Practitioner	Nurse	-0.45	0.1	-0.33
Management	Nurse	0.05	0.23	0.56

This table shows the pairwise differences between professions for Communication, Accommodation, and Isolation scores, helping to identify specific disparities in interprofessional collaboration measures.

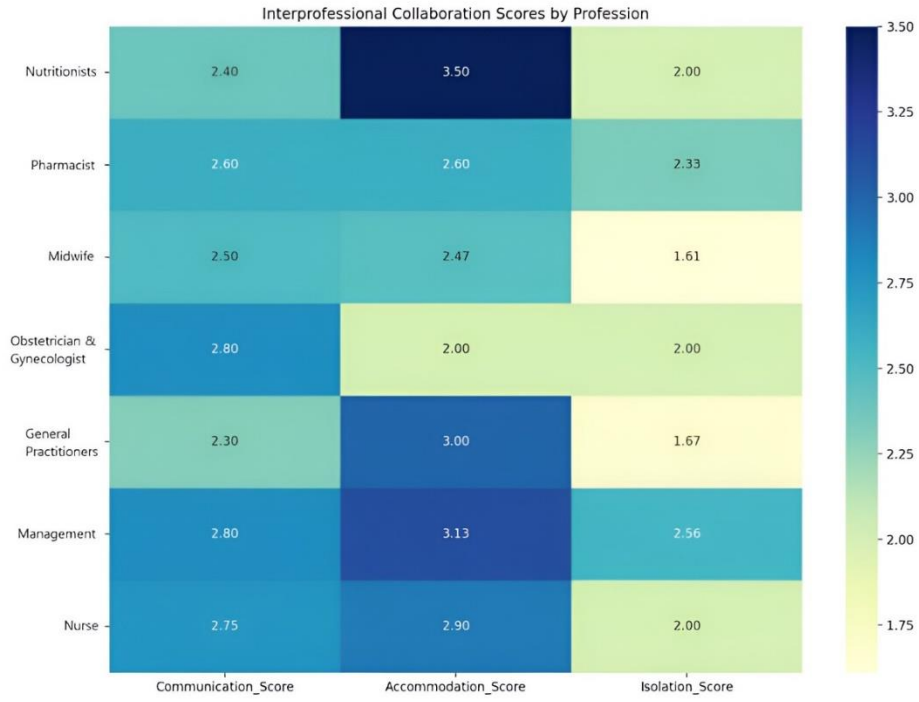
From the table, several key insights emerge about communication differences among healthcare professionals. The largest gap in communication is between Obstetrics Specialists and General Practitioners, with a difference of 0.5, suggesting that Obstetrics Specialists communicate more effectively, possibly due to differences in their style or level of involvement in interprofessional collaboration. In contrast, the gap between Nutritionists and General Practitioners is minimal at 0.1, indicating comparable communication levels. However, both Nutritionists and Obstetrics Specialists score lower than Management in communication, with a similar negative difference of -0.4, implying a need for Management to improve communication within the healthcare team.

Accommodation differences reveal stark contrasts in adaptability among professionals. The most significant difference is between Nutritionists and Obstetrics Specialists, with a gap of 1.5, highlighting Nutritionists as more adaptable in collaborative settings. General

Practitioners also score higher in accommodation compared to Obstetrics Specialists, with a gap of -1, suggesting greater openness to input from colleagues. However, Management struggles with accommodation in several comparisons, particularly with Midwives (-0.67) and General Practitioners (-0.13), indicating challenges in fostering flexibility in collaborative environments.

Isolation scores highlight perceptions of connection within interprofessional teams. Midwives feel more isolated than Management, with the largest difference of -0.94, suggesting that Midwives may experience barriers to effective collaboration. In contrast, Pharmacists feel less isolated compared to Midwives, with a difference of 0.72, indicating better integration. Similarly, General Practitioners report feeling more isolated than Management, with a gap of -0.89, reflecting a need for strategies to enhance their collaborative engagement.Overall, communication varies, with Obstetrics Specialists having better communication scores compared to General Practitioners, while Management tends to have slightly lower communication scores than their peers.

Nutritionists demonstrate significantly better accommodation, whereas Obstetrics Specialists and Management tend to have lower scores, indicating a need for greater adaptability in interprofessional collaboration. Midwives and General Practitioners report feeling the most isolated, in contrast to Management, which appears to be more integrated into the collaborative process. These findings shed light on gaps in interprofessional collaboration at RSUB, emphasizing the need for targeted improvements, particularly in enhancing adaptability and reducing feelings of isolation.



Picture 1. Heatmap Visualization of the Interprofessional Collaboration

4. Discussion

Interprofessional collaboration is key to delivering effective and high-quality healthcare services. In the context of midwifery-led care (MLC), which places midwives at the center of maternal and child healthcare, collaboration with various other professionals is crucial to ensure holistic, comprehensive, and patient-centered care. The Midwifery-Led Care model is grounded in the principles of continuity of care, partnership, normality, and woman-centered care. Within this framework, multiple hospital-based professions must collaborate to achieve shared goals in maternal and child healthcare.

This study utilized the Interprofessional Collaboration Measurement Scale (IPCMS) to evaluate three essential dimensions of interprofessional collaboration: communication, accommodation, and isolation. Based on the results obtained from respondents at RSUB and the pairwise comparison data, this article aims to discuss the challenges and opportunities that arise in interprofessional collaboration during MLC implementation, as well as how these findings align with those of other international studies.

Studies on interprofessional collaboration, including those that use tools like the Interprofessional Collaboration Measurement Scale (IPCMS) or the Interprofessional Collaboration Scale (ICS), provide insight into how healthcare teams work together across different care settings. Research highlights several factors that influence collaboration, such as communication, accommodation (adaptability in working together), and isolation (feeling of being disconnected from the team). Effective communication is found to be especially important in promoting positive relationships and improving outcomes in both prenatal and postnatal care (16)(17).

Based on the IPCMS results, there is a significant variation in scores for communication, accommodation, and isolation among different professions. Obstetrics-Gynecology specialists scored the highest in communication, while General Practitioners had lower communication scores. Nutritionists scored the highest for accommodation, while Management often showed lower levels of isolation compared to other professions.

1. Communication

Effective communication is crucial in interprofessional collaboration to ensure that all team members share a unified understanding of patient care. Research indicates that poor communication is often a leading cause of medical errors(18). In this context, the communication score difference between Obstetrics-Gynecology specialists and General Practitioners suggests potential challenges in coordinating care. Poor communication may hinder the transfer of essential information, particularly within the MLC context, where clinical decisions frequently require input from various professionals. Research on collaborative practices underscores the benefits of involving all healthcare professionals, including nurses and midwives, in decision-making processes. For instance, midwives' contributions in patient-centered care, especially in contexts like midwifery-led models, often remain limited by hierarchical structures. Ensuring their inclusion can improve communication, decision quality, and patient outcomes by making midwives feel more integrated and valued(19).

2. Accommodation

Accommodation reflects a profession's ability to adapt and accept input from colleagues. In this study, the highest accommodation score was found in Nutritionists, indicating their flexibility in team collaboration. Conversely, Obstetrics-Gynecology specialists had a low accommodation score (2.0), potentially indicating challenges in accepting input from other professions. This could be a significant issue in the context of midwifery-led care, where the principle of "woman-centered care" requires the participation of various professions to create a supportive environment that meets the needs of mothers and infants. General Practitioners, with higher accommodation scores than specialists, tend to be more open to cross-professional collaboration. This finding aligns with research by Susannah (2024), which highlights that flexibility and openness to feedback are essential for successful interprofessional collaboration(15).

3. Isolation

The isolation dimension reflects how isolated or separated each profession feels from interprofessional collaboration. In this study, Midwives had the highest isolation score (1.61), suggesting they might feel more detached from other professions in terms of collaboration. High levels of isolation can negatively impact the quality of care, as it indicates that midwives may feel less integrated into the team. Research by Ying Lui (2021) underscores that continuity of care—where patients receive ongoing support from the same team—is a crucial component in midwifery-led care models. If midwives experience isolation, this continuity can be disrupted, especially given their central role in maternal and child care(13).

Pairwise comparison data highlight key differences between professions in communication, accommodation, and isolation. One of the most notable differences appears between Midwives and Management, where midwives report feeling more isolated than management. This suggests a potential gap in the relationship between clinical and administrative staff. With the lowest isolation score, management may be less aware of the daily collaboration challenges faced by clinical staff. In a study by Romijn et al. (2018), management's role in facilitating cross-professional collaboration is emphasized as crucial. A proactive management approach in building a collaborative environment can help reduce feelings of isolation among clinical staff, including midwives Moreover, the significant accommodation difference between Nutritionists and Obstetrics and Gynecology Specialists suggests that professions with a more specific clinical focus may be less flexible in cross-disciplinary collaboration(18).

The International Confederation of Midwives (ICM) also advocates for the midwife-led model, noting that a collaborative environment where professionals work together is essential for meeting the diverse needs of women during childbirth. The ICM's guidance on midwifery emphasizes the necessity for all parties to participate actively in an adaptable, inclusive approach, which has been shown to reduce interventions and support women’s overall well-being through continuous, coordinated care(20).

The findings of this study offer valuable insights for improving interprofessional collaboration in the context of midwifery-led care at RSUB. Enhancing communication can be achieved by implementing training and team development programs that focus on cross-professional communication skills. To promote better accommodation, fostering a more inclusive work culture where input from all professions is valued and incorporated into clinical decision-

making is essential. Additionally, reducing feelings of isolation among midwives can be addressed by encouraging teamwork and increasing their involvement in hospital decision-making processes. Future research should explore interventions such as interprofessional training programs or system-based collaborative strategies to ensure that all team members, including midwives, are fully integrated into the care process.

5. Conclusion

Interprofessional collaboration is a key component in implementing midwifery-led care in hospitals. Results from the IPCMS and pairwise comparisons showed that there are still challenges in communication, accommodation, and isolation among the various professions in RSUB. To improve the quality of care, it is important for the hospital to increase interprofessional collaboration with a focus on reducing isolation, increasing accommodation, and improving interprofessional communication.

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