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Analysis Of Determinants Of Maternal Mortality In Rural Areas: A Retrospective Study Based On Routine Health Office Data

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ABSTRACT

The Maternal Mortality Rate in Indonesia is still relatively high, namely 305/100,000 KH. The number of maternal deaths in West Java Province in 2020 was 745 cases. The causes of maternal death are still dominated by bleeding 28% and hypertension 29%. Indramayu Regency reported 61 cases in 2018, 40 cases in 2019 and 38 cases in 2020. The purpose of this study was to analyze the close determinants, intermediate determinants and distant determinants of maternal death in Indramayu Regency in 2020. This type of research is observational analytic with a case control study design. The sample was 38 case groups and the control group was 76 mothers giving birth. Data analysis includes univariate analysis, bivariate analysis (Chi-Square) and multivariate analysis using logistic regression. The results showed a relationship between close determinants pregnancy complications (p value 0.000), childbirth complications (p value 0.000) postpartum complications (p value 0.000) with maternal mortality. There is a relationship between the quality of service (p value 0.000) with maternal mortality. There is a relationship between distant determinants of education (p value 0.017) with maternal mortality. There is no relationship between anemia status (p value 0.399), antenatal examination (p value 0.276) with maternal mortality, There is no relationship between distant determinants of work (p value 0.331), economic status (p value 0.789) with maternal mortality. The most dominant factor related to maternal mortality is pregnancy complications with (p value 0.000).

INTRODUCTION

The Maternal Mortality Rate (MMR) in Indonesia is still relatively high compared to neighboring countries in Southeast Asia, but has decreased since 1992. The results of the latest survey through SUPAS 2015 obtained a figure of 305/100,000 KH (Ministry of Health of the Republic of Indonesia, 2018). The causes of maternal death in 2019 were bleeding 1,280 cases, hypertension in pregnancy 1,066 cases, infection 207 cases (RI, 2019) The number of maternal deaths in West Java Province in the last three years has fluctuated, namely in 2018 there were 700 cases, decreased in 2019 by 684 cases and increased again in 2020 by 745 cases. With the cause of maternal death still dominated by Bleeding 28% and Hypertension 29%, although other causes are still high at 24% (West Java Provincial Health Office, 2020). Likewise in Indramayu Regency, the number of maternal death cases is still quite high, compared to the city districts in the Ciayumajakuning region where in 2018/2019/2020 in Cirebon city 0/3/2 cases, Cirebon Regency 35/34/40 cases, Majalengka Regency 15/16/14 cases, Kuningan 24/22/27 cases (West Java Provincial Health Office, 2020). Meanwhile, Indramayu Regency reported 61 cases in 2018, 40 cases in 2019 and 38 cases in 2020. Although there has been a decline, it is very slow and fluctuates (Indramayu Health Office, 2021). The close determinants that directly affect maternal mortality are complications of pregnancy, childbirth, and postpartum.

The main complications that cause maternal death in almost 75% of all maternal deaths are bleeding, infection, high blood pressure (preeclampsia and eclampsia) (WHO, UNPHA, UNICEF, 2019). The results of a study conducted in Iran showed that the main causes of death identified were bleeding at 30.7% and hypertensive disorders (17.1%) (Zalvan, Tajvar, Pourreza, 2019). The close determinants are influenced by intermediate determinants, namely health status, reproductive status, access to health services, health behavior and other unknown factors. Anemia can cause postpartum hemorrhage 5 times more risky than mothers who do not experience anemia, this is indicated by the value (OR 5.096 OR > 1). Anemia in pregnancy is a major factor in maternal death due to bleeding, prolonged labor and infection (Pratama Husada Widoyoko A, 2020). Distant determinants that directly affect determinants include education, employment and economic status. The results of previous studies showed that based on education, the majority of mothers who died had secondary education 52.29%, based on occupation, the majority were housewives 68.81%, the results of the study showed a significant relationship between working mothers and maternal mortality (Respati, Sulistyowati and Nababan, 2019).

The results of recording and reporting in Indramayu Regency in 2019 reported 40 maternal deaths with the causes of maternal death being 3 bleeding, 26 HDK, 1 infection, 4 circulatory disorders and 6 others, while 3 mothers with anemia, 30 antenatal examinations according to

standards, 20 pre-referrals not according to standards, 21 mothers who did not go to school, 38 unemployed, 36 poor economic status (Indramayu Health Office, 2021). From the results of previous research, studies and reporting, the most influential were close determinants (pregnancy complications, childbirth and postpartum), intermediate determinants (anemia, pregnancy examinations and quality of referral services) and distant determinants (age, education and economic status). This study aims to analyze the determinants of maternal mortality in Indramayu Regency in 2020.

RESEARCH METHODS

This study uses an observational analytical research type with a case control study. The sample of this study was taken from all case populations and control populations. The case sample was mothers who experienced death in 2020 as recorded in the maternal mortality data at the Indramayu Regency Health Office. The types of measuring instruments used in this study are: maternal verbal autopsy documents, mother cards, childbirth registers, pregnant women's cohort registers, and maternal referral formats. Univariate analysis was performed on each variable, analysis.

RESULTS

The close determinants of pregnancy complications showed that almost all mothers in the case group experienced complications as many as 33 people (86.8%). In childbirth complications, most mothers in the case group experienced complications as many as 21 people (55.3%). In postpartum complications, most mothers in the case group experienced complications as many as 22 people (57.9%). Then in the intermediate variable of anemia status, almost all mothers in the case group were not anemic as many as 35 people (92.1%). In pregnancy examinations, almost all mothers in the case group met the standard as many as 30 people (78.9%). And in terms of service quality, almost all mothers in the case group did not meet the standard as many as 25 people (65.8%). While in the distant determinants of education, most mothers in the case group did not attend school as many as 22 people (57.9%). In the determinants of work, almost all did not work as many as 35 people (92.1%). And in terms of economic status determinants, the majority are poor, as many as 21 people (55.3%).

The results of the next study showed that the close determinants of pregnancy complications, childbirth complications and postpartum complications had a relationship with maternal mortality with a p value of 0.000 (p <0.05). Then, the determinants between anemia status and pregnancy examination did not have a relationship with maternal mortality with a p value of 0.000 (p>0.05), but the quality of service was related to maternal mortality with a p value of 0.000 (p <0.05). While the distant determinants of education and work had a relationship with maternal mortality with a p value of 0.000 (p <0.05), but economic status was not related to maternal mortality with a p value of 0.000 (p>0.05). it was concluded that the results of the multivariate analysis showed that the most dominant factor in this study was pregnancy complications, this can be seen from the results of the logistic regression analysis p value of 0.000 (p < 0.05). Relationship Between Close Determinants With Maternal Mortality in Indramayu Regency This study shows that there is a significant relationship between pregnancy complications and maternal mortality in Indramayu Regency in 2020 (p value 0.000 <0.05). With an OR value = (65.057), it means that mothers who have pregnancy complications are at 65 times greater risk of death compared to respondents who do not have pregnancy complications.

The results of multivariate analysis with logistic regression tests of pregnancy complication variables have a significant relationship with maternal mortality with an OR value of 26.980. This explains that mothers who experience pregnancy complications have a 26.980 times greater risk of death. The close determinants of labor complications show that there is a significant relationship between labor complications and maternal mortality in Indramayu Regency in 2020 (p value 0.000 <0.05). Mothers who experience complications in childbirth have a risk of experiencing maternal death 14 times greater than mothers who do not experience complications in childbirth (OR = 14.4; 95% CI: 5.04-41.2). The results of this study are in line with the study of Santoso (2019) which stated that there is an influence of complications in childbirth on the incidence of maternal death (p value = 0.057 <0.25). The close determinants of postpartum complications show that there is a significant relationship between postpartum complications and maternal death in Indramayu Regency in 2020 (p value 0.000 <0.05). Mothers who experience complications during the postpartum period have a risk of experiencing maternal death 50 times greater than mothers who do not experience complications

during the postpartum period (OR = 50.8; 95% CI: 10.8-238.5). This is in line with the research conducted by Nabila that there is a significant relationship between complications of childbirth and postpartum, with maternal mortality (Respati, Sulistyowati and Nababan, 2019). The Relationship Between Determinants Between Maternal Mortality in Indramayu Regency This study shows that there is no significant relationship between anemia status and maternal mortality in Indramayu Regency in 2020 (p value 0.399> 0.05). However, the results of this study are not in line with the results of Jayanti's study (2017) which states that there is an effect of anemia status on the risk of maternal death (p 0.013) and the OR value (3.817) which means that respondents who experience anemia are at risk 3.817 times greater of experiencing death compared to respondents who do not experience anemia.

The results of this study are in line with research stating that there is no significant effect of anemia status on maternal mortality (p = 0.285 > 0.25) Santoso (2019). The determinants between antenatal examinations show that there is no significant relationship between antenatal examinations and maternal mortality in Indramayu Regency in 2020 (p value 0.276 > 0.05). The results of this study are in line with Santoso's research (2019) which states that there is no significant influence on the regularity of antenatal care on the incidence of maternal death (p value = 0.696 > 0.25). This study is also in line with the results of Respati's study (2019) which states that there is no influence between the quantity of ANC and maternal death (p = 0.157 or p > 0.05) (OR = 0.314; 95% CI: 0.060 - 1.652).

DISCUSSION

The determinants of service quality show that there is a relationship between service quality and maternal death in Indramayu Regency (p value 0.000 < 0.05). With an OR value of 12,692. Mothers who receive services that are not in accordance with standards have a risk of experiencing maternal death 12,692 times greater than mothers who receive services according to standards. In line with the results of Indah's research with the results of the analysis of the poor referral process (OR = 3.551; 95%), CI = 1.258-10.27; p = 0.17) and pregnant women who have complications (OR 147.429; 95%, CI = 17.105-1270.702; p = 0.000) affect the incidence of maternal death (Indah H. Soenarnatalina, 2015). The Relationship Between Distant Determinants and Maternal Death in Indramayu Regency This study shows that there is a relationship between distant determinants of education and maternal death in Indramayu Regency (p value 0.017 <0.05). In line with the research of Wahyuningtyas, (2014) showed that education has a positive bivariate spatial autocorrelation relationship (I = 0.201392) or is directly proportional to MMR. In the distant determinants of work, it shows that there is no relationship between distant determinants of work and maternal mortality in Indramayu Regency (p value 0.331 > 0.05). The results of the study showed that most respondents who worked did not experience maternal mortality (66.7%), and most respondents who did not work did not experience maternal mortality (60%). This is due to the lack of variation in the mother's work, where most do not work as housewives (IRT). In line with the research of Wahyuningtyas (2014) that the bivariate spatial autocorrelation relationship between work and MMR is negative (I = -0.00103775).

The strength of the relationship is relatively weak and does not occur significantly (ρ = 0.988) with maternal mortality in Indramayu Regency (p value 0.789 > 0.05). The study showed that most mothers who had poor economic status 55.3% died. The researcher assumes that poor economic status will be more difficult to access health services for pregnant women because of limited economic resources for health care costs. The low health status of the poor population is mainly caused by limited access to health services due to cost, distance and transportation constraints (Fariadi, Kanto and Mardiyono, 2016). The results of the multivariate analysis showed that pregnancy complications were the dominant factor, pregnancy complications had a risk of experiencing maternal death 26,980 times greater compared to mothers who did not experience pregnancy complications, with a p value of 0.001 (adjusted OR = 26,980; 95% CI: 5,615 - 129,625). In line with research conducted on maternal mortality determinants, there was a significant relationship between pregnancy and postpartum complications and maternal death (Respati, Sulistyowati and Nababan, 2019).

CONCLUSIONS AND RECOMMENDATIONS

There is a significant relationship between pregnancy complications, childbirth complications, quality of service, education and maternal mortality. There is no relationship between anemia status,

antenatal examination, employment and economic status with maternal mortality. The most dominant factor related to maternal mortality is pregnancy complications. With this study, mothers are expected to be able to make efforts to prevent pregnancy complications in order to prevent maternal mortality with the participation of the village government as a supporter of health service providers.

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