

Epidemiology of Maternal Mortality in West Aceh Regency from 2018 to 2019

Sukma Elida¹, Enda Silvia Putri¹, Siti Maisyaroh Fitri Siregar², Azwar²

¹ Nutrition Department, Faculty of Public Health, Universitas Teuku Umar

² Public Health Department, Faculty of Public Health, Universitas Teuku Umar

E-mail: sukmaelida@utu.ac.id

Abstract: Maternal Mortality Rate (MMR) is one of the important targets of the Sustainable Development Goals (SDG's) where MMR is expected to be less than 70 per 100.000 live births in 2030. In 2019, MMR in Aceh Province is one of the highest in Indonesia, with 139 per 100.000 live births. The number of maternal deaths in Aceh Barat 2019 was 8 cases. This number indicated that the cases increased significantly from the previous year where there were only 3 cases. This study aims to describe epidemiology of maternal mortality in Aceh Barat based on the Health Office track record data of maternal mortality from 2018 to 2019. The methodology of this study was descriptive analytic. The results concluded that most of the mothers who experienced death were ≥ 35 years old, most of the maternal deaths occurred in pregnancy ≤ 4 , the highest maternal mortality level occurred in Meureubo, 72% of the mothers were death in hospital and most maternal deaths were caused by post-partum hemorrhage.

Keyword: Epidemiology, Maternal, Mortality, MMR

Introduction

Maternal Mortality Rate (MMR) is an indicator to assess public health. MMR is also able to assess the assessment of maternal health efforts that have been carried out. The International Classification of Diseases (ICD) defines MMR as the ratio of maternal mortality during pregnancy, childbirth and the puerperium that caused by pregnancy, childbirth and the puerperium or its management but not due to other causes such as accidents in every 100,000 live births. MMR is one of the targets of the Sustainable Development Goals (SDGs) where it is expected that the MMR will be less than 70 per 100.000 live births in 2030 (KEMENKES RI, 2018).

Globally, the MMR in 2017 was 211 per 100,000 live births. This rate has decreased by 38% since 2000, namely 342 per 100,000 live births. The average annual rate of reduction (ARR) of MMR globally during 2000 to 2017 was 2.9%. This rate shows that the world's MMR has decreased every year by 2.9%. (WHO *et al.*, 2019). Indonesia is one of the countries with the highest MMR in Southeast Asia. Even though there was a trend of decreasing maternal mortality, from 390 to 305 per 100,000 live births in the 1991-2015 period, it did not succeed in achieving the Millennium Development Goals (MDGs) target in 2015.

Based on data from the health profile of Aceh province in 2019, it is known that the number of maternal deaths reported in 2018 was 141 cases and 101,296 live births, so the ratio of maternal mortality in Aceh is 139 per 100,000 live births. Meanwhile, Aceh Barat regency is one of the regencies with a relatively high maternal mortality rate. The number of maternal deaths in Aceh Barat at 2019 was 8 cases. The number of cases increased significantly from the previous year where there were only 3 cases. Various health efforts have been made by the local government, including equal distribution of village midwives in each village, various efforts to increase the capacity of village midwives, provision of health facilities and infrastructure, and other efforts to support maternal health services. Unfortunately, cases of

maternal mortality are still high and fluctuate every year. The purpose of this study was to describe the frequency, distribution and determinants of maternal mortality in Aceh Barat regency. The data analysis was based on the Health Office track record data of maternal mortality from 2018 to September 2020. The results of this study are expected to be the basis for policy holders and health workers (Midwives) in determining the right policies or interventions to reduce the number of maternal deaths and prevent new cases.

Result

The results concluded that most of the mothers who experienced death were ≥ 35 years old, most of the maternal deaths occurred in pregnancy ≤ 4 , the highest maternal mortality level occurred in Meureubo, 72% of the mothers were death in hospital and most maternal deaths were caused by post-partum hemorrhage.

Discussion

The number of maternal mortality in Aceh Barat regency from January to September 2020 was 5 cases. Most of the mothers who experienced death were 20-35 years old (44%) and >35 years old (44%). These variables have the same proportion in influencing maternal mortality. According to several studies, the age of 20-35 years old is the safest age for mothers to get pregnant and give birth (Lisonkova *et al.*, 2014). However, maternal mortality still occurs even though the mother is in a safe age. The following diagram showed the proportion of maternal age.

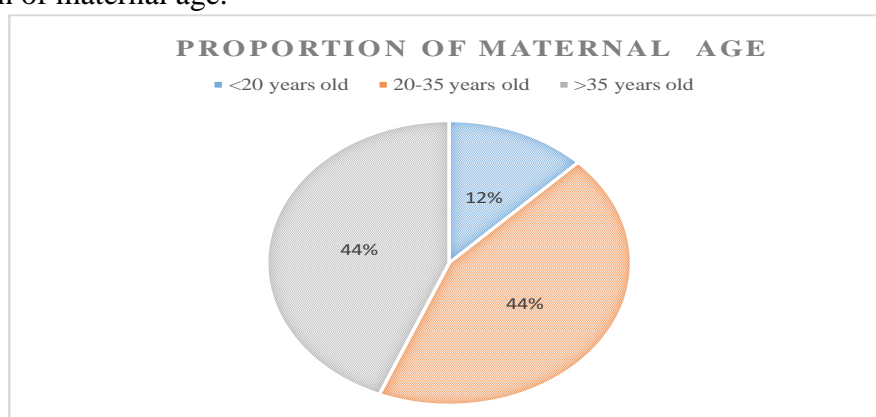


Figure. 1 Proportion Of Maternal Age

The data analysis showed that the highest of maternal mortality cases occur in Johan Pahlawan district. Johan Pahlawan district is the center of Meulaboh City which is the capital of West Aceh regency. It is the most densely populated area compared to other districts. Several research show significantly positive relationships between maternal health indicators and density population measures. The area with dispersed population face higher burdens to achieve maternal service coverage targets (Hanlon *et al.*, 2019). The following graph showed distribution of infant mortality cases in Aceh Barat regency.

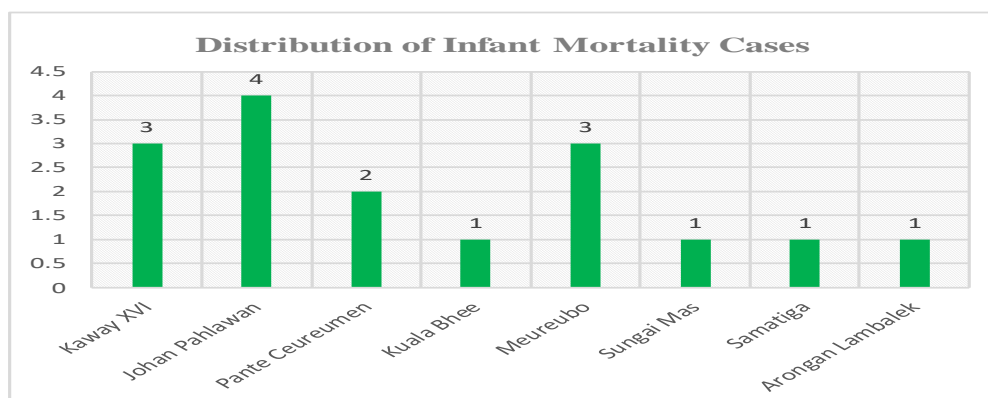


Figure. 2 Distribution of Infant Mortality Cases

The data analysis showed that 31.25% of maternal mortality caused by preeclampsia. It relates to WHO's statement that preeclampsia is one of main causes on maternal morbidity and mortality (Bender & Ryan, 2013). Preeclampsia has a very large negative impact on the health status of both mother and baby. This condition is the main cause of 1 million maternal mortality in developing countries (Bilano *et al.*, 2014). The following diagram showed proportion of determinant of maternal mortality.

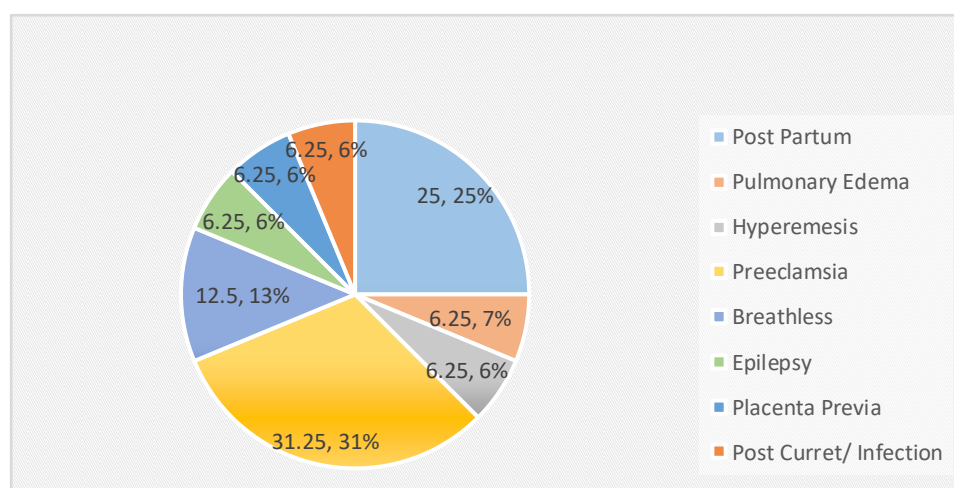


Figure. 3 Proportion of determinant of maternal mortality.

Conclusion

The results of analysis data showed that the number of infant mortality from 2018 to September 2020 was 16 cases. Most of the mothers who experienced death were 20-35 years old (44%) and >35 years old (44%). The area with the highest case of maternal mortality Johan Pahlawan district, most of (31.25%) maternal mortality caused by preeclampsia. The recommendations for the problems are Aceh Barat government needs to improve health education for pregnant women to avoid hypertension during pregnancy that caused preeclampsia, improves maternity services, conducts specific interventions to reduce the number of infant mortality cases in the Johan Pahlawan sub-district.

References

- Bilano, Ota & Ganchimeg *et al.*, 2014. Risk Factors of Pre-Eclampsia/Eclampsia and Its Adverse Outcomes in Low and Middle Income Countries: A WHO Secondary Analysis. *PLOS ONE*. 9(3)
- Bender & Ryan. 2013. Preeclampsia And Global Challenges. *Proceedings in Obstetrics and Gynecology*.
- Cameron, Contreras Suarez & Cornwell K. 2019. Understanding the determinants of maternal mortality: An observational study using the Indonesian Population Census. *PLoS One*. 14(6)
- DINKES Aceh. 2019. *Profil Kesehatan Aceh*. Banda Aceh
- DINKES Aceh Barat. 2019. *Profil Kesehatan Aceh Barat 2019*. Meulaboh
- Hanlon, Michael & Burstein *et al.*, 2012. Exploring The Relationship Between Population Density And Maternal Health Coverage. *BMC health services research*. 12(1): 416
- KEMENKES RI. 2019. *Profil Kesehatan Indonesia tahun 2019*. Jakarta
- Lisonkova, Potts & Muraca GM *et al.*, 2017. Maternal age and severe maternal morbidity: A population-based retrospective cohort study. *PLoS Med*.14(5) :e1002307.
- Say, Lale *et al.*, 2014. Global causes of maternal death: a WHO systematic analysis. *The Lancet Global Health*. 2(6): e323 - e333
- WHO *et al.*, 2019. *Trends in maternal mortality 2000 to 2017 estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division*. Geneva