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An analysis of the maternal health referral system: a case study of the *BAKSOKUDA* system in Central Lombok, Indonesia

Sastrawan[1], Lalu Sulaiman[1], Eva Erawati[2]
[1]Postgraduate Study of Health Administration, Universitas Qamarul Huda Badaruddin Bagu, Central Lombok, Indonesia
[2]Central for Midwifery Services, Praya District Hospital, Central Lombok, Indonesia

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ABSTRACT

Maternal mortality remains a critical concern in Central Lombok, with over 50% of maternal deaths in hospitals involving cases referred through the *BAKSOKUDA* referral system. This suggests potential failures within the referral process, raising concerns about systemic issues compromising maternal health emergencies. This research uses a qualitative case study methodology to investigate the *BAKSOKUDA* system, aiming to identify the challenges contributing to high maternal mortality and provide insights for improving healthcare outcomes. Data were collected through semi-structured interviews with eleven participants: midwives, doctors, nurses, and a hospital manager. Thematic analysis identified several critical issues: communication breakdowns, inconsistent adherence to protocols, difficulties in securing family cooperation, inadequate infrastructure, and lack of community support for blood donation. These findings highlight four interrelated components—human resources, the professional environment, patients and families, and community support—as central to effective maternal health systems. To address these challenges, the study recommends enhancing communication and protocol adherence, providing comprehensive midwife training, promoting cultural sensitivity, and addressing systemic issues like ambulance availability. Strategic planning, resource allocation, and regional coordination are essential to improving infrastructure and ensuring effective referrals. The findings stress the need for a holistic approach, continuous improvement, and active community engagement to optimize maternal care.

Corresponding Author:

Sastrawan
Post Graduate Study in Health Administration, Universitas Qamarul Huda Badaruddin Bagu
St. H. Badaruddin Bagu, Central Lombok, Nusa Tenggara Barat, Indonesia
Email: sastrawan@gmail.com

1. INTRODUCTION

Maternal and neonatal mortality rates in Indonesia continue to be a significant concern, with recent data indicating a maternal mortality ratio of 177 per 100,000 live births and a neonatal mortality rate of 12 per 1,000 live births [1]. A considerable number of these deaths are linked to the inability of mothers to access timely and adequate healthcare services during pregnancy, childbirth, or after delivery. Many of these fatalities could have been prevented with appropriate and prompt medical intervention, suggesting that the existing mortality rates could be substantially reduced [2]. This highlights pressing challenges related to maternal healthcare, especially the effectiveness and responsiveness of the maternal referral system, which is crucial in ensuring timely care for mothers.

Maternal health services play a pivotal role in supporting and safeguarding women's health throughout the reproductive cycle. The essence of maternal service lies not only in the provision of care during pregnancy, childbirth, and the postpartum period but also in the promotion of a holistic and woman-centered

approach to maternity care [3]. The maternity referral system is a critical component that influences the trajectory of care for expectant mothers and contributes significantly to maternal health outcomes [4].

The maternity referral system is designed to facilitate seamless transition of women through various levels of care, ensuring that they receive appropriate and timely services tailored to their individual needs. This system encompasses a spectrum of components; ranging from the identification of high-risk pregnancies to the coordination of care between midwives and other healthcare professionals [5]. It embodies the collaborative nature of modern healthcare, in which midwives, as primary caregivers for many pregnant women, work in tandem with obstetricians, nurses, and other specialists to provide comprehensive and continuous care.

In recent years, there has been renewed focus on the role of midwives as key contributors to maternal health, and the maternity referral system has garnered increased attention [3], [6]. As the global community strives to achieve the sustainable development goals (SDGs), particularly those related to maternal health and well-being, understanding the nuances of the maternity referral system has become imperative. Challenges such as variations in referral processes, communication gaps, and disparities in resource allocation necessitate a thorough examination of the existing systems to identify areas for enhancement.

Maternal mortality continues to be a major issue in Central Lombok, with 53% of maternal deaths in hospitals involving cases referred via the *BAKSOKUDA* referral system [7]. This concerning figure points to possible shortcomings or failures within the referral process, highlighting concerns about systemic problems that may hinder the prompt and effective management of maternal health emergencies. The *BAKSOKUDA* referral system is used to ensure that women and newborns receive the care they need during many regencies in Indonesia, including the Central Lombok Regency. The system is named after the acronym for *bidan* (midwife), *alat* (equipment), *keluarga* (family), *surat* (letter), *obat* (medicine), *kendaraan* (vehicle), and *darah* (blood). The *BAKSOKUDA* system is an important tool to ensure that women and newborns receive the care they need, even in remote areas. This helps ensure that patients are referred to the right facility on time and that they have access to the resources they need to receive the best possible care [8].

Previous studies have emphasized that an effective referral system is crucial for reducing maternal morbidity and mortality by ensuring timely access to higher-level healthcare facilities. Typically, referral systems operate across multiple levels of care, ranging from primary health centers to tertiary hospitals. However, existing research has primarily identified general challenges and barriers within maternal referral systems, such as poor communication between referring and receiving facilities, inadequate transportation, and insufficient pre-referral stabilization. Additionally, the limited skills and capacity of healthcare providers at lower-level facilities have been found to result in unnecessary referrals. Despite these findings, most studies have not explored how these challenges manifest within specific cultural and healthcare contexts. This research addresses this gap by providing an in-depth examination of the *BAKSOKUDA* referral system within the unique cultural and systemic framework of Central Lombok, Indonesia. By doing so, this study offers novel insights into how local practices, cultural beliefs, and healthcare infrastructure impact the referral process, contributing valuable knowledge to the field and highlighting the importance of context-specific solutions for improving maternal health outcomes. By identifying the best practices and areas for improvement, this study aims to provide insights that can inform policy decisions, guide healthcare practitioners, and elevate the quality of maternity care delivered through the collaborative efforts of midwives and other healthcare professionals. In doing so, we hope to advance the discourse on midwifery care and it is integral role in shaping the maternal health landscape.

2. METHOD

2.1. Research design

This study employs a case study design to explore the *BAKSOKUDA* referral system in Central Lombok, Indonesia. The case study approach allows for an in-depth examination of real-world challenges within the local healthcare and cultural context. This design aligns with the study's aim of identifying specific barriers and gaps in the referral process, providing detailed insights that can inform targeted improvements in maternal healthcare outcomes.

2.2. Participants

The study involved eleven participants who directly engaged in the maternity referral system in the district of Central Lombok. The participants included midwives responsible for referring mothers from public health centers to hospitals, referral receiving midwives, doctors, nurses, and hospital manager who oversaw maternity services. The selection of participants was aimed at capturing diverse perspectives within the referral system. The number of participants (sample size) in the study was determined based on the principle of data saturation [9]. Data collection terminated once no new information or categories were identified from the interviews. In total, 11 participants were interviewed for this research. The participant's profile is depicted in Table 1.

Table 1. The participants profile

Participants	Number of participants
Referring midwives	4
Receiving midwives	2
Doctors	2
Nurses	2
Hospital manager	1
Total	11

2.3. Data collection

Data were collected through semi-structured interviews conducted between July and September 2023. The interviews were guided by an open-ended questionnaire that allowed participants to freely express their views and experiences. All interviews were audio-recorded and transcribed with the consent of the participants to ensure accurate capture of information.

2.4. Data analysis

Thematic analysis [10] was employed to systematically analyze the interview data. The process involved multiple stages, including familiarization with the data, generating initial codes, searching for themes, reviewing and refining themes, and defining and naming themes. The analysis was performed iteratively, thereby enabling the identification of patterns and providing valuable insights.

2.5. Rigor and trustworthiness

We ensured the validity of the research by employing several strategies that align with qualitative research rigor. We focused on credibility, dependability, confirmability, and transferability. Triangulation was achieved by including a diverse range of participants involved in the maternal referral system, such as midwives, doctors, nurses, and hospital managers. This approach allowed for capturing multiple perspectives and enhancing the credibility of the findings. Dependability was maintained by documenting the entire research process and decision trail, which allowed other researchers to follow the steps taken. Furthermore, member checking was used to validate the data, ensuring that participants confirmed the accuracy of the collected information and interpreted results.

2.6. Reflexivity

The researchers acknowledged their role in shaping the research process and they remained reflexive throughout the study. Reflexivity was essential to acknowledge any potential biases and ensure a transparent and ethical research practice. This reflexive approach involved continuous self-examination and critical reflection on their own assumptions, preconceptions, and interpretations of the data. By maintaining a reflexive stance, the researchers were able to identify and address any personal or professional influences that might have affected their data collection, analysis, or interpretation. This practice enhanced the credibility and trustworthiness of the study.

2.7. Ethical clearance

Ethical approval was obtained from the Universitas Qamarul Huda review board prior to the commencement of the study (no. 12/EB/UNIQHBA/01/23). The participants were provided with informed consent forms detailing the purpose of the study, confidentiality measures, and their right to withdraw at any stage. Confidentiality was strictly maintained, and pseudonyms were used to protect participants' identities.

3. RESULTS AND DISCUSSION

Effective functioning of the maternity referral system is crucial to ensure the well-being of mothers during childbirth. Despite the government's efforts to develop and streamline the referral system, its practical execution has been riddled with challenges. In various district-level locations, including Central Lombok, the maternity referral system has been put into operation through a mechanism known as "*BAKSOKUDA*." This initiative was established to prompt midwives to thoroughly assess and complete all the necessary procedures throughout the referral process. The acronym "*BAKSOKUDA*" essentially serves as both a checklist and an operational framework guiding maternity services for healthcare professionals. Upon examining the implementation of the maternity referral system, several issues have emerged, highlighting the challenges in it is practical application.

3.1. Adherence to protocols

Midwives are required to complete a partograph, but some do not adhere to this protocol. Instead of creating the partograph during the referral process, they opted to complete it after the baby was born. Some justify this by claiming that the doctor instructed them to refer the patient promptly and did not request the

completion of a partograph at that moment as stated by a participant "I didn't create a partograph; I was only instructed to refer by the doctor. We usually make the partograph after the baby is born" (TT). A partograph is a graphical record of the progress of labor used by healthcare professionals, particularly midwives, to monitor the well-being of both the mother and fetus during childbirth. It is designed to provide a visual representation of various parameters over time, aiding in the early detection of potential complications. The partograph serves as a real-time record, allowing healthcare providers to identify deviations from the normal progression of labor. This early detection enables timely intervention if complications arise, potentially preventing maternal and fetal health issues. Hence, completing the partograph after the birth of the baby is less useful.

The observed tendency among midwives to delay the completion of the partograph until after childbirth raises concerns regarding the effectiveness of this crucial tool. The partograph is specifically designed as a real-time record to provide a graphical representation of labor progress, enabling healthcare professionals to monitor various parameters and detect deviations from normal progression. This tool plays a critical role in the early identification of potential complications and facilitates timely intervention to prevent adverse outcomes.

The potential impact of nonadherence to real-time records on timely intervention is crucial. Unfortunately, not all midwives adhered to the protocols. Some studies have reported poor adherence to procedures [11], [12]. In the context of this study, if the partograph is completed after the baby is born, healthcare providers may miss crucial indicators of complications during labor. This delay in recognizing deviations from normal progression could lead to delayed interventions [13], increasing the risk of adverse maternal and fetal outcomes [14].

The justification provided by some midwives, citing doctor instructions to promptly refer without completing the partograph, underscores the need for improved communication and alignment between healthcare professionals. This discrepancy in protocol adherence raises questions about the effectiveness of communication channels within healthcare teams and the potential impact on timely intervention to prevent maternal and fetal health issues. The deviation from established protocols reflects a potential breakdown in communication or a lack of understanding among healthcare professionals regarding the importance of real-time adherence to specific procedures [15]. Just as the midwives in the study justified their actions based on doctor instructions, healthcare providers in other settings may rationalize deviations from established protocols due to time constraints or perceived urgency.

3.2. Human errors

Another concern arises from human errors. Certain midwives mentioned that, in the rush and hectic nature of their work, they occasionally forgot to administer dual-line infusion. Although these occurrences do not occur often, they still warrant attention, especially considering the severe implications that could arise if this process is not properly attended to, including the potential for fatal consequences. One informant expressed, " ... there was so much blood everywhere. I was somewhat panicked and eager to transport the patient to the hospital quickly, causing me to forget to set up a dual-line infusion..."(S).

A few midwives lacked confidence in adhering to standard procedures, particularly when the procedure involved the administration of medications, such as MgSO4. This hesitation stemmed from concerns about the elevated body temperature of patients, which often became a source of complaints during the referral process. This is reflected in this statement: "I am afraid to administer MgSO4 because of the potential reactions it may cause, as many patients complain of feeling hot after receiving MgSO4..." (TB). Confronted frequently with complaints from patients and their families regarding high fever, midwives tend to avoid administering the necessary medication, even if it means deviating from the prescribed procedure. The reluctance to administer MgSO4 was solely based on the midwife's experience and not for medical reasons. It appears that here the midwife (healthcare provider) does not comprehend the reason why the patient, when referred, should be given medication, in this case, MgSO4.

Instances of midwives forgetting to administer a dual-line infusion, even if infrequent, pose a significant risk to maternal health, as exemplified by the informant's account of a situation in which this critical procedure was overlooked in a panic-induced rush. These human errors, occurring amidst chaotic work conditions, emphasize the need for additional training, support systems, and interventions to enhance midwives' ability to effectively manage high-stress situations. As there is a potential fatality resulting from such oversights [16] underscores the urgency of addressing these issues to ensure the safety of both mothers and infants during childbirth referrals. The potential fatality resulting from oversights in administering critical procedures [17], such as dual-line infusion, underscores the urgency of addressing these issues. In the context of childbirth referrals, delays or errors in essential interventions can have severe consequences for both mothers and infants.

To mitigate the risks associated with human errors in healthcare settings, commitment to continuous improvement is paramount [18]. Regular reviews of critical incidents, root cause analyses, and proactive approaches to addressing vulnerabilities can contribute to a culture of patient safety [17], [18]. Healthcare institutions should encourage reporting and learning from near misses or adverse events, fostering an environment in which healthcare professionals feel empowered to address and rectify potential pitfalls in their processes.

3.3. Family consent challenges and cultural norms

Midwives promptly initiated the patient's referral upon receiving approval from the family, more specifically from the husband. Challenges arise when seeking family consent because of the husband's absence. In such situations, the midwife typically obtained consent from any family member who was currently accessible for the referral process. Nevertheless, given the cultural norms in which the husband is typically considered the most responsible individual in such situations, other family members may hesitate to make decisions, leading to delays in the referral process. These observations are consistent with the findings obtained from the interviews: " ...Sometimes it's difficult for us to inform the husband and family that the patient needs to be referred because the husband is far away or abroad. So, we inform whoever is with the patient at that time to agree to the referral..." (P). In certain scenarios, midwives frequently encounter challenges in convincing family members, including husbands, to recommend transferring patients to hospitals. Some families strongly adhere to traditional practices and hold onto the myths surrounding childbirth. There is a prevailing belief that challenges in childbirth can be addressed through traditional methods, leading some to prefer this approach before further scientific treatment.

The reliance on the family, specifically husbands, for approval in initiating referrals poses challenges when the husband is absent. In such cases, midwives seek consent from accessible family members, but delays may occur due to the cultural norm that considers the husband as the primary decision-maker. This points to a need for cultural sensitivity in healthcare practices [19] and potential strategies to streamline the consent process in cases where immediate family members may be unavailable. The challenge of convincing families, especially those adhering to traditional practices, further highlights the importance of education and awareness campaigns to bridge the gap between traditional beliefs and modern health care practices.

Cultural sensitivity in healthcare practices is crucial for ensuring equitable and patient-centered care [20]. In the context of childbirth referrals, healthcare providers should be attuned to cultural norms that influence the decision-making processes within families [21]. Training programs for healthcare professionals can include modules on cultural competence, emphasizing the importance of understanding and respecting diverse cultural perspectives

3.4. Administrative oversights and equipment preparedness

Chaotic circumstances not only lead midwives to overlook certain administrative procedures but also distract them, causing them to forget the partus set. Due to the ill-equipped nature of ambulances, midwives are expected to provide specific medical equipment during the referral process. Although most midwives understood the significance of this procedure, some did not give it the attention it needed. They underestimated the significance, believing that the transportation of the patient to the hospital would be a quick process and nothing untoward would occur. This sentiment is reflected in statements such as:"... I didn't bring the partus set; I promptly referred the patient when she was ready...I thought the most crucial thing was reaching the hospital as soon as possible. I wasn't overly concerned about carrying all the necessary equipment with me..." (SS).

Regarding the preparation of documents for referrals, some midwives still referred patients without the required paperwork, expressing concerns about delayed referrals and the risk of severe bleeding. Additionally, some midwives neglected to generate a partograph, presuming that the preceding shift's midwife had already done so. This lapse is attributed to the lack of a formal patient handover process during the shift changes. The midwife suggests that the staff on the prior shift should ideally complete the partograph, allowing personnel on the subsequent shift to promptly proceed with the referral. These observations align with the insights gathered during the following interview: " … I was on the evening shift. The midwife who knows the chronology of this patient is the morning shift midwife. I was instructed only to make a referral. There was no partograph; perhaps it had not been prepared by the midwife on morning duty" (B).

Another administrative matter pertains to documents required for health insurance claims (jampersal). While less frequent, there are instances where families lack essential documents, such as family cards, which are commonly held documents. This document enables individuals to be covered by public health insurance (jampersal). However, some individuals tend to overlook the importance of these documents, resulting in issues when they need to be referred to the hospital. This is reflected in this statement: "The patient wants to use Jampersal but doesn't have a Family Card, ma'am. I've already instructed her to obtain a Family Card during pregnancy, but she didn't pay attention " (M).

This study sheds light on the challenges midwives face in ensuring the completeness of the necessary paperwork during referrals. The lack of a formal patient handover process during shift changes contributes to lapses in document preparation, as exemplified by midwives, assuming that the preceding shift's staff had completed the partograph. This calls for systematic improvements in handover procedures and reinforces the importance of ensuring that all the required documents are prepared before initiating referrals.

The chaotic circumstances surrounding childbirth referrals not only lead to human errors but also contribute to midwives overlooking administrative procedures [22] and neglecting to bring essential medical

equipment. The sentiment expressed by some midwives, prioritizing quick hospital transportation over comprehensive preparation, reveals a perception gap regarding the importance of following established procedures. This underscores the need for education and awareness campaigns to emphasize the critical role of adherence to protocols and the importance of carrying the necessary equipment during referrals.

To mitigate administrative oversight, healthcare institutions should implement systematic improvements in handover procedures [23]. This involves establishing clear protocols for information transfer during shift changes or during patient transfers. Standardized checklists can serve as tools to ensure that all the necessary documents are reviewed, updated, and passed on to the next healthcare team. Regular training sessions and drills can further reinforce the importance of adherence to these procedures among healthcare professionals.

3.5. Systemic challenges in healthcare infrastructure

Lack of ambulance availability often leads to delays in the referral process. Patients experience delays as they have to wait for the return of the ambulance vehicle from a previous referral or because the vehicle serves other purposes such as supporting integrated health posts (*posyandu*). According to a participant, "I wait for the ambulance used to refer general patients; only then do I make the referral, ma'am, because there is no other available vehicle...". In the community health center (*Puskesmas*), the limited presence of ambulance vehicles is attributed to their multifunctionality. Ambulances are not exclusively designated for referrals, but also serve various health activities in remote areas. As a result, referrals can only be initiated after a significant wait for the ambulance to return from field duties.

The ill-equipped nature of ambulances and the expectation for midwives to bring specific medical equipment themselves raise broader questions about the healthcare infrastructure. Insufficient resources may hinder midwives' ability to comply with protocols [24], emphasizing the importance of addressing systemic issues to ensure optimal maternal and fetal care during referrals. Furthermore, insufficient resources may also lead to midwives feeling overwhelmed and burnt out [25], which can negatively impact their ability to provide high-quality care to women during and after pregnancy [26]. It is crucial to address these systemic issues to ensure that midwives have the necessary support and resources to provide optimal maternal and fetal care during referrals. Additionally, addressing these issues can help reduce the risk of negative outcomes for both mothers and their babies.

Delays in the referral process attributed to limited ambulance availability shed light on broader systemic challenges within the healthcare infrastructure. Some studies found that infrastructure associated with the quality of obstetric and newborn care [2], [27]. Ambulances, serving multiple purposes, such as supporting integrated health posts, contribute to extended waiting times for referrals. This issue calls for strategic planning and resource allocation to ensure that dedicated ambulance services are available for timely referrals, thereby preventing unnecessary delays that may impact patient outcomes [28].

Effective resource allocation is a critical aspect for overcoming systemic challenges [29]. Dedicated funding and resources should be earmarked for the procurement and maintenance of ambulances specifically designated for maternity referral. Furthermore, it is essential to ensure that the ambulances are equipped with the necessary medical supplies and equipment, such as oxygen tanks, birthing tools, and neonatal care supplies, to provide optimal care for both the mother and the newborn during transport. This ensures that essential services are available when needed, aligned with the broader goal of improving maternal and infant outcomes.

The issue of limited ambulance availability often extends beyond individual healthcare facilities. Regional coordination and collaboration are essential for optimizing ambulance services across healthcare networks [30]. Establishing communication channels between different healthcare providers, ambulance services, and community health centers can facilitate the seamless movement of patients during referrals. Regional planning helps to distribute resources effectively and ensures that ambulances are strategically positioned to serve diverse communities.

3.6. Blood donation system: readiness and responsiveness

Fundamentally, each expectant mother should have a potential blood donor to meet the standards for blood donation referrals. Nevertheless, there are instances in which these potential blood donors are unavailable when a mother in labor requires blood. This is reflected in this statement: "… We have informed them during pregnancy to prepare a donor, but it's difficult to contact them when needed… (M). Additionally, some prospective donors are not prepared to donate at that moment due to health concerns as in the statement: "… We have prepared a donor since pregnancy, but they say the donor is not ready to donate blood, and sometimes there is no blood donor available at the moment…" (TB).

The lack of blood donors emphasizes the necessity of a comprehensive and reactive blood donation system. Similar challenges can be observed in hospital blood banks, where unexpected surges in demand or specific blood type requirements may strain the existing donation infrastructure [31], [32]. An efficient blood donation system should proactively address these challenges and ensure a steady supply of blood products for maternal healthcare and other medical interventions.

Community engagement and awareness campaigns play vital roles in building a robust blood donation system. Through these campaigns, individuals can learn about the importance of blood donation and the various ways they can contribute to this essential service. Educating the public about the constant need for blood donations, the ease of the donation process, and the impact of donations on saving lives fosters a culture of voluntary blood donations. Community-driven initiatives, donor recruitment programs, and partnerships with local organizations can contribute to a sustainable and responsive blood-donation ecosystem [33].

3.7. Lessons learned

The research uncovered various central themes, including protocol adherence, human errors, administrative oversights, healthcare infrastructure, challenges in obtaining family consent, cultural norms, blood donation system, and community support. Each theme was thoroughly examined, elucidated, and incorporated into the broader research context. All themes were thoroughly scrutinized to allow holistic pictures of the referral system. Implications for healthcare practices were also carefully analyzed.

Based on the findings and analysis of this study, four interconnected elements were identified. The elements include patients and family, health human resources, professional environment, and community support. These elements intricately impact the effectiveness of the maternal referral system. A graphical representation of these elements is provided in Figure 1.

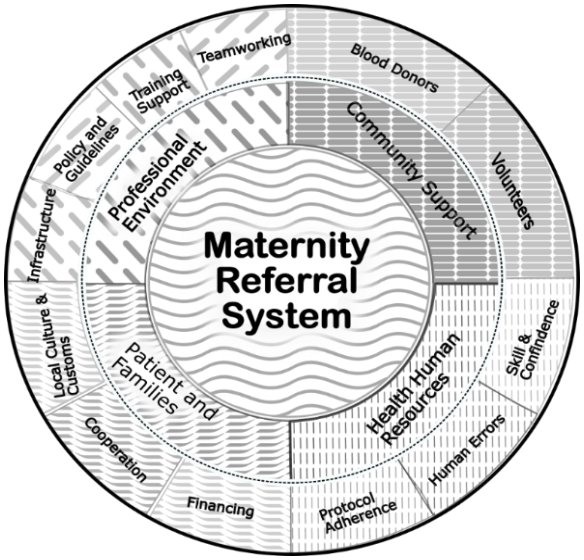

Figure 1. Elements affecting the maternal referral system

The effectiveness of the maternity referral system seems to hinge significantly on the involvement of healthcare personnel. The successful implementation of the maternity referral system requires a combination of adequate knowledge, skills, and professional behavior. This conclusion is evident in the study's findings, particularly in the themes of adherence to protocols and the impact of human errors, both of which underscore the crucial role of health human resources in the maternity referral system. This result is also inline with some other studies [8], [13], [17].

Sufficient human resources should be empowered by the provision of appropriate and supportive professional settings [2]. This professional environment encompasses essential facilities and infrastructure, transparent protocols and standards of procedure, and adequate supervision, enabling healthcare professionals to carry out their duties proficiently. These aspects are distinctly evident in the identified themes of administrative oversight, equipment preparedness, and systemic challenges within healthcare infrastructure [27]. The issues of inadequate health facilities have also been prevalent in many other studies in developing countries [3], [4], [34], [35].

With the current focus on patient-centered care in healthcare, placing the patient and their family at the core of services, their role is deemed equally significant to that of healthcare professionals. This study illustrates that the cooperation between patients and their families can affect the efficacy of the maternity referral system. Their beliefs, norms, and cultural background may influence the system's outcomes [36]. The majority of factors associated with patients and families seem to act as social determinants in ensuring the success of the maternity referral system [37].

Lastly, the support of the broader community also contributes to the functioning of the system, particularly concerning community members' willingness to donate blood. Essentially, proper operation of the blood donor system relies on community involvement. Since participation is voluntary, the community's role is crucial for the success of the maternity referral system [33].

4. CONCLUSION

This study highlights critical challenges in the maternal health referral system in Central Lombok. Key issues include delays in completing partographs and deviations from established protocols, highlighting the urgency of improving communication and protocol adherence among healthcare professionals. Human errors during childbirth referrals, particularly in high-stress situations, point to the need for ongoing training and stronger support systems. Cultural sensitivity is also vital in navigating family decision-making processes, as family involvement is crucial to the effectiveness of the referral system.

Systemic issues, such as limited ambulance availability, insufficient blood donor readiness, and inadequate infrastructure, require strategic planning and resource allocation. Improvements in handover procedures, better healthcare infrastructure, and the establishment of more responsive community-based blood donation systems are essential. A holistic approach (emphasizing continuous improvement, patient safety, and community engagement) is crucial for overcoming these challenges. Enhancing midwives' adherence to protocols, incorporating cultural competence into healthcare training, and empowering patients and families through education will be key to strengthening the maternal health referral system and improving maternal and neonatal outcomes in Central Lombok. Overall, the study identified four interrelated elements that impact the overall functioning of the maternal health system: human resources, the professional environment, patients and families, and community support. These elements must be addressed comprehensively to enhance maternal care.

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BIOGRAPHIES OF AUTHORS

Sastrawan is a senior lecturer and researcher at the Directorate of Postgraduate Studies at Universitas Qamarul Huda Badaruddin. His research interests span health administration, health systems, health service management, public health, and value-laden healthcare. Sastrawan has authored some peer-reviewed scientific articles published in esteemed journals, including the Journal of Clinical Nursing and Nursing Ethics. Additionally, he participates as a reviewer for reputable international journals such as Nursing Ethics and BMC Nursing as well as a number of national scientific journals. Currently, Sastrawan holds a managerial position at the university as the Vice Rector for Academic Affairs. For any inquiries or communication. He can be contacted at email: sastrawan@gmail.com.

Lalu Sulaiman currently holds the position of Director at the Directorate of Postgraduate Studies at Universitas Qamarul Huda Badaruddin. As a dedicated researcher, he specializes in health administration, health systems, and health anthropology. His expertise is evident in the publication of numerous scientific articles across various national journals. Notably, Sulaiman Lalu recently secured national research funding for his work in health administration. He can be contacted at email: sulaimanlalu@gmail.com.

Eva Erawati is a professional registered midwife with over 15 years of dedicated service at the Center for Midwifery Services at Praya District Hospital. Her extensive experience in midwifery has heightened her awareness of the maternity referral system. She actively examines and assesses the referral system, playing a crucial role in educating women and female teenagers on matters of reproductive health and safe childbirth. She can be contacted at email: 75evaerawati@gmail.com.