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COMPREHENSIVE SEVERE PREECLAMPSIA MANAGEMENT IN PRIMARY HEALTHCARE: OPTIMIZING QUALITY OF SOCIAL OBSTETRIC CARE

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ABSTRACT
Preeclampsia is a major contributor to maternal morbidity and mortality and remains a challenge in primary healthcare, particularly in resource-limited settings. Its management requires not only clinical care but also integration of social, educational, and family-support approaches. This study aimed to describe comprehensive management of preeclampsia through a social obstetric approach in primary healthcare facilities. This study aimed to analyze the implementation of comprehensive preeclampsia management through an integrated clinical and social obstetric approach in primary healthcare facilities in Jambi City. A qualitative descriptive study with a case study design was conducted at six district-level primary healthcare facilities in Jambi City from August to October 2025. Participants included doctors, midwives, and pregnant women. Data were collected through in-depth semi-structured interviews and observations and analyzed descriptively. Comprehensive management of preeclampsia included routine antenatal care, blood pressure monitoring, maternal and fetal assessment, and initial stabilization before referral to higher-level facilities. The social obstetric approach involved health education, counseling, pregnancy classes, family support, and empowerment of pregnant women to maintain health and adhere to regular antenatal visits. Quality of care was further supported by accessible services and a coordinated referral system, facilitating early detection and timely management of complications. Comprehensive preeclampsia management integrated with a social obstetric approach can strengthen the quality of maternal healthcare in primary healthcare facilities.

Keywords: comprehensive management; maternal healthcare; primary healthcare facilities; social obstetrics; severe preeclampsia

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INTRODUCTION

Maternal Mortality Rate (MMR) remains one of the key indicators for assessing the success of health development and the quality of a country's healthcare system. Despite the implementation of various maternal health interventions, complications during pregnancy and childbirth remain major causes of maternal mortality worldwide, particularly in developing countries. Hypertensive disorders of pregnancy, particularly preeclampsia and severe preeclampsia, are among the major contributors to maternal mortality. Preeclampsia is a pathological condition characterized by elevated blood pressure after 20 weeks of gestation, often accompanied by proteinuria or other signs of maternal organ dysfunction, including renal, hepatic, neurological, or hematological abnormalities. The condition may progress to eclampsia, which is characterized by seizures, and may lead to serious complications such as pulmonary edema, renal failure, cerebral hemorrhage, and maternal or fetal death if not promptly and appropriately managed. Globally, approximately 10% of pregnancies are estimated to be complicated by preeclampsia, contributing to approximately 76,000 maternal deaths and more than 500,000 infant deaths annually (Nevin et al., 2024).

In Indonesia, preeclampsia remains a major challenge in efforts to improve maternal health outcomes. Recent evidence indicates that hypertensive disorders of pregnancy account for approximately 32.4% of maternal deaths, making them one of the leading causes of maternal mortality after obstetric hemorrhage (Silaban & Situmorang, 2024). The substantial contribution of

hypertensive disorders to maternal mortality indicates that prevention, early detection, and effective management of preeclampsia require further strengthening. In addition, the incidence of preeclampsia in Indonesia remains relatively high, with several studies reporting that approximately 9.4% of pregnant women experience preeclampsia of varying severity (Rohaeni & Simanjuntak, 2023). Preeclampsia not only increases maternal morbidity and mortality but also has significant consequences for fetal and neonatal health. It is associated with an increased risk of preterm birth, low birth weight, intrauterine growth restriction, and neonatal mortality (Sari et al., 2025). Therefore, preeclampsia represents not only a maternal health problem but also a substantial perinatal health concern.

Pathophysiologically, preeclampsia is a complex condition involving abnormal placental implantation and vascular endothelial dysfunction, resulting in systemic vasospasm and impaired organ perfusion. These processes contribute to increased blood pressure, impaired uteroplacental blood flow, and various systemic complications in pregnant women. The risk factors for preeclampsia are multifactorial and include biological, metabolic, social, and behavioral factors. Nevin et al. (2024) reported that chronic hypertension, obesity, and metabolic disorders significantly increase the risk of preeclampsia among pregnant women. Other studies have demonstrated that metabolic syndrome and obesity during pregnancy contribute to the development of preeclampsia through endothelial dysfunction and increased systemic inflammatory responses (Husnaa et al., 2024). In addition, clinical indicators such as Mean Arterial Pressure (MAP) have been shown to be useful early predictors of preeclampsia risk, enabling earlier intervention through optimal antenatal care (Salsabila et al., 2025).

Although numerous studies have examined the risk factors and clinical consequences of preeclampsia, most have focused primarily on epidemiology, pathophysiology, and medical risk factors. Research specifically examining how comprehensive management of severe preeclampsia is implemented in primary healthcare settings remains limited. Primary healthcare facilities, including community health centers (Puskesmas) and maternity clinics, play a strategic role as the frontline of maternal healthcare. They serve as the first point of contact for most pregnant women seeking healthcare, particularly for antenatal care, early detection of pregnancy complications, and regular monitoring of maternal health. Primary healthcare facilities also have an important role in providing initial stabilization for obstetric emergencies and making timely decisions regarding referral to higher-level healthcare facilities.

However, maternal healthcare services at the primary healthcare level continue to face several challenges, including limited human resources, inadequate infrastructure and equipment for obstetric emergencies, variations in the implementation of maternal healthcare standards, and suboptimal maternal referral systems. Social factors, such as maternal education, socioeconomic conditions, access to healthcare, and limited awareness of pregnancy danger signs, may also contribute to delays in the management of preeclampsia. These challenges indicate that the management of preeclampsia requires more than a clinical approach alone and should incorporate a comprehensive perspective that considers the social determinants influencing maternal health.

The social obstetric approach is an important concept for improving the quality of maternal healthcare because it views maternal health within a broader context involving the interaction of medical, social, economic, cultural, and behavioral factors. This approach emphasizes the integration of clinical services with promotive and preventive interventions, including maternal health education, improved adherence to antenatal care, family empowerment and support, and strengthening of effective maternal referral systems. Therefore, the management of severe preeclampsia should extend beyond medical treatment to include efforts to improve healthcare access and empower families and communities to support maternal health throughout pregnancy.

Based on these challenges, a more comprehensive management approach is needed for severe preeclampsia, particularly in primary healthcare settings. Comprehensive management should encompass early identification of risk factors, regular maternal monitoring, appropriate initial management of pregnancy complications, stabilization, and an effective and well-coordinated referral system. However, research specifically examining the implementation of comprehensive severe preeclampsia management in primary healthcare through a social obstetric perspective remains limited. Therefore, this study addresses this gap by examining the comprehensive management of severe preeclampsia in primary healthcare facilities through a social obstetric perspective that integrates clinical and social dimensions of pregnancy complication management. This approach is expected to provide a deeper understanding of effective and sustainable maternal healthcare strategies for managing severe preeclampsia at the primary healthcare level. Ultimately, the study may contribute to the development of a more comprehensive maternal healthcare model and support efforts to reduce maternal and neonatal morbidity and mortality in Indonesia.

METHOD

This study employed a descriptive qualitative approach with a case study design to explore the implementation of comprehensive management of severe preeclampsia through an integrated clinical and social obstetric approach in primary healthcare facilities. The study was conducted at six district-level primary healthcare centers (Puskesmas) in Jambi City, Indonesia, from August to October 2025. The study sites were purposively selected based on their role in maternal healthcare services, accessibility to referral facilities, and involvement in the early detection, initial management, stabilization, and referral of pregnancy complications, particularly severe preeclampsia. Participants were selected using purposive sampling based on their relevance to the research objectives and experience in maternal healthcare services. The participants comprised six doctors as key informants and 15 midwives and other healthcare professionals as supporting informants. Pregnant women receiving antenatal care were also included as supporting informants to explore the social and educational dimensions of maternal healthcare. Data collection continued until sufficient information and thematic saturation were achieved.

Data were collected through semi-structured in-depth interviews, non-participant observations, and document review. Interviews explored participants' experiences and practices related to early detection, initial management, stabilization, referral, health education, family support, maternal empowerment, and access to healthcare services. Observations were conducted to assess the implementation of antenatal care, maternal and fetal assessment, blood pressure monitoring, initial management, and referral procedures. Relevant documents, including maternal health records, antenatal care records, maternal and child health books, laboratory results, referral records, clinical guidelines, and standard operating procedures, were also reviewed. Data were analyzed using the Miles, Huberman, and Saldaña interactive model, comprising data condensation, data display, and conclusion drawing and verification. Interview data were coded and categorized according to the research focus, followed by identification of patterns and emerging themes related to clinical management, social support, health education, accessibility, and referral systems. Data credibility was enhanced through method and source triangulation, persistent observation, member checking, and audit trail documentation. Ethical approval was obtained from the relevant research ethics committee prior to data collection. All participants provided informed consent, and confidentiality and anonymity were maintained throughout the research process.

RESULT

Implementation of Comprehensive Management of Severe Preeclampsia in Primary Healthcare Facilities

The findings showed that the comprehensive management of severe preeclampsia in primary healthcare facilities was implemented through several key components, namely clinical care, social care, and health education and support for pregnant women. These three components play an

important role in improving the quality of social obstetric care and preventing more severe complications in mothers and fetuses. The implementation of comprehensive management was carried out by healthcare providers, particularly physicians and midwives, through antenatal care, monitoring of maternal conditions, and educational and social approaches involving pregnant women and their families.

From the clinical care perspective, the findings showed that healthcare providers in primary healthcare facilities implemented various medical procedures in accordance with maternal healthcare standards. These services included routine antenatal care, assessment of maternal and fetal conditions, blood pressure monitoring, and initial clinical management when signs of preeclampsia were identified. Antenatal care was conducted regularly to monitor maternal health and detect risk factors for pregnancy complications at an early stage. One informant explained that blood pressure measurement and monitoring of the pregnant woman's condition were routinely performed at every antenatal visit: "*Every pregnant woman who comes for an examination always has her blood pressure checked. We also assess the mother's general condition and fetal development. This is important for detecting early signs of preeclampsia*." (Informant A, Midwife)

In addition to blood pressure measurement, healthcare providers assessed maternal and fetal conditions through physical examinations and monitoring of maternal complaints. When elevated blood pressure or symptoms suggestive of preeclampsia were identified, healthcare providers conducted further assessment and provided initial management before referral to facilities with comprehensive emergency obstetric services. As stated by another informant:
"*If a pregnant woman has high blood pressure or complaints such as severe headache and swelling, we immediately conduct further evaluation and provide initial management before referral*." (Informant B, Physician)

Optimization of Social Obstetric Care Quality in the Management of Severe Preeclampsia
The findings showed that optimizing the quality of social obstetric care in the management of severe preeclampsia at primary healthcare facilities involved several strategies, including improving clinical care, strengthening the social approach to maternal healthcare, and enhancing health education and maternal empowerment. These efforts were primarily undertaken by physicians and midwives to improve the quality of maternal healthcare and prevent pregnancy complications that could threaten maternal and fetal health. In practice, optimizing social obstetric care did not focus exclusively on medical aspects but also considered social factors affecting maternal health, including family support, maternal knowledge, and access to healthcare. Healthcare providers attempted to deliver comprehensive services by integrating clinical care and social approaches throughout the maternal healthcare process. One important strategy for improving social obstetric care was strengthening comprehensive antenatal care. Antenatal care was not limited to maternal and fetal assessment but also included early detection of pregnancy complications, particularly preeclampsia. One physician stated: "*Every pregnant woman who comes for care receives a complete and integrated antenatal examination, although mental health services are not yet available*." (Informant G, Physician).

A midwife similarly stated: "*We try to provide comprehensive antenatal care, starting from blood pressure measurement and monitoring maternal and fetal conditions to providing education to pregnant women about the risks of pregnancy complications*." (Informant A, Midwife).

Another informant emphasized the importance of coordination among healthcare providers: "*To improve the quality of care, we also coordinate with other healthcare providers and ensure that every pregnant woman receives services according to the standards*." (Informant B, Physician)

Impact of Social Obstetric Care on the Management of Severe Preeclampsia

Social obstetric care represents a maternal healthcare approach that extends beyond clinical management by considering social, psychological, cultural, and family-support factors. In the management of severe preeclampsia at primary healthcare facilities, the implementation of social obstetric care was perceived to contribute to improved maternal healthcare quality and prevention of more severe complications. The approach enabled healthcare providers to combine medical interventions with effective communication involving pregnant women and their families.

The findings indicated that social obstetric care positively influenced pregnant women's understanding of their pregnancy conditions, particularly their awareness of preeclampsia risks. It was also associated with improved maternal behavior, greater adherence to antenatal care, stronger family and community involvement, and improved implementation of stabilization and referral procedures. Healthcare providers actively educated pregnant women about pregnancy danger signs, the importance of regular antenatal visits, and strategies to prevent complications. This information helped women better understand their health conditions and encouraged adherence to regular antenatal visits.

One healthcare provider stated: "*We always explain the mother's blood pressure condition and the risks that may occur if preeclampsia is not properly managed. This makes mothers more aware of the importance of regular antenatal check-ups*." (Informant D1)

Social obstetric care also appeared to increase family involvement in the care of pregnant women with severe preeclampsia. Family support was considered important in ensuring that pregnant women received appropriate care, including decision-making regarding referral to higher-level healthcare facilities. Healthcare providers actively involved family members in health education so that they could understand the maternal condition and support the care process.

As reported by one informant: "*We usually invite the husband or family members to listen to the explanation about the mother's condition. This allows the family to remind her to maintain her diet, get enough rest, and attend scheduled check-ups*." (Informant B2)

The social obstetric approach also improved access to healthcare services by enabling healthcare providers to identify barriers faced by pregnant women, including financial limitations, geographical distance, transportation difficulties, and cultural factors influencing health behaviors. Understanding these social circumstances allowed healthcare providers to provide more appropriate responses, including additional education, closer monitoring, and facilitation of referral when further treatment was required.

One informant stated: "*Sometimes there are mothers who actually need more frequent check-ups but are constrained by distance or transportation. We usually try to find solutions, such as scheduling more regular follow-ups or coordinating with health cadres in their area*." (Informant B3)

DISCUSSION

Implementation of Comprehensive Management of Severe Preeclampsia in Primary Healthcare Facilities

These findings demonstrate the important role of primary healthcare facilities in the early detection and initial management of preeclampsia. Routine antenatal care is a key strategy for identifying hypertensive disorders of pregnancy and preventing complications at an early stage (WHO, 2021). Previous research has also shown that regular blood pressure monitoring and maternal assessment are important components of preeclampsia management at the primary healthcare level (Miller et al., 2021). Therefore, optimizing clinical services in primary healthcare facilities may contribute to

reducing maternal and perinatal complications. Beyond clinical care, this study also found that the social dimension of healthcare was an important component of comprehensive preeclampsia management. The social approach incorporated the social and cultural circumstances of pregnant women as well as family support. Healthcare providers not only delivered medical care but also provided social support and helped pregnant women understand the importance of regular antenatal care. One informant explained that family support strongly influenced pregnant women's adherence to antenatal care: "*We always encourage families to accompany pregnant women during examinations because family support greatly helps mothers maintain their health during pregnancy*." (Informant C, Midwife)

Healthcare providers also sought to improve pregnant women's access to healthcare by providing information regarding antenatal schedules and emphasizing the importance of regular visits. This approach was intended to encourage pregnant women to take a more active role in maintaining their health during pregnancy. These findings are consistent with the concept of social obstetrics, which emphasizes that maternal health is influenced not only by biological factors but also by social, economic, and cultural factors within the community (Souza et al., 2022). Previous research has also demonstrated that family and social support play important roles in increasing antenatal care utilization and reducing the risk of pregnancy complications (Kruk et al., 2020). Therefore, incorporating social dimensions into maternal healthcare is an important strategy for improving the overall quality of obstetric care.

The study further demonstrated that health education and support were important components of comprehensive preeclampsia management in primary healthcare facilities. Healthcare providers actively educated pregnant women about pregnancy danger signs, the importance of antenatal care, and strategies for maintaining health during pregnancy. Education was delivered through health education sessions, individual counseling, and pregnancy classes conducted at healthcare facilities. One informant reported that health education was routinely provided to improve pregnant women's knowledge of pregnancy complications: "*We frequently provide education to pregnant women about pregnancy danger signs, such as high blood pressure, severe headache, or swelling of the legs. This is important so that mothers can seek help immediately if they experience these symptoms*." (Informant D, Midwife)

In addition to health education, healthcare providers provided counseling regarding healthy dietary practices, adequate rest, and adherence to scheduled antenatal visits. These educational interventions aimed to increase pregnant women's awareness of the importance of maintaining their health throughout pregnancy. Recent evidence indicates that health education for pregnant women can improve knowledge and awareness of pregnancy danger signs and encourage earlier healthcare-seeking when complications occur (UNFPA, 2022). Pregnancy classes have also been reported to improve maternal health knowledge and utilization of maternal healthcare services (Ministry of Health of the Republic of Indonesia, 2021). Overall, the findings indicate that comprehensive management of severe preeclampsia in primary healthcare facilities involves the integration of clinical care, social support, and health education for pregnant women and their families. This comprehensive approach enables healthcare providers to address not only the medical aspects of preeclampsia but also the social and behavioral factors influencing maternal health. Consequently, optimizing social obstetric care at the primary healthcare level may contribute to improving maternal healthcare quality and preventing more severe pregnancy complications.

Optimization of Social Obstetric Care Quality in the Management of Severe Preeclampsia

These findings demonstrate that quality antenatal care plays an important role in preventing and managing pregnancy complications, including preeclampsia. The World Health Organization identifies quality antenatal care as an important strategy for reducing maternal mortality because it enables healthcare providers to detect and manage pregnancy complications at an early stage

(World Health Organization, 2021). Previous research has similarly demonstrated that improving antenatal care quality at the primary healthcare level can enhance early detection of preeclampsia and reduce maternal and perinatal complications (Magee et al., 2022). In addition to improving clinical quality, social obstetric care was optimized through social engagement with pregnant women and their families. Healthcare providers provided health education and encouraged family involvement in maternal healthcare. Providers recognized that social factors could substantially influence the success of maternal healthcare services.
One informant explained: "*We always encourage families to support pregnant women, for example, by accompanying them during examinations or helping them maintain their health throughout pregnancy*." (Informant C, Midwife)

This social approach is an important component of social obstetric care because maternal health is influenced not only by medical conditions but also by social circumstances and the environment in which women live. Previous research indicates that social factors such as family support, educational level, and access to healthcare are strongly associated with antenatal care utilization (Souza et al., 2022). Therefore, integrating social approaches into maternal healthcare may improve the overall quality of maternal services.

Another strategy for optimizing social obstetric care was improving access to healthcare services. Healthcare providers sought to ensure that pregnant women received timely and accessible care without financial or sociocultural barriers. One midwife stated: "*We always facilitate access to healthcare for pregnant women, especially those with danger signs, without distinguishing between general patients and those with social health insurance*." (Informant D, Midwife)

Another informant explained: "*All patients with severe preeclampsia are referred according to their clinical needs to facilities with more comprehensive services, with easy access regardless of their insurance or financial status*." (Informant A, Midwife)

The referral system was implemented through a tiered process. When high-risk conditions, complications, or specific medical indications were identified, the Puskesmas initiated referral after the patient had first been stabilized. This approach is consistent with the importance of strengthening healthcare providers' knowledge and awareness of high-risk pregnancies to ensure appropriate initial management and timely referral (Ministry of Health of the Republic of Indonesia, 2021).

As one midwife explained: "*Before referring a patient with severe preeclampsia, stabilization is performed and the receiving hospital is contacted so that they are aware of the treatment already provided and can provide care promptly*." (Informant U, Midwife)

Overall, the findings demonstrate that optimization of social obstetric care for severe preeclampsia involves the integration of improved clinical care, social support for pregnant women and families, and continuous health education. This comprehensive approach allows healthcare providers to address both the medical aspects of preeclampsia and the social factors affecting maternal health.

Impact of Social Obstetric Care on the Management of Severe Preeclampsia
These findings are consistent with the concept of comprehensive maternal healthcare, which emphasizes that services addressing patients' social needs can improve the effectiveness of maternal health interventions. Social obstetric care enables healthcare providers to understand pregnant women's circumstances more comprehensively, allowing care to extend beyond curative interventions to include promotive and preventive measures. According to the World Health Organization (2022), maternal healthcare approaches that consider social factors and family support can improve adherence to antenatal care and reduce the risk of pregnancy complications.

Duhig et al. (2022) similarly reported that family involvement and effective health education are important factors in improving the management of preeclampsia, particularly at the primary healthcare level. These approaches can facilitate early detection of complications and support timely treatment. Sibai (2023) further emphasized that successful preeclampsia management depends not only on medical interventions but also on patient adherence to healthcare recommendations, which may be influenced by maternal knowledge and social support.

Overall, the findings demonstrate that social obstetric care plays an important role in the management of severe preeclampsia at primary healthcare facilities. Integrating clinical and social dimensions enables healthcare providers to address maternal health more comprehensively, strengthen family and community involvement, improve access to healthcare, and support timely stabilization and referral. This integrated approach may enhance the effectiveness of severe preeclampsia management and reduce the risk of adverse maternal and fetal outcomes.

CONCLUSION

This study concludes that the management of severe preeclampsia in primary healthcare facilities in Jambi City is implemented through an integrated approach combining clinical management and social obstetric care. Clinical management includes routine antenatal care, blood pressure monitoring, maternal and fetal assessment, initial management, stabilization, and timely referral to higher-level healthcare facilities. These clinical components are complemented by health education, counseling, family support, maternal empowerment, and efforts to improve access to healthcare services.

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