DOI: http://dx.doi.org/10.33846/hn50806
http://heanoti.com/index.php/hn

RESEARCH ARTICLE
URL of this article: http://heanoti.com/index.php/hn/article/view/hn50806

Infant Mortality Based on Causes, Age, Place and Referral Case High Risk in East Sumba District

Mariana Ngundju Awang[1(CA)], Diyan Maria Kristin[2]
[1(CA)]Midwifery Department, Poltekkes Kemenkes Kupang, Indonesia; ramykaeykenr@email.com (Corresponding Author)
[1(CA)]Midwifery Department, Poltekkes Kemenkes Kupang, Indonesia; diyankristin2004@email.com

ABSTRACT

Maternal mortality can almost certainly also mean death in infants who are conceived or born. Reportedly, 75% of babies born who lost their mothers will die before celebrating their first birthday. East Nusa Tenggara (NTT) is one of the regions with the highest infant / neonatal mortality rate in Indonesia, Infant mortality rate in East Sumba is one of the highest in East Nusa Tenggara (NTT) province and continues to fluctuate in the last five years from 2011 to 2015 and the number is 61 - 99 - 122 - 108 and 99. The research objective was to identify the cause, age, place of death of infants and referral cases in 2011 – 2015. This type of research was descriptive, cross sectional method, the total population of infant mortality cases in 2011 - 2015 was 30 cases. The sample selection used was simple random considering the time and funds as well as access to the respondent's location so that the latest infant mortality data in 2015, for which data exists, parents still remember the incident. Collection using a questionnaire for mothers / fathers / families with midwives in the village and coordinating midwives who handle ANC and case referrals. The data were processed and analyzed descriptively. The cause of infant mortality over the last 5 years in East Sumba district was 66.7% Pneumonia, as many as 46.7 percent of infants died at the age of 1 month. Based on the place of infant mortality, 80 percent of infants died at home because they were not referred and 20 percent died in PHC or Hospital for late referral.

Keywords: infant mortality; risk factors; East Sumba

INTRODUCTION

Background

Infant mortality is also one of the targets set in the Millennium Development Goal 5, which is 2/3 of the total number of infant deaths. Three main factors cause maternal and infant mortality; 1) Medical factors (direct and indirect), 2) Service system factors (antenatal care system, childbirth service system and postpartum and child health service system), and 3) Economic, socio-cultural and community participation factors (lack of identification of problems, delayed decision-making processes, lack of access to health services, gender mainstreaming, and public roles in maternal and child health). Maternal mortality almost certainly also means death in the unborn or born, it is reported that 75% of babies born who lose their mothers will die before celebrating their first birthday. Several studies also prove that losing a mother in the family will result in the abandonment of children's education, especially for girls who will replace the mother's role at home. Maternal mortality in productive age also means the loss of one of the family's economic supports. [(1–3)]

Infant Mortality Rate in NTT Province in 2007 was 57 per 1,000 live births, higher than the national IMR, namely 32 per 1,000 live births, in 2010 there was a decrease to 39 per 1,000 live births, but increased again in 2012 to 45 per 1,000 live births based on the 2012 IDHS, even though nationally the IMR has fallen to 24 / 1,000 live births in 2017, however this figure is still far from the target of decreasing to 12/1000 live births in 2030 according to the SDGs [(4–6)].

IMR in East Sumba District is relatively high based on the annual report of the East Sumba District Health Office for the last five years (2011-2015). The infant mortality rate has continued to fluctuate in the last five years, namely from 2011 - 2015 amounting to 61 - 99 - 122 - 108 - 99 and is one of the highest contributing districts in NTT Province [(4,7)]. The mortality rate for newborns (0-30 days) is no less high, it is even increasing. The average mortality rate for infants aged 0-30 days per year is 90-100 babies per year. In 2013, 122 newborns

died mostly from low birth weight and asphyxia. A year later, 108 babies died from the same cause, in 2015, at least 99 newborns died in East Sumba. [8]

Quality maternal and newborn health services can prevent high mortality rates. In Indonesia, the newborn mortality rate for children whose mothers receive antenatal care and delivery assistance by medical personnel is one-fifth of the mortality rate for children whose mothers do not receive these services. Good postpartum care is very important, because most of the deaths of mothers and newborns occur in the first two days and postpartum services are needed to overcome postpartum complications [9–11].

Purpose

The purpose of this research is to know the cause, age, place of infant death and refer the high risk case in East Sumba District

METHODS

This type of study was descriptive research. This research is longitudinal or all time and some are cross sectional or time slice [12–14]. The research was conducted in June - November 2016 at the Kawangu Health Center, Kambaniru Hospital, Lewa and Umbu Rara Meha Waingapu, East Sumba Regency, East Nusa Tenggara Province. The population in this study were cases of infant mortality with the criteria of pregnant women who performed ANC and recorded in the cohort register in health center. The sample size of infant mortality cases in 2011 - 2015 was 30 cases.

The place used to represent the district because of the highest number of deaths and the hospital is a referral hospital in East Sumba Regency, so all risky cases will be referred there

This research was conducted by tracing the medical records of infant mortality at the Public Health Center and Umbu Rara Meha Waingapu Hospital from 2011 - 2015. Data collection was carried out in two stages. The first stage was to collect respondents, namely mothers / fathers or families of dead babies who can be interviewed using a questionnaire prepared by the researcher accompanied by a midwife who conducts ANC and handles referral cases to hospitals, coordinating midwives and midwives at Umbu Rara Meha Waingapu Hospital. Data collection was carried out twice: the first stage could only collect 15 respondents so that it was continued with the second collection of the next 15 respondents, so that it fulfilled 30 respondents. The data were processed by computer using descriptive analysis

RESULTS

Table 1. Infant mortality by causes in Regency of East Sumba in 2011 – 2015

Cause	Frequency	Percentage
Pneumonia	20	66.7
Diarrhea and GEA	3	10
Fever seizures	5	16.7
Congenital Abnormalities	2	6.7

Table 1 of infant mortality 66.7 percent was Pneumonia, followed by fever and diarrhea/GEA seizures 16.6 and 10 percent. In conclusion, 66.7 percent of infants died of pneumonia due to parents not recognizing the signs and symptoms of pneumonia and the triggering factors such as exposure to cigarette smoke, where on average there are parents/family members in the same house who smoke.

Table 2. Infant mortality by age in Regency of East Sumba in 2011 – 2015

Age of baby (month)	Frequency	Percentage
1	14	46.7
2	5	16.6
3	3	10
4	4	13.3
5	2	6.7
>6	2	6.7

Based on table above 46.7 percent infant mortality occurs at the age of 1 month

Table 3. Infant mortality data by place of death in Regency of East Sumba in 2011 – 2015

Place of death baby	Frequency	Percentage
House	24	80
Public health center	2	6.7
Hospital	4	13.3

Based on where the baby died, 80 percent were at home.

Table 4. Reference data for infant mortality in East Sumba Regency in 2011 -2015

Referral of infant	Frequency	Percentage
Refer late	6	20
Not refer	24	80

Based on a table above 80 percent of infant mortality were not referred

DISCUSSION

One of the factors that greatly affects the birth of a baby is the ability and skills of birth attendants, according to the first message of Making Pregnancy Safer (MPS) that every birth must be assisted by trained health personnel. Another factor is the lack of knowledge and behavior of people who do not recognize danger signs and are late in bringing sick mothers, babies and toddlers to health facilities. The direct causes of infant mortality are Low Birth Weight Infants (LBW) and lack of oxygen (asphyxia). [1,15–17]. The indirect causes of death for mothers and newborns are due to community conditions such as education, socio-economic and cultural conditions. Geographical conditions and conditions of service facilities that are not yet ready contribute to this problem. Some of these things result in condition 3 being late (late decision, late coming to the service place and late getting the right help, this is in accordance with the results of the study that 80 percent of infant deaths in this study were at home due to ignorance of the danger signs in babies so that it was too late to referenced or not even referred [2,10,18].The causes of death for newborns 0-6 days in Indonesia are respiratory problems, Pneumonia. This pneumonia disease is very easy to infect anyone, but because the baby's body's ability is not yet perfect in forming the immune system and antibodies, the baby becomes very vulnerable to pneumonia.This is in line with the results of the study, namely 66.7 percent of the causes of infant mortality were pneumonia as well as to death occurs within 1 month of the baby's age. [5,19,20].

Great attention needs to be given to efforts to save newborns and manage infectious diseases, namely diarrhea and pneumonia which are the highest causes of infant mortality in East Sumba (Table 1). Therefore, more hard work is needed because the IMR is still 45 per 1,000 KH. . So that the IMR Reduction Efforts can be achieved, namely 12/1000 KH according to the SDGs Target in 2030. The Ministry of Health has made various efforts to accelerate the reduction in MMR and IMR, including starting in 2010 launching Health Operational Assistance (BOK) to Puskesmas in districts / cities that are focused on preventive and promotive activities in the MCH program. The indirect causes of death for newborns are due to social conditions such as education, socio-economic and cultural conditions. Geographical conditions and the condition of service facilities that are not ready to contribute to this problem, which results in late condition (late decision, late arrival to service and late getting adequate help). In accordance with the results of the study in Table 3, that 20 percent of babies died in Puskesmas and hospitals this was due to delays, delays in decision-making at the family level which could have been avoided if the mother and family knew the danger signs to the baby and made an immediate decision to refer the baby. One of the breakthrough efforts that are proven to be able to increase the proxy indicator (delivery by health workers) in decreasing the Maternal and Infant Mortality Rate is the Maternity Planning and Complications Prevention Program (P4K). Programs using these “stickers” can increase the active role of the husband (husband Siaga), family and community in planning a safe delivery. This program also improves preparation for complications during pregnancy, including planning for use of postpartum contraception. In addition, the first aid program also encourages pregnant women to have pregnancy, childbirth, health checks and babies born by skilled health personnel including complete tetanus immunization status checks for every pregnant woman [2,21] .

P4K plays a role in achieving one of the targets of the 100-day Maternity Planning program from the Ministry of Health which can be implemented by mothers, husbands and families so that they have knowledge about the danger signs of pregnancy, childbirth, breastfeeding, mother and baby care, immunization schedules and other information where all this information is available. in the MCH Handbook given to pregnant women. The MCH Handbook also functions as a means of monitoring the health development of pregnant women as well as monitoring the growth and development of newborns up to the age of 5 years so that it can prevent infant mortality and can refer to it on time [10,22]. The high infant mortality rate in NTT has prompted the NTT Government to launch the MCH Revolution program, through the NTT Governor Regulation Number 42 of 2009 concerning the MCH Revolution [6,23]. This data is in line with the infant mortality rate in East Sumba Regency which is deep. The last five years have experienced fluctuating ups and downs, from 61 to 122 in 2013 and down again in 2014 -2015 to 99 [8].

Infant Mortality Rate (IMR) is the number of babies who die before reaching the age of 1 year which is expressed in 1,000 live births in the same year. Infant age is a condition prone to pain and death. The highest incidence of infant mortality occurs during the puerperium and the first days of infant life which continues to occur in this country with the most common causes of low birth weight and premature babies, asphyxia (spontaneous respiratory failure) and infections. This is in line with the results of the study in Table 2 that 46.7 percent of infants

died at the age of 0-30 days or at the age of 1 month or two thirds of infant deaths occurred in the neonatal period (the first 28 days of life) with the highest cause of lung infection. Pneumonia. Therefore, to reduce the newborn mortality rate, new efforts and innovations are needed, in extraordinary ways so that the goal of the SDGs 2030, namely IMR to 12 per 100,000 live births can be achieved through various efforts that have been made to reduce maternal mortality and newborns. , babies and toddlers. Among others, through the placement of midwives in villages, empowering families and communities by using maternal and child health books (KIA books) and the Maternity Complications Planning and Prevention Program (P4K), as well as providing health facilities for Basic Obstetric Neonatal Services. Emergency (PONED) in Puskesmas and Comprehensive Obstetric Neonatal Services (PONEK) in hospitals [11,24,25].The Jampersal Program (Childbirth Insurance), which was launched in 2011. is intended for all pregnant, childbirth and postpartum mothers as well as newborns who do not have health insurance to make it easier for people to reach health services and patterns of seeking health assistance in terms of ease of transportation. and community empowerment, in order to get delivery services by health workers and babies born until the neonatal period in health facilities. The program, which carries the slogan Happy Mother of a Healthy Born Baby, is expected to make a major contribution in the effort to accelerate the reduction in maternal and newborn mortality rates so that there are no more cases of infant mortality at home that are not referred and are late in referring as the research results in table 3 and 4 [26–28].

Regional governments, both at the provincial and district / city levels, are also expected to have a commitment to continue strengthening the health system, budgeting substantial funds to support increased access and quality of basic and referral health services. The basic health services provided through the puskesmas must be balanced with the availability of affordable and quality Regional Referral Hospitals and Provincial Referral Hospitals. In implementing efforts to reduce infant mortality, including through strengthening human health resources, especially midwives, so that they are able to carry out preventive and promotional tasks for mothers from pregnancy, childbirth and postpartum in order to be able to detect danger signs early and make timely referrals which in the end can prevent infant mortality [29–32].

CONCLUSION

The study of infant mortality in 2011 – 2015 in East Sumba Regency was mostly caused by pneumonia cases where the average age of death was 1 month and most deaths at home were caused by parents' ignorance about danger signs in infants and deaths occurred in hospitals and health centers due to referral delay.

REFERENCES

1. Badan Perencana Pembangunan Daerah Aceh. Kajian Faktor Resiko Kematian Ibu dan Bayi. Lap Penelit Kaji Fakt Resiko Kematian Ibu dan Bayi di Provinsi Banda Aceh. 2016;1–30.
2. Wulandari DA, Utomo IH. Responsivitas Dinas Kesehatan Karanganyar Dalam Upaya Menurunkan Angka Kematian Ibu Dan Bayi. Responsivitas Dinas Kesehat Kabupaten Karanganyar Dalam Upaya Menurunkan Angka Kematian Ibu Dan Bayi. 2017;1(3):40–9.
3. Abdiana A, Jayanti KD, Wasis E, Nurkhalim RF, et al. Determinan Kematian Bayi di Kota Payakumbuh. Kesmas Natl Public Heal J. 2017;5(1):1–7.
4. Dinkes NTT. NTT bangkit NTT sejahtera. Profil Kesehat Provinsi Nusa Tenggara Timur. Kupang: Dinkes NTT; 2018.
5. Kemenkes RI. Profil Kesehatan Indonesia 2018. Jakarta: Kemenkes RI; 2018.
6. Nassa M. Analisis Program Revolusi Kesehatan Ibu dan Anak dan Dampaknya Terhadap Penurunan Angka Kematian Ibu dan Bayi. 2018;14(2016):2016.
7. Labola YA. Analisis Kematian Ibu di Kabupaten Sumba Tengah, Nusa Tenggara Timur. 2018;(January).
8. Dinas Kesehatan Kabupaten Sumba Timur. Data kasus kematian ibu dan bayi Sumba Timur 2013 -2015. Waingapu: Dinas Kesehatan Kabupaten Sumba Timur; 2015.
9. Nuraisya W. Deteksi Risiko Tinggi Kehamilan Pada Pelayanan ANC Terpadu di Puskesmas Bendo Kabupaten Kediri. J Kesehat Andalas. 2018;7(2):240.
10. Kementerian Kesehatan RI. Pelayanan Ibu di Faskes Dasar & Rujukan. Jakarta: Kemenkes RI; 2013.
11. Diana S, Wahyuni CU, Prasetyo B. Maternal complications and risk factors for mortality. J Public Health Res. 2020;9(2):195–8.
12. Notoatmodjo S. Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta; 2018. 243 p.
13. Arikunto S. Prosedur Penelitian. Jakarta: Rineka Cipta; 2019.
14. Sugiyono. Buku Metode Penelitian Kuantitatif Kualitatif dan R&D. Bandung: Alfabeta; 2019.
15. Boghossian NS, Geraci M, Edwards EM, Horbar JD. Morbidity and Mortality in Small for Gestational Age Infants at 22 to 29 Weeks' Gestation. Pediatrics. 2018;141(2):20172533.
16. Burstein R, Henry NJ, Collison ML, Marczak LB, Sligar A, Watson S, et al. Mapping 123 million neonatal, infant and child deaths between 2000 and 2017. Nature. 2019 Oct 17;574(7778):353–8.
17. Agha S, Williams E. Does the antenatal care visit represent a missed opportunity for increasing

contraceptive use in Pakistan? An analysis of household survey data from Sindh province. Health Policy Plan. 2016;31(3).
18. Willa WR dan, Mading M. Determinan Kesehatan Ibu dan Anak di Kabupaten Manggarai Barat Provinsi Nusa Tenggara Timur. Bul Penelit Sist Kesehat. 2014;17(3):249–56.
19. Bhutta ZA, Das JK, Bahl R, Lawn JE, Salam RA, Paul VK, et al. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? Vol. 384, The Lancet. Elsevier B.V.; 2014. p. 347–70.
20. Fadel SA, Rasaily R, Awasthi S, Begum R, Black RE, Gelband H, et al. Changes in cause-specific neonatal and 1–59-month child mortality in India from 2000 to 2015: a nationally representative survey. Lancet. 2017 Oct 28;390(10106):1972–80.
21. Yusriani Y, Mukharrim MS, Ahri RA. Pelaksanaan Program Perencanaan Persalinan dan Pencegahan Komplikasi (P4K) Melalui Peran Keluarga. J Ilm Kesehat. 2019;18(2):49–58.
22. Awang MN. Study of Maternal Mortality based on ANC Category , High Risk Category and High Risk Case Referral in East Sumba District 2011-2015. J Info. 2017;15(1):110–25.
23. Abdullah A, Hort K, Butu Y, Simpson L. Faktor Risiko Kematian Neonatal Di Provinsi Nusa Tenggara Timur: a Matched Case-Control Study. 2015.
24. Afdal M, Rismayanti, Wahiduddin. Faktor Risiko Perencanaan Persalinan terhadap Kejadian Komplikasi Persalinan di Kabupaten Pinrang Tahun 2012. Makassar: UNHAS; 2012.
25. Goodkind D, Lollock L, Choi Y, McDevitt T, West L. The demographic impact and development benefits of meeting demand for family planning with modern contraceptive methods. Glob Health Action. 2018;11(1).
26. Lawn JE, Blencowe H, Oza S, You D, Lee ACC, Waiswa P, et al. Every newborn: Progress, priorities, and potential beyond survival. The Lancet. 2014;384:189–205.
27. Awasthi A, Pandey CM, Chauhan RK, Singh U. Disparity in maternal, newborn and child health services in high focus states in India: A district-level cross-sectional analysis. BMJ Open. 2016 Aug 1;6(8).
28. Oppong SA, Asare E V., Olayemi E, Boafor T, Dei-Adomakoh Y, Swarry-Deen A, et al. Multidisciplinary care results in similar maternal and perinatal mortality rates for women with and without SCD in a low-resource setting. Am J Hematol. 2019;94(2):223–30.
29. Progo KK. Manual rujukan kehamilan, persalinan, dan Kelompok Kerja Pelayanan Rujukan Ibu dan Anak. 2012;
30. Biswas A, Anderson R, Doraiswamy S, Abdullah ASM, Purno N, Rahman F, et al. Timely referral saves the lives of mothers and newborns: Midwifery led continuum of care in marginalized teagarden communities - A qualitative case study in Bangladesh. F1000Research. 2018;7(0).
31. Damayanti NA, Setijanto D, Hargono A, Wulandari RD, Santi MW, Tjahjono B, et al. Integrated information system for early detection of maternal risk factors based on continuum of care approach of mother and toddler cohorts. Healthc Inform Res. 2019;25(3):153–60.
32. Yuliwati N, Sutiawan R. The early detection system of risk factors on pregnancy, labour, and puerperium women (a case study on midwife private practice) in central lampung district in 2018. Indian J Public Heal Res Dev. 2019;10(12):1488–93.