



Factors Cause of Maternal Death in Timor-Leste



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Abstract

Maternal mortality was an indicator of basic health services for mothers or women of reproductive age of a country and was one of the eight Millennium Development Goals (MDGs). Factors that affect maternal mortality, among others: medical factors, non-medical factors, and health care system factors. Meanwhile, WHO (2010) reported that the cause of maternal mortality in the world is 25% of bleeding, 15% of infection/sepsis, 12% eclampsia, 13% of abortions are unsafe, 8% obstructed and ectopic pregnancy, 8% embolisms and other related issues with anesthetic problems. WHO (2010) has determined that the maternal mortality rate (MMR) in 40 countries ≥ 300 / 100,000 live births including República Democrática de Timor-Leste at 557 / 100,000 live births. Objective: This study aimed to determine the relationship between the variables of age, parity, spacing pregnancies, health behavior, and health status of mothers with maternal deaths. Methods: The study design was a cross-sectional study with a sample of 298 pregnant women in 13 districts throughout Timor-Leste. Results: Maternal deaths are caused by independent variables simultaneously and the remaining 28.0% were prescribed other factors. Low maternal health behaviors that lead to maternal death by 40.348 times higher compared with mothers who have good health behaviors. The health status of low maternal causes of maternal mortality by 23.340 times higher than mothers who have a good health status. Birth spacing < two years caused the death of the mother of 16.715 times higher than women with birth spacing > 2 years. Maternal age and parity variables showed no significant effect. Conclusion: There was a significant relationship between behavioral maternal health, maternal health, birth spacing with maternal mortality while age and parity are not related.

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1. Introduction

Maternal mortality is an indicator of basic health services for mothers or women of reproductive age of a country and is one of the eight Millennium Development Goals (MDGs). Two targets MDG 5 is to reduce maternal mortality by 75% between 1990 and 2015 (WHO, UNICEF, UNDP, 2010). Therefore, it was agreed that after the 2015 MDGs continued with Sustainable Development Goals (SDGs) with 17 focus areas where objectives three is about healthy lives for all at all ages (WHO, 2014). WHO set a maternal mortality MMR in 40 countries with the number ≥ 300 / 100,000 live births. These countries include Chad 1.100 / 100.000 and Somalia 1000 / 100,000 live births with the highest mortality rate. Followed by eight other countries in sequence, namely Sierra Leone 890 / 100,000, the Central African Republic 890 / 100,000, Burundi 800 / 100,000, Guinea - Bissau 790 / 100,000, Liberia 770 / 100,000, Sudan 730 / 100,000, Cameroon 690 / 100,000 and Nigeria 630 / 100.000 (WHO, 2010). Only four countries outside the region sub - Saharan Africa has a high mortality rate among others República Democrática de Timor-Leste 557 / 100,000, Lao People's Democratic Republic 470 / 100,000, Afghanistan 460 / 100,000, and Haiti 350 / 100.000 (WHO, 2010). Factors influence of maternal mortality among others: the medical, non-medical factors and health care system factors.

Medical factors influenced by the status of reproductive and maternal health, among others: (age, parity/number of pregnancies, pregnancy spacing and maternal disease anemia and malnutrition). Non-medical factors related to maternal health behaviors, the status of the mother in the family, socio-economic status and culture that hinder efforts to reduce morbidity and mortality (Notoatmodjo, 2014). The factors healthcare system is a network of interdisciplinary services, comprehensive, and complex, consisting of activity diagnosis, treatments, rehabilitation, health care and prevention for people in all age groups and in a different situation (Dubois & Miley, 2005). Causes of maternal mortality in Timor-Leste in the air successively is as follows: 24% of bleeding 20% of indirect causes such as infections, malaria, hepatitis, human immunodeficiency virus / acquired immunodeficiency, 15% of puerperal sepsis, 13% of unsafe abortion, 12% of eclampsia, 8% obstructed and 8% other cause not identified (Suzanne, 2009). Meanwhile, WHO (2010) reported that the cause of MMR in the world is 25% of bleeding, 15% of infection/sepsis, eclampsia 12%, 13% of unsafe abortion, 8% obstructed and ectopic pregnancy, 8% embolism and other matters related to the problem of anesthesia. Various efforts have been made by the government of Timor-Leste to reduce MMR. In general, these efforts form of Making Pregnancy Safer program which is an important component of the Safe Motherhood Initiative by WHO in 1987. The framework of this program is designed to ensure that all pregnancies in women want to grow safely through pregnancy and childbirth, and babies born alive and healthy (WHO, 2010). But the results are not satisfactory, it is suspected that it has never been done an in-depth study and specifically by the government of Timor-Leste.

To support the government program above health education for pregnant women have an important role to change the behavior of pregnant women in health care utilization properly in order to obtain optimal health services according to the needs of pregnancy. Model behavior changes according to Lawrence Green that healthy individuals or communities affected by two main factors, namely behavioral factors and factors outside the behavioral (non-behavioral). Furthermore, these behavioral factors specified three groups of factors: predisposing factors, enabling factors, and reinforcing factors. Predisposing factors include knowledge, attitudes, beliefs, traditions, social norms, and other elements contained within the individual and society. Enabling factors is the availability of health-care facilities and services to achieve, while the reinforcing factors are the attitude and behavior of health workers. According to Green, health education has an important role in changing and strengthening the three groups of factors that in line with the objectives of the activity giving rise to the positive behavior of society towards such programs and to health in general. For example, Green models can be used to analyze the immunization program in Indonesia. The government provides a means of medication and immunization workers in every village (contributing factors); the doctors, nurses and other immunization provide counseling (health education) and approached the mother whose children require immunizations (motivating factor), so that mothers become aware of the importance of preventing disease through immunization (predisposing factors). It's all geared to achieve positive behavior that of bringing children to the health post, health center or private doctor, for immunizations. But besides the behavior, there are also nonbehavioral aspects that may affect the achievement of the health of the individual/society, such as the difficulty of reaching health-care facilities, the high cost of transport and treatment, and other (Solita, 1993).

In República Democrática de Timor-Leste, there are still people who feel comfortable using power / TBAs in aid delivery especially in remote areas due to some conditions (UNDP, 2003). Basically, TBAs received by the community to help labor in a remote area on the trust of local communities or the work that has been handed down from ancestors or family, and usually \pm 40-year-old (Prawirohardjo, 2005). To succor the birth of the baby, bathing,

ritual stomping grounds, and other southwestern (Koenjaraningrat, 1992). Ceremonial ceremonies, better known as the village midwife science is very limited and not growing as obtained down (Meilani, 2009). In Africa, traditional healers believed clever in curing diseases and experts in detecting witches are regarded as the party who makes a healthy community into ill (Daniel Ofion, 1999). Selection of TBAs to help labor in RDTL caused by various factors including knowledge about the health of pregnant women, trust pregnant women, geographical spread of health facilities that have not been evenly distributed, the availability of medicines in health facilities in remote areas as well as the complete lack of liveliness behavior and lack of health workers in health facilities in remote areas. In addition to the factors mentioned above where the power / TBAs very important for pregnant women because they are always accompanied by power or TBAs for twenty-four hours for delivery in the presence of health workers appeal to assist pregnant women in remote areas or in the urban areas (WHO, 2010; WHO, 2014). Nevertheless, the government Timor-Leste remains committed to reducing the MMR to 252 / 100,000 live births in 2015 from an initial estimate of 660 in 2000 and 557 / 100,000. It is realized through health management strategy in a reproductive health program, a national family planning policy, training for health care providers that are safe, clean delivery and emergency obstetric care. Antenatal care in Timor-Leste in 2003 was 61% and increased to 86% in 2010 of which 80% by midwives or nurses, 4% of doctors, and 2% by assistant nurses. Meanwhile, parturition which was not helped by health workers is 70% and only 29.9% of confinement helped health workers, midwives 26.4%, 2.9%, and 0.6 doctors assistant nurses%. While 77.8% of the health facilities were not chosen by pregnant women for childbirth, only 21.4% of public health facilities and 0.7% private health facilities selected (WHO, 2010). From the above, it is necessary to do research to determine the relationship between age, parity, birth spacing, maternal health behaviors and health status of mothers with maternal mortality in Timor-Leste.

2. Materials and Methods

The study research design cross-sectional study to study the dynamics of the correlation between risk factors with effects, with the approach of observation or data collection at once at some point or points of time approach (Notoatmodjo, 2005). In this study involving 298 pregnant women and families living close to maternal and died throughout Timor-Leste.

3. Results and Discussions

The results of the analysis of data obtained from this study as shown in the following table.

Table 1
Hosmer and Lemeshow test

Step	Chi-square	Df	Sig.
1	.818	7	.997

Table 1 shows the results of the analysis Hosmer and Lemeshow test with $p = 0.997$ ($p > 0.05$) means that the data of independent variables (age, parity, birth spacing, the behavior of maternal health and maternal health status) with the dependent variable (maternal mortality) Fit conjunction with regression.

Table 2
Results Analysis the amount of influence (Nagelkerke R Square)

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	180.989 ^a	.539	.720

a. Estimation terminated at iteration number 20 because maximum iterations have been reached.
The final solution cannot be found.

Table 2 shows the Nagelkerke value of 0.720, which means about 72.0% of maternal deaths are caused by independent variable simultaneously and the remaining 28.0% were prescribed other factors.

Table 3
Regression analysis method with entering

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Maternal Behavior	3.698	.492	56.468	1	.000	40.348	15.381	105.841
Mother's Health	3.150	.533	34.927	1	.000	23.340	8.211	66.346
Mothers age	21.031	8487.095	.000	1	.998	1.361E9	.000	.
Parity	.630	.409	2.376	1	.123	1.878	.843	4.186
Birth spacing	2.816	.523	28.997	1	.000	16.715	5.997	46.590
Constant	-25.789	8487.095	.000	1	.998	.000		

Table 3 shows the mother's health behaviors Exp (B) = 40.348, $p = 0.000$, which means that mothers with low health behavior caused the death of the mother of 40.348 times higher compared with mothers who have good health behaviors. Maternal health, Exp (B) 23.340, $p = 0.000$, which means that women with low health status causes of maternal mortality by 23.340 times higher than mothers who have a good health status. Birth spacing Exp (B) = 16.715 with $p=0.000$, which means that women with birth spacing < two years caused the death of the mother of 16.715 times higher than women with birth spacing > 2 years. Maternal age and parity variables showed no significant effect.

Low maternal health behaviors that lead to maternal death by 40.348 times higher compared with mothers who have good health behaviors. According to (Skinner, 1938) the behavior of the mother's health (health behavior) is a person's response to stimuli or objects related to the health-illness, disease, and the factors that influence the health-illness (health) such as the environment, food, and health services (Notoatmodjo, 2003). The results are consistent with research conducted Titin in 2015 in Pekanbaru Indonesia regarding the behavior of pregnant women in maintaining a healthy pregnancy reported that 80.77% pregnancy exercise habits, keeping your diet improve the health of babies, and the willingness of 84.62% of pregnant women in maintaining pregnancy health are factors that strongly influenced the health of pregnant women in maintaining pregnancy.17 Low health status causes of maternal mortality by 23.340 times higher than mothers who have a good health status. The health status of mothers that affect the incidence of maternal mortality includes nutritional status, anemia, maternal illness, and a history of complications in pregnancy and childbirth before. The nutritional status of pregnant women can be seen from the results of measurements of the circumference of the upper arm. Upper arm circumference measurements aimed at detecting whether pregnant women are categorized chronic lack of energy or not. Mothers with poor nutritional status at risk for the occurrence of bleeding and infection in the postpartum period. Anemia is an important issue that must be considered during pregnancy. A pregnant woman is said to be suffering from anemia when hemoglobin (Hb) less

of 11g / dl. Various causes anemia interrelated includes inadequate intake, malaria, parasites, iron deficiency, folic acid, and vitamin A. Birth spacing < two years caused the death of the mother of 16.715 times higher than women with birth spacing > 2 years. Spacing pregnancies too close to or less than two years at risk of maternal death and classified in groups of higher risk for postpartum hemorrhage. Distance pregnancy suggested in general is two years in order to allow a woman's body can recover from the extra needs during pregnancy and lactation. My research was not in accordance with Faradilla et al research conducted in Riau Indonesia in 2015 reported that there was no significant relationship between birth spacing with the occurrence of low birth weight in Riau Province in 2014 with a value of $p = 0.932$, $p > 0.05$. This could occur because of the difference in the quality of human resources and the quality of services between the two countries. In this study, age was not significantly to maternal mortality it is not according to the research conducted Faradilla et al statistical test p -value = 0.001 and RP = 4.947, CI = 1.98 to

12.32 means that there is a significant association between maternal age risk the incidence of birth weight rendah.18 in this study the risk factors parity no meaningful relationship to maternal mortality is consistent with the study conducted in 2016 in Solo Primary Mahesa report the results of bivariate analysis using Chi-Square test showed no significant relationship between parity with maternal mortality ($p = 0.068$) .19

4. Conclusion

Factors causes of maternal death are maternal health behaviors, the health status of mothers and spacing, while the mother's age and parity did not show a significant association. Low maternal health behaviors that lead to maternal death by 40.348 times higher compared with mothers who have good health behaviors. Low health status causes of maternal mortality by 23.340 times higher than mothers who have a good health status. Birth spacing < two years caused the death of the mother of 16.715 times higher than women with birth spacing > 2 years. Simultaneous maternal mortality by 72.0% due to the independent variable is the behavior of the mother's health, maternal health, and birth spacing, and the remaining 28.0% were prescribed other factors.

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Statement of authorship

The author(s) have a responsibility for the conception and design of the study. The author(s) have approved the final article.





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