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Determinant Implementation for Living Baby and Children Health Program in the Makassar City

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ABSTRACT

Background: This study studied infant mortality rate in South Sulawesi Province, is still relatively high and has not met the MDGs targets. Based on data of SDKI 2012, Infant mortality rate in South Sulawesi in 2011 amounted to 25/1000 live births. This figure still does not meet the target of the national medium-term development plan until 2014 of 24/1000 live births. Analyzing the influence of social factors; economics and implementation of maternal health programs and Children against the survival of Toddlers in Makassar City.

Materials and Methods: In this research, research design used is *combined method* between quantitative and qualitative approaches. Researchers can take a quantitative approach against the sample of the population, followed by observations and interviews with limited informants.

Results: Demographic characteristics that affect infant mortality are education and parental behavior. And components of the implementation of maternal and child health programs on the sustainability of children under five years of age in Makassar that have influence that is communication, bureaucratic structure, and disposition.

Keywords: *Living baby, children health, survival toddlers*

INTRODUCTION

One indicator of the success of development in the field of health is the decrease in infant mortality rate and children under the age of five¹. Infant mortality rate in South Sulawesi Province (Sulsel) still relatively high and has not met the MDGs targets. Based on data of SDKI 2012, Infant mortality rate in South Sulawesi in 2011 amounted to 25/1000 live births.² This figure still does not meet the target of the national medium-term development plan until 2014 of 24/1000 live births.³

Makassar as the capital of South Sulawesi province is the largest contributor to infant mortality compared to other regions or districts in South Sulawesi. Infant mortality rate in Makassar city in 2013 amounted to 6.71/1000 live births, with a total of 165 deaths from 24,576 live births.⁴

Tri Arifah Ashani and Abdur Rofi⁵ conducted research on the cause of high infant mortality with the title “*Infant Mortality According to Demographic and Socio-Economic Characteristics of Households in West*

Java Province (Data Analysis Sdki 2007)”. The results of this study explain that the demographic characteristics that affect the infant mortality is the age of the mother, and the age of first marriage, while that does not affect the infant mortality is the number of child births, maternal education, and mother activities and who have the strongest connection is the age of the mother.

While our research is to analyze the influence of socio-economic factors to be studied and need more attention because infant mortality rate in Makassar is still considered high enough.

MATERIALS AND METHOD

The research method used is a quantitative research method. Quantitative research is a type of influence test, a research conducted to examine the effect of a research phenomenon in terms of the presence of variables at or after the occurrence of phenomena.

In this study to see the effect between two variables using chi square test and to test how much influence

between several variables together with using multiple logistic regression analysis test. Then, data from some populations or samples is collected directly from the research object. This data collection aims to determine the responses or opinions of some populations of the object under study. This quantitative research is also included in the type of survey research, ie research conducted on large or small populations, but the data studied is data from samples taken from the population. The hypothesis of this study is that socio-economic characteristics are associated with infant mortality,⁶ because the better the quality of socioeconomic the infant mortality rate is getting smaller. And the implementation of maternal and child health programs against the survival of infants has to do with the infant mortality rate, because the better the service then the infant mortality rate is getting smaller.⁷

RESULTS AND DISCUSSION

Influence the characteristics of mother to the survival of infants in the city of Makassar: Research respondents are the object of research given questionnaire where the qualification of this object is determined based on domicile in Makassar City, have children under five and

have access to health service of mother and child. Based on the research result of respondent proportion based on mother age is described in following table.

Table 1: Distribution of Respondent Characteristics Based on Proportion of Age in Makassar City

Mother's Age	n	%
<20 Year	84	21.7
20-30 Year	267	69.0
>30 Year	36	9.3
Total	387	100.0

Based on table 1, the proportion of respondent's age varies where the lowest age is mothers who have above the age of 30 years as much as 9.3%, while the highest is the mother who has age between 20 to 30 years as much as 69.0%.

From the bivariate analysis, the influence of education on the survival of children under five shows the level of maternal education affecting the survival of children under five in this case a mother whose education level enough then will determine the care and attention to the child.

Table 2: Analysis of Maternal Education, Mother Behavior, Economic Sources on Infant Mortality in Makassar City 2017 and & Analysis of Environmental Condition Modeling on Death Infant Toddler in Makassar City 2017

Education Mother	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	9	11,5	69	88,5	78	100	0,041*
Good	16	5,2	293	94,8	309	100	
Total	25	6,5	362	93,5	387	100	
Mother Behavior	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	10	11,9	74	88,1	84	100	0,022*
Good	15	5	288	95,0	303	100	
Total	25	6,5	362	93,5	387	100	
Economy sources	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	0	0	49	100	49	100	0,049*
Good	25	7,4	313	92,6	338	100	
Total	25	6,5	362	93,5	387	100	

Contd...

Environmental conditions	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	10	12,5	70	87,5	80	100	0,014*
Good	15	4,9	292	95,1	307	100	
Total	25	6,5	362	93,5	387	100	

Table 2 shows the Proportion of Maternal Education on infant mortality that is 11.5% infant mortality with poor mother education level whereas there are 5.2% infant mortality with good mother education level. Pursuant to result of statistical test by using Chi Square test obtained value p Value = 0,041 so it can be concluded that there is influence of mother education to infant mortality incidence in Makassar City Year 2017.

Parents' education factors, especially mothers, have an effect on their ability to receive outside information, especially on how to care for good children, how to maintain their children's health, education. Mothers with good education are considered to have knowledge of the right menu selection for their children and in determining the priority scale of spending their money⁸.

Based on table 2. Proportion of Mother Behavior to infant mortality is 11,9% infant mortality with bad mother behavior while there is 5% infant mortality with good mother behavior level. Pursuant to result of statistical test by using Chi Square test obtained value p Value = 0,022 so it can be concluded that there is influence of mother behavior to infant mortality event in Makassar Year 2017.

The health behavior of pregnant women has to do with the infant mortality rate, because the greater the level of mother's awareness of health behavior during pregnancy and childbirth, the infant mortality rate is getting smaller⁹.

Based on the table 2. The proportion of economic resources to infant mortality is 0% infant mortality with

bad economic source whereas there are 7.4% infant mortality with good economic source. Pursuant to result of statistical test by using Chi Square test obtained value p Value = 0,049 so it can be concluded that there is influence of economic source to infant mortality incidence in Makassar.

Working mothers and low incomes will reduce both the nutritional state of balitanya because the working mother will not have much free time to take care of her toddler and the low purchasing power of food due to low income¹⁰.

Maternal economic activities will affect the nutritional status of under-five children who are not good if the mother is low income and if the mother is high income then the nutritional status of children can be good depending on the pattern of maternal food intake to balitanya¹¹.

Based on table 2. The proportion of environmental conditions for infant mortality is 12.5% infant mortality with poor environmental condition whereas there are 4.9% infant mortality with good environmental condition. Pursuant to result of statistical test by using Chi Square test obtained value p Value = 0,014 so it can be concluded that there is influence of environmental condition to infant mortality incidence in Makassar.

Environmental contamination: air, water, food, fingers, skin, soil, inanimate objects, insect vectors and environmental smokers. The environment is very influential on the spread of a disease that can result in the existence of a toddler mortality¹².

Influence component implementation of maternal and child health program to the survival of under fives in Makassar city

Table 3: Analysis of Influence Resource, Communication Modeling, Bureaucratic Structure on Infant Mortality in Makassar City 2017

Resource	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	9	13,0	60	87,0	65	100	0,014*
Good	16	5,0	302	95,0	318	100	
Total	25	6.5	362	93.5	387	100	

Contd...

Communication	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	13	9,9	118	90,1	131	100	0,047*
Good	12	4,7	244	95,3	256	100	
Total	25	6,5	362	93,5	387	100	
Bureaucratic Structure	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	11	12,5	77	87,5	88	100	0,009*
Good	14	4,7	285	95,3	299	100	
Total	25	6,5	362	93,5	387	100	
Disposition	Infant and child mortality under 5 years				Total		P Value
	Yes		No				
	n	%	n	%	n	%	
Bad	9	12,3	64	87,7	73	100	0,024*
Good	16	5,1	298	94,9	314	100	
Total	25	6,5	362	93,5	387	100	

RESOURCES

Based on the table 3. The proportion of resources to infant mortality is 13.0% infant mortality with bad resources while there is 5.0% infant mortality with good resources. Pursuant to result of statistical test by using Chi Square test obtained p value = 0,014 <0,05 so it can be concluded that there is influence of resources to infant mortality incidence in Makassar Year 2017.

Communication: It found also that on table 3, the proportion of health personnel communication to infant mortality is 9.9% infant mortality with poor communication of health personnel while there is 4.7% infant mortality with good health personnel communication. Based on the results of statistical tests using Chi Square test obtained p value = 0,047 <0,05 so it can be concluded that there is influence of health personnel communication on infant mortality incidence in Makassar Year 2017.

a. Bureaucratic Structure: Based on table 3 Proportion of bureaucratic structure to infant mortality is 12.5% infant mortality with bad bureaucracy structure while there is 4.7% infant mortality with good bureaucracy structure. Based on the results of statistical tests using Chi Square test obtained value p Value = 0.009 <0.05 so it can be concluded that there is influence of bureaucratic structure to the incidence of infant mortality in the city of Makassar.

b. Disposition: Based on the table 3. The proportion of disposition to infant mortality is 12.3% infant mortality with poor disposition while there is 5.1% infant mortality with good disposition. Based on the results of statistical tests using Chi Square test obtained p value = 0,024 <0,05 so it can be concluded that there is influence of disposition on infant mortality incidence in Makassar Year 2017

Table 4: Analysis of the Most Influential Factors on Infant Mortality in Makassar City 2017

Variable	B	Sig.	Exp(B)	95% C.I. for Exp (B)	
				Lower	Upper
Behavior	1.000	.074	2.718	.908	8.140
Resource	1.422	.013	4.144	1.343	12.788
Disease Control	2.705	.000	14.949	4.714	47.403

Contd...

Child Health service	1.687	.003	5.404	1.806	16.167
Environmental conditions	1.192	.038	3.294	1.071	10.129
Wound Infection	2.262	.000	9.604	3.157	29.218
Bureaucratic Structure	1.249	.023	3.486	1.185	10.249
Nutrition Consumption	1.411	.009	4.100	1.429	11.764
Constant	-18.923	.000	.000		

Table 4 describes further variables in multivariate analysis are 7 variables such as behavior, resources, disease control, child health service, environmental condition, infectious wound, bureaucracy structure and nutrient consumption. The most influential variable is controlling the disease with significant value 47.403 and wound infection with the value 29.218.

Value of the two variables above is not stand alone so that the high variable value that causes infant mortality becomes high. Factors that are so influential that causing the two high variables of educational factors and behavior of parents.

Based on the results of research on the proportion of Mother's Education on infant mortality is as much as 11.5% infant mortality with poor education level of mother while there is 5.2% infant mortality toddler with good mother education level. Parents who have a good knowledge in caring for babies in this case is to have a good knowledge about the diseases that often affects infants and toddlers, certainly can prevent and stop the infant and under-five mortality factor.

While the proportion of Mother Behavior on infant mortality is as much as 11,9% infant mortality with bad behavior of mother while there is 5% infant mortality of children under five with good mother behavior level. Bad behavior of parents such as smoking, unhealthy living behavior at home in this case the cleanliness of food and beverages as well as the home and family environment. Infant mortality can be prevented and stopped by improving parental behavior and healthy life^{13,14}.

CONCLUSION

1. Demographic characteristics that affect infant mortality are education and parental behavior.
2. Components of the implementation of maternal and child health programs on the sustainability of children under five years of age in Makassar

that have influence that is communication, bureaucratic structure, and disposition.

3. Hypothesis proved that socio-economic characteristics associated with infant mortality, because the better the quality of socioeconomic in this case is the education and behavior of parents, the infant mortality is getting smaller. And the implementation of maternal and child health programs on the survival of infants has to do with the infant mortality rate, because the better the service then the infant mortality rate is getting smaller.

Conflict Interest: During the study, no problems were found to cause conflict in patients at the time blood sampling and placental tissue.

Ethical Clearance: Taken from Medical Faculty committee of University, Makassar

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