



CLINICAL DETERMINANTS AND SERVICES MODEL ON REFERRAL DECISIONS FOR CHILDBIRTH IN PRIMARY MIDWIFERY SERVICES

Roichatul Djannah [□]

¹Universitas Salakanagara, Indonesia
roichatul@unsaka.ac.id

Abstract

Referrals for delivery are a crucial component of maternal health care systems to prevent more severe maternal complications. In primary midwifery care, referral decisions are influenced not only by the mother's clinical condition but also by midwifery service factors. This study aims to analyze the clinical and service determinants of referral decisions for delivery in primary midwifery care. The study used an analytical observational design with a retrospective approach. Data were obtained from the delivery register, partograph, and Puskesmas referral book for 2024 with a population of 174 and a sample of 121 deliveries. Data analysis was performed using univariate and bivariate analysis using Fisher's Exact Test and limited determinant modeling. The results showed that delivery referrals occurred in 8.3% of cases. Severe obstetric complications and certain midwifery service factors played a major role in the decision to refer deliveries. This study confirms that delivery referrals are an outcome of the primary midwifery service system that is influenced by the interaction of clinical and service factors.

Keywords: *Delivery Referral, Obstetric Complications, Primary Midwifery Care, Public Health.*

@Jurnal Ners Prodi Sarjana Keperawatan & Profesi Ners FIK UP 2026

* Corresponding author :

Address : Jl. MH. Thamrin C No.12 Komplek Mahkota Mas Blok, Cikokol, Kec. Tangerang, Kota Tangerang, Banten 15117

Email : roichatul@unsaka.ac.id

Phone : 081290257780

INTRODUCTION

Reducing maternal mortality remains a top priority for health development in Indonesia. Although the coverage of deliveries by health workers has increased, cases of maternal morbidity related to delivery complications are still frequently found. One strategic effort to prevent severe complications is to strengthen an effective and timely referral system for childbirth.

The Sustainable Development Goals (SDGs) aim to reduce the global maternal mortality ratio (MMR) to less than 70 per 100,000 live births by 2030 (SDGs, 2015). The SDGs have made maternal health a priority in Indonesia's health policy agenda since the late 1980s (Agustini & Indrawati, 2024). The main cause is obstetric complications, which are complications or diseases that arise during pregnancy, childbirth, and postpartum experienced by about 20% of all pregnant women, but less than 10% of obstetric complications are handled properly. (Simbolon1 & Djazuli Chalidyanto2, 2013)

Primary midwifery services, particularly community health centers, play a strategic role as *gatekeepers* in the maternal referral system. At this stage, midwives are responsible for assessing risks, detecting obstetric complications, and making referral decisions. However, referral decisions are not always based on clinical factors alone. Maternal factors, the type of obstetric complications, and the condition of midwifery services also influence the decision-making process. (Sukanto, 2020)

Most previous studies have emphasized the clinical aspects of obstetric complications as the cause of referral for delivery. This approach tends to view referral as an individual medical consequence rather than an outcome of the health care system. However, from a public health perspective, referral for delivery is the result of an interaction between clinical needs and the capacity of the health care system.

Based on this, this study was designed to analyze the determinants of childbirth referrals by integrating clinical factors and primary midwifery service factors, thereby producing a more comprehensive conceptual model of childbirth referrals

METHOD

Research Design and Type

This study is a quantitative observational analytical study with a retrospective approach and modeling of determinants of referral for delivery.

Location and Time

The study was conducted at Community Health Center X using delivery data from January to December 2024.

Population and Sample

The study population consisted of all mothers who gave birth and received initial assessment and treatment at the Sukawali Community Health Center, totaling 174.

The sample size was calculated using the Slovin formula with a 95% confidence level ($e = 0.05$).

The study sample consisted of 121 deliveries, comprising both referred and non-referred deliveries.

Research Variables: Referral decision for delivery (referred/not referred), Independent Variables: Clinical factors (obstetrics): Prolonged labor, Obstetric hemorrhage, Preeclampsia/eclampsia, Premature rupture of membranes, Fetal distress, Malpresentation

Data Analysis

Data analysis was conducted in stages:

1. **Univariate** to describe the characteristics of delivery and referral
2. **Bivariate** using Fisher's Exact Test to select variables associated with delivery referral
3. **Limited determinant modeling**, by selecting clinically and statistically significant variables to construct a model of determinants of delivery referral

RESULTS AND DISCUSSION

Univariate Analysis

Of the 121 deliveries analyzed, 111 deliveries (91.7%) were not referred and 10 deliveries (8.3%) were referred to advanced health care facilities. Most of the deliveries that were not referred were deliveries without severe obstetric complications.

Bivariate Analysis

The results of the bivariate analysis showed that not all obstetric complications were significantly associated with delivery referral. Some obstetric complications showed a significant association with delivery referral, while others did not show a statistically significant association.

Complications such as prolonged labor, obstetric hemorrhage, preeclampsia/eclampsia, and fetal distress showed a strong tendency to be associated with labor referral. Conversely, complications such as premature rupture of membranes, malpresentation, and intrapartum infection did not show a significant association in this study.

Discussion

The results of this study indicate that referrals for delivery in primary midwifery services are mainly influenced by the presence of severe obstetric complications, such as prolonged labor, obstetric hemorrhage, preeclampsia, and fetal distress. These findings are in line with the World Health Organization's recommendation that obstetric complications are a key indicator of the

need for referral to prevent maternal morbidity and mortality (Document et al., 2015) (Haoxing & System, n.d.)

The WHO emphasizes that an effective maternal referral system must be based on early detection of obstetric complications and timely decision-making at the primary care level. Referrals for delivery are not seen as a failure of primary care, but rather as part of a mechanism for ensuring the safety of mothers and fetuses in a tiered healthcare system. (World Health Organization, 2018)

The results of this study are also consistent with the *three delays model* concept, which states that delays in referral decisions are one of the main causes of maternal mortality (Thaddeus, S., & Maine, 1994) (Yisma, 2013). Thus, the accuracy of delivery referrals at Puskesmas has direct implications for maternal safety.

In the context of national policy, these findings are in line with the midwifery service guidelines issued by the Indonesian Ministry of Health, which place community health centers (Puskesmas) as *gatekeepers* in the maternal referral system. The guidelines emphasize that cases of childbirth with severe obstetric complications must be immediately referred to advanced health care facilities (Indonesia, n.d.) (Kemenkes, 2022)

In addition to clinical factors, this study shows that midwifery service factors also influence the decision to refer a patient for delivery. Compliance with the use of partographs and the timeliness of referral decisions strengthen the relationship between obstetric complications and delivery referrals. Previous studies have shown that consistent use of partographs is associated with improved quality of clinical decision-making and reduced referral delays. (Nyamtema, A. S., 2018)

From a public health perspective, referral for delivery is an outcome of the maternal health care system that is influenced by the interaction between clinical needs and service capacity. Studies in various developing countries show that strengthening referral systems and improving the competence of health workers at the primary level contribute significantly to reducing the risk of maternal mortality (Simamora & Dkk, 2021) (Tania & Niara, 2022)

These findings reinforce the systems approach in midwifery studies by placing midwives as key actors in referral decision-making. Therefore, strengthening midwives' capacity in early detection of obstetric complications, use of partographs, and compliance with referral operational standards are important strategies in efforts to improve maternal safety and achieve the Sustainable Development Goals. (Waldatul Hamidah & Hardisman, 2025) (Mappaware, 2019)

CONCLUSION

Referrals for delivery in primary midwifery services are influenced by a combination of clinical factors and midwifery service factors. Severe obstetric complications are the main determinant of referral decisions for delivery, which are reinforced by the quality of primary midwifery services. The referral determinant model produced in this study confirms that referrals for delivery are an outcome of the maternal health care system.

REFERENCES

- Agustini W sri, Indrawati R. Determinan Faktor Kematian Ibu Di Indonesia: Tinjauan Sistematis Determinant Factors of Maternal Death in Indonesia: a Systematic Review. *Bina J Pembang Drh.* 2024;3(1):43–58.
- Simbolon1 D, , Djazuli Chalidyanto2 E. DI RUMAH SAKIT PEMERINTAH INDONESIA (ANALISIS DATA RIFASKES 2011) DETERMINANTS OF PERFORMANCE MATERNAL AND CHILD HEALTH SERVICES (DATA ANALYSIS OF HEALTH FACILITIES RESEARCH 2011) diukur dari tiga variabel yaitu input (segala sumber rintah sejumlah 6. *J Kebijakan Kesehat.* 2013;02(04):202–14.
- Sukanto. *Jurnal Ilmiah Pamenang-JIP SISTEM RUJUKAN DALAM SISTEM PELAYANAN KESEHATAN MATERNAL PERINATAL DI INDONESIA REFFERAL SYSTEM IN MATERNAL PERINATAL HEALTH SERVICES IN INDONESIA.* *J Ilm Pamenang.* 2020;2(1):6–16.
- Document U, Comment USE, To F, Epmm T. Strategies toward ending preventable maternal mortality (EPMM). 2015;6736(2013):1–4.
- Haoxing Z, System C. No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析 Title.
- World Health Organization. Intrapartum care for a positive childbirth experience [Internet]. 2018. 212 p. Available from: <http://apps.who.int/iris/bitstream/10665/260178/1/9789241550215-eng.pdf?ua=1%0Ahttp://www.who.int/reproductivehealth/publications/intrapartum-care-guidelines/en/>
- Thaddeus, S., & Maine D. No Title. Too far to walk Matern Mortal Context Soc Sci Med [Internet]. 1994;38((8)):1091–1110. Available from: <https://s100.copyright.com/AppDispatchServlet?publisherName=ELS&contentID=0277953694902267&orderBeanReset=true>
- Yisma E. No Title Knowledge and utilization of partograph among obstetric care givers in public health institutions of Addis Ababa,

- Ethiopia. BMC Pregnancy Childbirth [Internet]. 2013;17(1):13–7. Available from: https://www.researchgate.net/publication/234696328_Knowledge_and_utilization_of_partograph_among_obstetric_care_givers_in_public_health_institutions_of_Addis_Ababa_Ethiopia
- Indonesia KKR. Pedoman Pelayanan Antenatal, Bersalin, Nifas dan bayi baru Lahir o Title. Germas Gerak Hidup Sehat [Internet]. 2020. Available from: <https://drive.google.com/file/d/13OowLt338BV8B1096O7sjxFBVq1835ez/view>
- Kemkes. <https://kemkes.go.id/id/profil-kesehatan-indonesia-2022>. 2022. Profil Kesehatan Indonesia 2022. Available from: <https://kemkes.go.id/id/profil-kesehatan-indonesia-2022>
- Nyamtema, A. S. et al. Partograph use and obstetric outcomes. BMC Pregnancy and Childbirth,. BMC Pregnancy Childbirth, [Internet]. 2018;18:212. Available from: Partograph use and obstetric outcomes. BMC Pregnancy and Childbirth,
- Simamora FA, Dkk. Jurnal kesehatan ilmiah indonesia (indonesian health scientific journal). Hub Mutu Pelayanan Kesehatan Terhadap Tingkat Kepuasan Pasien Rawat Jalan Di Puskesmas Mangasa Kota Makassar. 2021;6(2):193–204.
- Tania ZN, Niara SI. Determinant of Maternal Mortality and Effort to Reduce It: Literature Study. J Ilm Kesehat Masy. 2022;14(3):2022.
- Waldatul Hamidah, Hardisman H. Analisis Kebijakan Pemberdayaan Ibu Hamil dalam Deteksi Dini Komplikasi Kehamilan di Indonesia: Scoping Review. J Siti Rufaidah. 2025;3(4):40–9.
- Mappaware NA. Faktor Determinan Komplikasi dan Rujukan Kasus Obstetri. UMI Med J. 2019;3(2):85–97.