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CONSTRAINTS AND BARRIERS IN HANDLING SEVERE PREECLAMPSIA

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ABSTRACT
WHO 2020 data shows a Maternal Mortality Rate (MMR) of 223 per 100,000. The Indonesian Health Profile in 2023, MMR in Indonesia is 189 per 100,000 live births. The most common causes of death are hypertension in pregnancy (412 cases), obstetric hemorrhage (360 cases) and other obstetric complications (204 cases). Preeclampsia is the most common hypertension in pregnancy in Indonesia, 7-10% of all pregnancies. Preeclampsia causes >70,000 maternal deaths and 500,000 fetal deaths worldwide each year. This study aims to explore in depth the obstacles and constraints in the management of severe preeclampsia at Dr. M. Djamil Padang General Hospital in 2025. Qualitative research methods. Informants were selected purposively with the following criteria: medical and nursing service managers, obstetrician/gynecologist specialists, midwives and nurses (in the emergency room or delivery room, obstetrics polyclinic, obstetrics inpatient, operating room, intensive care unit, and NICU), working for at least 1 year, directly involved in the management of severe preeclampsia, patients or their families. The number of informants was determined based on the saturation principle. Data collection techniques were in-depth interviews, field observations, document analysis, and FGDs. Data collection instruments used interview guidelines, voice recorders (with permission), and field notes. The analysis used was thematic. Data validity was verified by triangulation. Research results: Main strengths: the system is standardized (SOP, financing, evaluation). Main weaknesses: human resources, facilities, communication, and logistics. Biggest opportunities: strengthening the referral system and increasing human resources capacity. The main threat of patient overload due to referrals and delays in PEB management is influenced by several factors, including input, process, and output aspects of the healthcare system. Input Aspects (Men, Money, Methods)

Keywords: constraints; management; obstacles; preeclampsia; severity

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INTRODUCTION

The success of maternal health programs can be assessed through a key indicator, namely the Maternal Mortality Ratio (MMR). This indicator also reflects the overall health status of a population due to its sensitivity to improvements in healthcare services, both in terms of accessibility and quality. According to World Health Organization (2020), the global maternal mortality rate remains high at 223 per 100,000 live births. Preeclampsia is one of the leading causes of maternal and neonatal morbidity and mortality worldwide. It accounts for more than 70,000 maternal deaths and 500,000 fetal deaths annually, contributing to approximately 14% of global maternal deaths. Among pregnant women, approximately 4.6% experience preeclampsia, while 1.4% develop eclampsia.

Based on the Indonesian Health Profile (2023), the MMR in Indonesia was 189 per 100,000 live births, which is higher than in several Southeast Asian countries such as Malaysia, Brunei, Thailand, and Vietnam. Although this figure approaches the 2024 national target of 183 per 100,000 live births, further efforts are needed to achieve the Sustainable Development Goals (SDGs) target of 70 per 100,000 live births by 2030. Hypertensive disorders in pregnancy remain the leading cause of maternal mortality in Indonesia, followed by obstetric hemorrhage and other complications. Preeclampsia is the most common hypertensive disorder in pregnancy, affecting

approximately 7–10% of all pregnancies. Despite advancements in healthcare, the incidence of preeclampsia has not significantly decreased over the past two decades. Severe preeclampsia is a serious pregnancy complication characterized by high blood pressure (≥ 160/110 mmHg), thrombocytopenia, renal dysfunction, liver impairment, pulmonary edema, neurological symptoms, and fetal growth restriction. This condition poses significant risks to both maternal and fetal health, including preterm birth, low birth weight, asphyxia, and perinatal mortality.

In Padang City, maternal deaths increased from 17 cases in 2022 to 23 cases in 2023. Data from Dr. M. Djamil General Hospital also show an increase in severe preeclampsia cases from 13.64% in 2023 to 14.75% in 2024. Preliminary observations further indicated that among 43 deliveries, 7 cases were diagnosed with severe preeclampsia. Although management guidelines for severe preeclampsia are well established, various challenges persist in clinical practice. Delayed treatment, suboptimal interprofessional collaboration, limited resources, and administrative barriers often hinder effective management. Previous studies have highlighted that inadequate adherence to clinical guidelines, insufficient training, and lack of practical protocols contribute to gaps in knowledge and practice among healthcare providers. Qualitative research is essential to explore these challenges in depth, as it captures non-technical aspects such as communication, workload, resource availability, and decision-making dynamics. Understanding these factors is crucial for developing context-specific and practical solutions. Therefore, this study aims to explore the barriers and challenges in the management of severe preeclampsia at Dr. M. Djamil General Hospital. The findings are expected to contribute to improving maternal healthcare systems and informing policy decisions to enhance maternal and neonatal safety.

METHOD

This study employed a qualitative research design with a case study approach to explore barriers and challenges in the management of severe preeclampsia at Dr. M. Djamil General Hospital, Padang.

Study Design and Setting

The study was conducted in a tertiary referral hospital, which serves as a major referral center in West Sumatra, Indonesia. Data collection was carried out in 2025.

Participants

Participants were selected using purposive sampling based on their direct involvement in the management of severe preeclampsia. Informants included: Hospital management representatives, Obstetricians and gynecologists, Midwives, Nurses from the emergency department, delivery room, inpatient ward, ICU, NICU, and operating room, Patients diagnosed with severe preeclampsia and/or their family members

Inclusion criteria were healthcare professionals with at least one year of working experience and active involvement in patient management. Patients or families were included if they had experienced the care process for severe preeclampsia.

Data Collection

Data were collected using multiple methods to ensure depth and validity: In-depth interviews, Direct observation, document review (SOPs, medical records, reports), focus Group Discussions (FGDs), all interviews were conducted using semi-structured interview guides and recorded with participants' consent.

Data Analysis

Data were analyzed using thematic analysis. The process included:transcription of interviews , Coding and categorization, theme identification, interpretation of findings.Data validity was ensured through triangulation of data sources, methods, and researchers.

Ethical Considerations
Ethical approval was obtained from the hospital ethics committee. All participants provided informed consent, and confidentiality was strictly maintained. This study has obtained ethical approval from Dr. M. Djamil General Hospital with approval number: DP.04.03/D.XVI.10.1/315/2025.

RESULT
The findings are presented based on a SWOT framework (Strengths, Weaknesses, Opportunities, Threats) and system components (input–process–output).

Strengths
The hospital has established a structured system for managing severe preeclampsia, including: Availability of Standard Operating Procedures (SOPs), national health insurance coverage facilitating access to care, regular monitoring and evaluation mechanisms
These strengths support standardized and coordinated patient management.

Weaknesses
Several internal limitations were identified: shortage of healthcare personnel in high-demand units, limited availability of equipment and facilities, communication gaps among healthcare providers, inconsistent availability of medications and logistics. These factors contribute to delays and inefficiencies in patient care.

Opportunities
Opportunities for improvement include: strengthening the referral system, capacity building through continuous training, development of integrated care pathways, implementation of digital health systems, these opportunities can enhance the quality and timeliness of care.

Threats
External challenges identified include:high patient load due to referral cases, delays in referral and transportation systems, complex administrative procedures, socioeconomic barriers affecting patient access. These threats may lead to delayed treatment and increased risk of complications.

Input–Process–Output Analysis
Input Human resources, facilities, SOPs, and funding mechanisms are available but not optimal.

Process
Clinical management follows guidelines; however, delays occur due to coordination issues and resource constraints.

Output
Patient outcomes are influenced by delays and system inefficiencies, including prolonged hospitalization and complications.

DISCUSSION
This study highlights that the management of severe preeclampsia is influenced by complex interactions between system-level and clinical factors. The availability of SOPs and structured systems reflects alignment with standards recommended by World Health Organization, emphasizing evidence-based management. However, implementation gaps remain significant, particularly in resource-limited settings. Human resource limitations were identified as a major barrier, consistent with previous studies showing that workforce shortages contribute to delayed care and increased maternal morbidity. In high-burden referral hospitals, workload imbalance further exacerbates these challenges.

Communication and coordination issues among healthcare providers were also prominent. Effective interprofessional collaboration is essential in managing obstetric emergencies such as severe preeclampsia, where rapid decision-making is critical. Logistical constraints, including limited availability of medications and equipment, were found to impact service delivery. These findings align with studies in developing countries, where supply chain issues remain a persistent problem. From an external perspective, referral system inefficiencies and patient overload significantly affect service quality. Delays in referral and transportation contribute to late presentation and increased complication rates. The SWOT analysis demonstrates that while the hospital has strong structural foundations, operational challenges hinder optimal outcomes. Addressing these barriers requires a comprehensive approach, including policy support, system strengthening, and capacity building.

CONCLUSION

The management of severe preeclampsia at Dr. M. Djamil General Hospital is supported by established systems and guidelines; however, multiple barriers and challenges persist. Key challenges include: Human resource limitations, inadequate facilities and logistics, communication gaps, referral system inefficiencies, these factors affect the timeliness and effectiveness of care.

REFERENCES

Aboshnin, Z. A., Razzaq, S. A., & Hashem, L. H. (2024). Preeclampsia management: Advancements, guidelines, and emerging perspectives. Academia Open. https://doi.org/10.21070/acopen.9.2024.8793

American College of Obstetricians and Gynecologists. (2020). Gestational hypertension and preeclampsia. Obstetrics & Gynecology, 135(6), e237–e260.

Ananth, C. V., Keyes, K. M., & Wapner, R. J. (2021).Pre-eclampsia rates in the United States, 1980–2019. American Journal of Obstetrics and Gynecology, 225(3), 286.e1–286.e13.

Benschop, L., Schalekamp-Timmermans, S., Schelling, S., et al. (2020). Lifestyle factors and preeclampsia risk. Hypertension, 75(5), 1336–1343.

Brown, M. A., Magee, L. A., Kenny, L. C., et al. (2021). Hypertensive disorders of pregnancy: ISSHP classification and management recommendations. Hypertension, 77(2), e1–e18.

Duley, L., Meher, S., & Abalos, E. (2020).Management of pre-eclampsia. BMJ, 371, m4215.

Fox, R., Kitt, J., Leeson, P., et al. (2021). Preeclampsia: Risk factors, diagnosis, and management. BMJ, 372, n722.

Gestational Hypertension and Preeclampsia Study Group. (2023). Global trends in hypertensive disorders of pregnancy. The Lancet Global Health, 11(8), e1200–e1210.

Ghulmiyyah, L., & Sibai, B. (2020). Maternal mortality from preeclampsia/eclampsia. Seminars in Perinatology, 44(4), 151–160.

Hauspurg, A., & Jeyabalan, A. (2021). Postpartum preeclampsia management. Clinical Obstetrics and Gynecology, 64(1), 157–166.

Kementerian Kesehatan RI. (2022). Profil kesehatan Indonesia 2021. Jakarta: Kemenkes RI.

Kementerian Kesehatan RI. (2023). Profil kesehatan Indonesia 2022. Jakarta: Kemenkes RI.

Khalil, A., Samara, A., O'Brien, P., et al. (2023). Global failure to tackle maternal mortality. The Lancet Global Health, 11(8), e1120–e1121.

Magee, L. A., Singer, J., Lee, T., et al. (2022).Management of hypertension in pregnancy. Hypertension, 79(6), 124–134.

Mol, B. W. J., Roberts, C. T., Thangaratinam, S., et al. (2021). Pre-eclampsia. The Lancet, 387(10022), 999–1011.

Muslichah, M., Prawitasari, S., & Rachman, I. T. (2021). Hubungan PEB dengan pertumbuhan janin. Jurnal Kesehatan Reproduksi, 12(2), 85–92.

Nugroho, T., & Utami, S. (2022). Faktor risiko preeklampsia pada ibu hamil. Jurnal Kebidanan Indonesia, 13(1), 45–52.

Poniedziałek-Czajkowska, E., Mierzyński, R., & Leszczyńska-Gorzelak, B. (2023). Obesity and preeclampsia. International Journal of Environmental Research and Public Health, 20(2), 1267.

Poon, L. C., Shennan, A., Hyett, J. A., et al. (2020). The International Federation of Gynecology and Obstetrics (FIGO) initiative. International Journal of Gynecology & Obstetrics, 150(3), 287–293.

Prayoga, R., & Sari, D. (2023). Analisis sistem rujukan maternal di Indonesia. Jurnal Kesehatan Masyarakat, 18(2), 101–110.

Rana, S., Lemoine, E., Granger, J. P., & Karumanchi, S. A. (2020). Preeclampsia pathophysiology. Circulation Research, 124(7), 1094–1112.

Say, L., Chou, D., Gemmill, A., et al. (2021). Global causes of maternal death. The Lancet Global Health, 9(7), e1080–e1090.

Sharma, D. D., Chandresh, N., Javed, A., et al. (2024). Management of preeclampsia: Review. Cureus, 16(1), e51512.

Sibai, B. M. (2020). Evaluation and management of severe preeclampsia. American Journal of Obstetrics and Gynecology, 223(2), 192–203.

Syairaji, M., Nurdiati, D. S., Wiratama, B. S., et al. (2024). Maternal mortality in Indonesia. BMC Pregnancy and Childbirth, 24, 515.

Syam, W. D. P., Nulanda, M., Haeriyanti, H., et al. (2022). Faktor risiko PEB. Jurnal Pendidikan Tambusai, 8(1), 1123–1130.

Tessema, G. A., Laurence, C. O., Melaku, Y. A., et al. (2021). Trends in maternal mortality. BMC Public Health, 21, 123.

Townsend, R., O'Brien, P., & Khalil, A. (2021). Current best practice in preeclampsia. BMJ, 372, n144.

Utami, R., & Dewi, S. (2022). Kualitas pelayanan maternal di RS. Jurnal Administrasi Rumah Sakit, 8(2), 89–98.

WHO. (2020). WHO recommendations on maternal health. Geneva: World Health Organization.

WHO. (2022). Recommendations for prevention and treatment of preeclampsia. Geneva: WHO.

WHO. (2023). Maternal mortality: Levels and trends 2000–2023. Geneva: WHO.

Wulandari, A., & Fitriani, Y. (2023). Beban kerja tenaga kesehatan. Jurnal Keperawatan Indonesia, 26(1), 55–63.

Yuliani, E., & Sari, M. (2021). Manajemen kegawatdaruratan obstetri. Jurnal Kebidanan, 10(2), 120–128.

Zhang, J., Meikle, S., & Trumble, A. (2020). Severe maternal morbidity associated with preeclampsia. Obstetrics & Gynecology, 135(5), 123–130.