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The practice of birth preparedness and complication readiness (BPCR) in Panti District, Jember Regency

Devi Arine Kusumawardani*, Ni'mal Baroya, Elok Permatasari

Faculty of Public Health, Universitas Jember
Jalan Kalimantan Kampus Bumi Tegal nomor 1/93, Krajan Timur, Boto, Sumbersari, Jember,
68121, East Java

*Corresponding author: deviarine@unej.ac.id

ABSTRAK

Latar belakang: Angka Kematian Ibu (AKI) yang tinggi masih menjadi tantangan di negara berkembang termasuk di Indonesia. Kematian ibu dapat dicegah melalui penatalaksanaan dan perawatan kesehatan yang tepat. Perencanaan persalinan dan pencegahan komplikasi (P4K) merupakan strategi kunci agar pengambilan keputusan tepat dan cepat dalam mencari layanan kesehatan sehingga dapat berdampak terhadap penurunan angka kematian ibu. Kabupaten Jember termasuk salah satu kabupaten dengan Angka Kematian Ibu tertinggi sampai dengan akhir tahun 2021 di tingkat Provinsi Jawa Timur dan tingkat nasional.

Tujuan: Penelitian ini bertujuan untuk menilai proporsi praktek persiapan persalinan dan pencegahan komplikasi (P4K) dan komponen P4K pada ibu hamil.

Metode: Penelitian deskriptif ini dilakukan pada ibu hamil di wilayah kerja Puskesmas Panti, Kabupaten Jember sebagai Puskesmas dengan tingkat kematian ibu tertinggi di kabupaten Jember pada tahun 2020. Penelitian dilaksanakan pada bulan Agustus sampai dengan November 2021. Sebanyak 110 ibu hamil dipilih menggunakan simple random sampling. Ibu hamil diwawancarai menggunakan instrument P4K yang diadaptasi dari John Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) untuk mengidentifikasi sembilan indikator P4K.

Hasil: Proporsi praktek P4K dalam kategori baik pada ibu hamil sebesar 60%. Komponen P4K yang paling disiapkan oleh ibu hamil antara lain perencanaan transportasi (89,10%) dan perencanaan persalinan dengan tenaga kesehatan (82,7%). Sedangkan komponen yang kurang dipersiapkan oleh ibu hamil antara lain mengidentifikasi tanda bahaya selama masa kehamilan, persalinan, dan nifas.

Kesimpulan: Proporsi praktek P4K pada ibu hamil termasuk kategori cukup. Edukasi kesehatan berbasis masyarakat tentang persiapan persalinan dan identifikasi tanda bahaya selama kehamilan, persalinan, dan nifas sangat penting untuk mencegah kematian ibu.

KATA KUNCI: persiapan persalinan; pencegahan komplikasi; tanda bahaya; edukasi; kematian ibu

ABSTRACT

Background: High maternal mortality rates remain challenging in developing countries such as Indonesia. These maternal deaths are preventable with appropriate management and care. Birth preparedness and complication readiness (BPCR) is a crucial strategy for making prompt decisions to seek care resulting in reduced maternal mortality. Jember regency is one of the districts that rank first until the end of 2021 with the highest death rate in East Java and nationally.

Objectives: This study aims to assess the proportion of BPCR practices and the aspect of BPCR in pregnant women.

Methods: This descriptive research was conducted among pregnant women in the working area of Panti Primary Health Service, Jember Regency as Primary Health Services with the highest maternal mortality rate in Jember regency in 2020. This study was conducted from August to November 2021. A total of 110 pregnant women were recruited by simple random sampling. The respondents were interviewed using the BPCR index, adapted from the John Hopkins Program for International Education in Gynecology and Obstetrics to identify nine indicators of BPCR.

Results: The proportion of good BPCR in pregnant women was 60,00%. The most mentioned aspect of BPCR was planning transportation (89,10%) and planning to give birth with a skilled provider (82,7%). The elements that pregnant women are least prepared for are aware of the danger signs during pregnancy, childbirth, and postpartum.

Conclusions: The proportion of good BPCR among pregnant women was moderate. Community-based health education about preparation for birth and awareness of danger signs during pregnancy, labor, and postpartum is crucial to prevent maternal mortality.

KEYWORD: birth preparedness; complication readiness; danger signs; education; maternal mortality

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INTRODUCTION

The high maternal mortality rate is a major global health problem. Based on data from the World Health Organization in 2019, it is known that every day there are 810 maternal deaths due to complications of pregnancy and childbirth, and 94% of these maternal deaths occur in developing countries (1). The Southeast Asian region contributes to maternal mortality rates of 22% of the total 88% of maternal deaths globally. Indonesia is one of the countries contributing to the highest mortality rate in the Southeast Asian region, with deaths reaching 305 per 100,000 live births in 2015 (2). The high mortality rate in Indonesia reflects inequality in access to quality health services and disparities in various provinces in Indonesia. East Java

Province is one of Indonesia's provinces with a high mortality rate. And Jember district is one of the districts that rank first until the end of 2021 with the highest death rate in East Java and nationally. Based on data from the East Java Provincial Health Office, the maternal mortality rate in Jember district is 173.53 per 100,000 live births (3). Reducing maternal mortality needs to be done comprehensively through specific programs to prevent gaps in access to quality health services.

Efforts to reduce maternal mortality are listed in one of the goals of the Sustainable Development Goals initiated by the United Nations, namely reducing the global maternal mortality rate to less than 70 per 100,000 live births, and no country has a maternal mortality

rate that is twice as high as the maternal mortality rate. mothers globally by 2030 (4). Most maternal deaths can be prevented with proper handling and management by skilled health workers. High maternal mortality can be caused by three delays, namely being late in recognizing danger signs, being late in making decisions and seeking health facilities, and being late in getting treatment at health facilities by skilled health workers (5). Birth preparedness and complication readiness are essential strategies to reduce maternal mortality by preventing the three delays.

Birth preparedness and complication readiness is a comprehensive approach program that aims to increase the use and effectiveness of maternal and newborn health services, including preparation for childbirth and being ready to face complications of pregnancy, childbirth, postpartum, and newborns. Birth preparedness and complication readiness programs are expected to prevent three delays in maternal mortality (6). In addition, WHO strongly recommends birth preparedness and complication readiness to increase skilled care and timely use of health facilities for obstetric complications and complications in newborns (7). Birth preparedness and complication readiness include knowledge about complications of pregnancy, childbirth, postpartum, and newborns, establishing financial plans for delivery, decision-making in emergency conditions, and preparedness for childbirth preparation by skilled health workers in health care facilities to reduce maternal morbidity and mortality (8). Therefore, this study aims to determine the proportion of good delivery planning practices and prevention of complications in pregnant

women who perform antenatal check-ups and to identify practices of delivery planning and prevention of complications based on sociodemographic characteristics.

MATERIALS AND METHODS

The study used a descriptive design which was carried out from August to November 2021. The study was conducted in the working area of the Panti Primary Health Center, Jember Regency, with the highest maternal mortality cases in Jember Regency. The population of the study was pregnant women totaling 238 people. The sampling technique used is simple random sampling with calculations using the formula. The number of samples obtained is 110 people with the inclusion criteria of pregnant women from the first to third trimesters, having a Maternal and Child Health Handbook, and being in the research area since they were pregnant.

The instrument used was a questionnaire to measure the independent variables, namely the socio-demographic characteristics of pregnant women (age, education level, income level, occupation, social assistance recipients), obstetric factors (gestational age, parity, history of complications), distance from residence to health facilities, and antenatal care. In contrast, the dependent variable is the practice of preparation for delivery and prevention of complications at the individual level. The index for labor preparation and prevention of complications refers to the BPCR tools for maternal and newborn health monitoring, Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO). The practice of planning delivery and preventing

complications at the individual level consists of knowledge of the danger signs of pregnancy, childbirth, postpartum, and newborns, planning to carry out antenatal examinations at least 4 times in health facilities by skilled health workers, conducting antenatal checks for the first time in the first trimester in health facilities, planning delivery at health facilities, planning costs for the delivery, preparing transportation to go to health facilities when giving birth, and planning blood donors. Respondents who filled out at least five criteria on delivery planning and prevention of complications could be categorized as "well prepared," and respondents who filled out less than five criteria were categorized as "less prepared". The data were analyzed using SPSS version 22. The implementation of this research has received approval from the Research Ethics Committee of the Faculty of Dentistry, the University of Jember with number 1420/UN25.8.KEPK/DL/2021.

RESULTS AND DISCUSSION

RESULTS

Table 1 shows that the majority of pregnant women aged 20-35 years (81.82%) with a low level of education (70.00%), do not work (87.27%), and have no income (86.36%). Most obstetric characteristics of pregnant women were multiparous (74.55%) with the third trimester (42.73%) of pregnancy. And most of the respondents did not receive social assistance either from the government or from other parties. Most of the respondents who received social services were in the form of non-cash food assistance and the Program Keluarga Harapan (PKH) (80.00%). Most respondents live less than 30 minutes from the

nearest health facility (90.91%).

Based on the study's results **Table 2**, it was found that most pregnant women in the Panti Health Center working area (60%) applied BPCR in a good category BPCR. The indicators contributing to the BPCR practice for pregnant women in the Panti Health Center working area are preparing transportation to health facilities (89.1%) and planning deliveries at independent practice midwives, Primary Health Centers, and hospitals and assisted by skilled health workers (82.7%). These two indicators are the indicators that are prepared mainly by pregnant women in the practice of planning delivery and preventing complications. The indicator of knowledge possessed by pregnant women in BPCR practice has the lowest value.

Regarding knowledge about the danger signs of pregnancy, 22.7% of respondents understand that heavy bleeding is a dangerous sign of pregnancy. However, 100% of respondents did not understand that blurred vision, high fever, and loss of consciousness were included in the danger signs of pregnancy. On the indicator of knowledge about the danger signs of labor, 100% of respondents did not know that severe headaches, high fever, loss of consciousness, and decreased/accelerated fetal movements were signs of danger in labor. The same is the case with indicators of knowledge about signs of postpartum or the puerperium. 100% of respondents did not understand that severe headaches, blurred vision, seizures, swollen hands and face, unpleasant smelling fluid from the reproductive organs, and loss of consciousness were dangerous signs during the puerperium. Most respondents do not understand the danger signs in pregnant

women, childbirth, and postpartum. In the indicator of knowledge about the danger signs of newborns, it is known that 100% of respondents do not know if the baby does not want to drink breast milk and there are blisters

on the baby's skin is a danger sign for newborns. Based on the study results, most respondents did not understand the danger signs that pregnant women and newborns may experience.

Table 1. Analysis of sociodemographic characteristics of pregnant women

Characteristics	Total	
	n	%
Age		
= 20 years old and >35 years old	20	18.18
21 - 35 years old	90	81.82
Total	110	100.00
Educational background		
Elementary or secondary school	77	70.00
High school or diploma or bachelor's degree	33	30.00
Total	110	100.00
Occupation		
Unemployed	96	87.27
Employed	14	12.73
Total	110	100.00
Income		
No income	95	86.36
< Rp 2.355.662	12	10.91
= Rp 2.355.662	3	2.73
Total	110	100.00
Parity		
Primipara	28	25.45
Multipara	82	74.55
Total	110	100.00
Gestational age		
Trimester 1	19	17.27
Trimester 2	44	40.00
Trimester 3	47	42.73
Total	110	100.00
The average distance from health facilities		
<=30 minutes	100	90.91
> 30 minutes	10	9.09
Total	110	100.00
Health insurance		
Didn't receive social assistance	88	80.00
Receive social assistance	22	20.00
Total	110	100.00

Table 2. The practice of indicators birth preparedness and complication readiness

Practice of BPCR		Less prepared	Well prepared	Total			
		n	%	n	%		
Birth Preparedness and Complication Readiness		44	40.00	66	60.00	110	100
9 indicators of BPCR		Yes	No	Total			
		n	%	n	%	n	%
Know = 3 danger signs during pregnancy		1	0.9	109	99.1	110	100
Know = 4 danger signs during childbirth		0	0	110	100,0	110	100
Know = 3 danger signs during postpartum		0	0	110	100,0	110	100
Know = 3 danger signs in newborn		0	0	110	100,0	110	100
Conduct antenatal care (ANC) at least 4 times in the health facilities	60	54.5	50	45.5	110	100	100
Conduct antenatal care in the health facilities by skilled health personnel	62	56.4	48	43.6	110	100	100
Planning for childbirth in primary health centers or hospitals and assisted by skilled health workers	91	82.7	19	17.3	110	100	100
Prepare delivery costs from independent sources of funds, health insurance, and private insurance	87	79.1	23	20.9	110	100	100
Arrange transportation to the health facilities	98	89.1	12	10.9	110	100	100

DISCUSSION

The age of most of the respondents belongs to the stage of young adulthood and reproductive age, which is the ideal age to marry and have children. Knowledge, skills, and experience in caring for pregnancy and preparing for childbirth are related to the age and psychological maturity of wife. At the reproductive age, readiness to accept responsibility, reproduce, to be ready to manage the family, and to be prepared to take care of children has been formed so that efforts to care for pregnancy and preparation for childbirth can be carried out more optimally (9,10).

Most of the respondents' education is in a

low category (elementary or secondary school). Education is a process to change attitudes and behavior so that the potential and strength in self-control, personality, intelligence, and skills can be increased. Knowledge generally contributes to a person's attitude or decision-making. Studies show that husbands and wives with higher levels of education tend to be better informed and are more likely to be involved in birth planning and preventing complications during pregnancy, delivery, and the puerperium. Higher levels of education tend to encourage husbands and wives to have more adequate jobs so that they are socially and financially better prepared to make the necessary decisions, especially in

terms of pregnancy and childbirth (11-13).

Most obstetric characteristics of pregnant women were multiparous (74.55%) with the third trimester (42.73%) of pregnancy. Studies show that multiparous mothers have better knowledge and practice of birth planning than primiparous mothers. Higher maternal parity allows mothers to have experience in preparing for childbirth and to have an early pregnancy check with skilled health workers (8). And most of the respondents did not receive social assistance either from the government or from other parties. Most of the respondents who received social services were in the form of non-cash food assistance and the Program Keluarga Harapan (PKH) (80.00%). Studies show that pregnant women with health insurance have access and reach to maternal health services, including a complete frequency of antenatal care, giving birth in health facilities assisted by skilled health workers, and conducting postpartum examinations at health facilities by skilled health workers compared to mothers. Pregnant women who do not have health insurance, especially people with low socioeconomic levels. The impact of health insurance on the quality of antenatal care is higher in groups with high socioeconomic status. Obstacles to comprehensive health insurance coverage are poor supply-side readiness and inadequate quality of care; the referral system is still lacking, resulting in delays in service provision (14-16).

Most respondents live less than 30 minutes from the nearest health facility (90.91%). Distance to health services relates to how far the facility can be reached and the utilization to health facilities. The average travel time to a health facility, including

predictors in determining the place of delivery and emergency obstetric services, is that pregnant women whose travel time from home to health facilities is less than 30 minutes have a 4 times greater chance of giving birth at a health facility than pregnant women who have time. travel more than 30 minutes. Remote access from health facilities can be related to obstacles in the availability of emergency obstetric care, lack of community support, and transportation problems resulting in deliveries not being carried out in adequate health facilities (17-19). In addition, access to health facilities is related to information and health services obtained by husband and wife during pregnancy. Access to health facilities that are far enough can hinder the early detection and management of complications during pregnancy, childbirth, and postpartum so that it cannot be done from the start, and preparation for delivery cannot be carried out optimally (20,21). The low utilization of health facilities can be caused by the long geographical distance. The location of healthcare facilities that are not strategic enough to be reached results in reduced utilization of health facilities it affect health conditions. Husbands and families with easy access to health services will have their health conditions checked more often than husbands and families who have difficulty reaching healthcare facilities(7,22,23).

The Birth Preparedness and Complications Readiness Program is one of the efforts to accelerate the reduction of Maternal and Newborn Mortality Rates through increasing access and quality of antenatal care, delivery assistance, prevention of complications, and family planning. BPCR practice includes 9 main

indicators, namely: knowledge of the danger signs of pregnancy, knowledge of the danger signs of childbirth, knowledge of the danger signs of the postpartum period, knowledge of the danger signs of newborns, conducting antenatal care at health workers, conducting complete ANC, planning delivery at health workers, preparing delivery costs and preparing transportation to health facilities (24,25).

The indicator of knowledge possessed by pregnant women in BPCR practice has the lowest value. Especially on indicators of knowledge of danger signs of childbirth, knowledge of danger signs during the postpartum period (postpartum), and knowledge of danger signs for newborns, none of the respondents understood these danger signs. This shows that of the overall indicators of BPCR practice, the indicator of knowledge of pregnant women is still a fundamental problem. Pregnant women do not have sufficient knowledge about the danger signs during pregnancy and childbirth. And this will affect decision-making in health facilities during an emergency and risk contributing to maternal mortality.

In the indicator of knowledge about the danger signs of newborns, it is known that 100% of respondents do not know if the baby does not want to drink breast milk and there are blisters on the baby's skin is a danger sign for newborns. Based on the study results, most respondents did not understand the danger signs that pregnant women and newborns may experience. Understanding the danger signs early, especially for pregnant women and also for the families of pregnant women, can speed up decision-making to carry out examinations at health facilities.

Knowledge is the basis of efforts to prevent complications in pregnant women, childbirth, postpartum, and newborns. The common knowledge of pregnant women is a form of evaluation that the education process for pregnant women and their families need to be carried out regularly and continuously (26-28).

CONCLUSION AND RECOMMENDATION

The proportion of good BPCR among pregnant women was moderate. The most mentioned indicator of BPCR was planning transportation to the health facility and planning to give birth with a skilled provider. The indicator that is least prepared by pregnant women are blood donors and awareness of the danger signs during pregnancy, childbirth, postpartum, and newborn. Community-based health education about preparation for birth and awareness of danger signs during pregnancy, labor, and postpartum is crucial to prevent maternal mortality.

REFERENCES

1. WHO, UNICEF, UNFPA WBG and the UNPD. Maternal Mortality [Internet]. Geneva, Switzerland: World Health Organization. 2019. Available from: <https://www.who.int/news-room/fact-sheets/detail/maternal-mortality>
2. Indonesia KKR. Profil Kesehatan Indonesia 2018 [Internet]. 2018th ed. Vol. 1227. Kemenkes RI; 2018. 496 p. Available from: website: <http://www.kemkes.go.id>
3. Dinas Kesehatan Provinsi Jawa Timur. Profil Kesehatan Provinsi Jawa Timur 2020 [Internet]. Dinas Kesehatan Provinsi Jawa

- Timur. Dinas Kesehatan Provinsi Jawa Timur; 2020. 1–123 p. Available from: www.dinkesjatimprov.go.id
4. Teekhasaene T, Kaewkiattikun K. Birth preparedness and complication readiness among pregnant women in Southern Ethiopia. *Adolescent Health Medicine and Therapeutics*. 2020;1(1):1–8. DOI: <https://doi.org/10.2147/AHMT.S236703>.
 5. Andarge E, Nigussie A, Wondafrash M. Factors associated with birth preparedness and complication readiness in Southern Ethiopia: a community based cross-sectional study. *BMC Pregnancy Childbirth*. 2017;17(1):412.
 6. Soubeiga D, Gauvin L, Hatem MA, Johri M. Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: Systematic review and meta-analysis. *BMC Pregnancy Childbirth*. 2014;14(1):1–11.
 7. Bintabara D, Mohamed MA, Mghamba J, Wasswa P, Mpembeni RNM. Birth preparedness and complication readiness among recently delivered women in chamwino district, central Tanzania: A cross sectional study “Obstetrics.” *Reproductive Health [Internet]*. 2015;12(1):1–8. Available from: Biomed Central.
 8. Kamineni V, Murki A, Kota V. Birth preparedness and complication readiness in pregnant women attending urban tertiary care hospital. *Journal of Primary Medicine and Family Care*. 2017;6(2):297. DOI: [10.4103/2249-4863.220006](https://doi.org/10.4103/2249-4863.220006).
 9. Gize A, Eyassu A, Nigatu B, Eshete M, Wendwessen N. Men's knowledge and involvement on obstetric danger signs, birth preparedness and complication readiness in Burayu town, Oromia region, Ethiopia. *BMC Pregnancy Childbirth*. 2019;19(1):1–9.
 10. Kakaire O, Kaye DK, Osinde MO. Male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. *Reproductive Health [Internet]*. 2011;8(1):12.
 11. Gebreyesus H, Berhe T, Teweldemedhin M. Birth preparedness as a precursor to reduce maternal morbidity and mortality among pregnant mothers in Medebay Zana District, Northern Ethiopia. *BMC Research Notes [Internet]*. 2019;12(1):1–6.
 12. Tancred T, Marchant T, Hanson C, Schellenberg J, Manzi F. Birth preparedness and place of birth in Tandahimba district, Tanzania: What women prepare for birth, where they go to deliver, and why. *BMC Pregnancy Childbirth [Internet]*. 2016;16(1):1–9. DOI://dx.doi.org/10.1186/s12884-016-0945-5.
 13. Debelew GT, Afework F, Yalew AW. Factors affecting birth preparedness and complication readiness in Jimma Zone, Southwest Ethiopia: A multilevel analysis. *Pan African Medical Journal*. 2014;19:1–14. DOI: [10.11604/pamj.2014.19.272.4244](https://doi.org/10.11604/pamj.2014.19.272.4244).
 14. Anindya K, Lee JT, McPake B, Wilopo SA, Millett C, Carvalho N. Impact of Indonesia's national health insurance scheme on inequality in access to maternal health services: A propensity score matched analysis. *Journal of Global Health*. 2020;10(1):1–12. DOI:

- [10.7189/jogh.10.010429](https://doi.org/10.7189/jogh.10.010429).
15. Haile D, Habte A BB. Determinants of Frequency and Content of Antenatal Care in Postnatal Mothers in Arba, Ethiopia. *International Journal of Women's Health*. 2020;953–64. DOI: [10.2147/IJWH.S26170](https://doi.org/10.2147/IJWH.S26170).
 16. Bogale B, Astatkie A, Wakgari N. Effect of Pregnant Mothers' Forum Participation on Birth Preparedness and Complication Readiness among Pregnant Women in Dale District, Southern Ethiopia: A Comparative Cross-Sectional Study. *Journal of Pregnancy*. 2019;2019. DOI : <https://doi.org/10.1155/2019/1429038>.
 17. Belda SS, Gebremariam MB. Birth preparedness, complication readiness and other determinants of place of delivery among mothers in Goba District, Bale Zone, South East Ethiopia. *BMC Pregnancy Childbirth* [Internet]. 2016;16(1):1–12.
 18. Moran AC, Jolivet RR, Chou D, Dalglish SL, Hill K, Ramsey K, et al. A common monitoring framework for ending preventable maternal mortality, 2015-2030: Phase I of a multi-step process. *BMC Pregnancy Childbirth* [Internet]. 2016;16(1):1–13.
 19. Pindani M, Chilinda I, Botha J, Chorwe-Sungani G. Exploring community support on safe motherhood: A case of Lilongwe District, Malawi. *African Journal of Primary Health Care and Family Medicine*. 2021;13(1):1–7. DOI : [10.4102/phcfm.v13i1.290](https://doi.org/10.4102/phcfm.v13i1.290)
 20. Kalisa R, Smeele P, van Elteren M, van den Akker T, van Roosmalen J. Facilitators and barriers to birth preparedness and complication readiness in rural Rwanda among community health workers and community members: a qualitative study. *Maternal Health, Neonatology, and Perinatology*. 2018;4(1):1–7. DOI: [10.1186/s40748-018-0080-](https://doi.org/10.1186/s40748-018-0080-)
 21. Berhe AK, Muche AA, Fekadu GA, Kassa GM. Birth preparedness and complication readiness among pregnant women in Ethiopia: A systematic review and Meta-analysis. *Reproductive Health*. 2018;15(1):1–10.
 22. Sanogo NA, Yaya S. Wealth Status, Health Insurance, and Maternal Health Care Utilization in Africa: Evidence from Gabon. *Biomed Research International*. 2020;2020.
 23. Wang W, Temsah G, Mallick L. The impact of health insurance on maternal health care utilization: Evidence from Ghana, Indonesia and Rwanda. *Health Policy Plan*. 2017;32(3):366–75.
 24. Solnes Miltenburg A, Roggeveen Y, van Elteren M, Shields L, Bunders J, van Roosmalen J, et al. A protocol for a systematic review of birth preparedness and complication readiness programs. *Systematic Reviews* [Internet]. 2013;2(1):11. Available from: *Systematic Reviews*
 25. JHPIEGO. Monitoring birth preparedness and complication readiness. Tools and indicators for maternal and newborn health. Baltimore; 2004.
 26. Kusumawardani, D. A., & Wahyuningtyias F. Faktor Predisposisi Implementasi Suami Siaga Selama Pandemi Covid-19 Di Kabupaten Jember. *Ikesma*. 2021;17(November):13–21.
 27. Tadesse M, Boltana AT, Asamoah BO. Husbands' participation in birth preparedness and complication

readiness and associated factors in Wolaita Sodo town, Southern Ethiopia. African Journal of Primary Health Care and Family Medicine. 2018;10(1):1–8.

28. Zepre K, Kaba M. Birth preparedness and

complication readiness among rural women of reproductive age in Aabeshige district, Gguraghe zone, SNNPR, Eethiopia. International Journal of Women's Health. 2017;9:11–21.