

# Influence of Conditions on Early Warning in Lowering Levels of Infant Mortality and Health Disorders

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## Abstract

The process of the development of the world of digital technology has affected many areas. One of the central areas experience penetration of digitization technology is in the area of health. One of the influences that add to the health field is medium with a large number of emerging health applications that can be easily accessed via a smartphone or tablet device. For example, in developed countries currently process health pemeriksaan the ear or hearing children have can be done using your smartphone. Through this tool the doctor can diagnose the infection and prepare the proper treatment to patients. Growing number of mobile applications in the health field will certainly ease the course of patient care. There are currently a lot of digital health applications. For that we researchers designed a program shaped application that can be run over the web and sms gateway, to monitor the health conditions of babies from a variety of disorders. The information disseminated through the web and sms gateway can be accessed easily by the mothers who are nurturing her baby, so that a mother will get the right information on how to care for a baby with healthy and avoid distractions endanger the health of infants. this application may be applied in health centers, posyandu or hospital

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## 1. Introduction

Indonesia is experiencing a number of such rapid population growth. Based on national data BPS year 2015, the percentage of the population of Indonesia are seen from the age composition of the population of predominantly young population with age. Nearly 46.7 percent of the total population in the country, dominated by the age of teenagers, children and baby with under two years of age. To preserve the health of young age population growth especially infants under the age of two years, the Government has encouraged the immunisation program aims to provide health coverage on a growing flower child infant to adult. To support the program, the Government of Indonesia since the year 2008 has been conducting national immunization movements sustainable and integrated. Its

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main goal is to start where the mother conceived up to the birth of. More important things to do in the long term is the availability of means of supporting health programs support the babies nationwide. Where the program has the main goal i.e. pressing infant mortality due to disruption of regular immunization process due to the limited knowledge of the mother regarding immunization. So the next target to be accomplished is the procurement of infant health program activities nationally through immunization, that movement created a healthy generation and provided the growing swell of a child. In the national immunization activities or movements of the baby, what factors can be used as a solution in the process of lowering the infant mortality rate nationwide in Indonesia. Given the infant immunization is one unit in creating healthy human resources on national development program [1].

## 2. Literatur Review

According to article Alodokter [2], some important things that need to be done to safeguard the health of the baby by a mother especially after birth is: maintaining the quality of the food. At this age, the child will normally be more curious with what is around it. Including baby food, and so usually Baby will be compelled to provide various kinds of food in children. But wait, not all food safely consumed children at this age. Some foods that Baby should avoid, one of which is food that can make it choke. If the baby wants to give it to fruit or vegetable, try to cut it small. For example cutting a carrot small dice size or other food with a very small size. In addition to making sure the size, make sure that also the level of softness of food given to the fruit of the heart baby. Avoid giving food size small but hard, such as nuts, popcorn, candy, or the like. Because it may cause infection when caught in the path of her breathing. Also avoid foods that are soft, yet despite the sticky. Food such as marshmallows, or chewing gum may also potentially trapped in the throat children babies. So also with the peanut butter, these foods also include potentially hard to swallowed. Do immunization. Immunization is important for maintaining the health of your child. Therefore, keep good care of your child's immunization schedule. At the age of 12-18 month, the compulsory immunization immunization is carried out polio, DPT of Deuteronomy, typhoid, measles, MMR, hepatitis A, influenza, varicella, and pneumococcal. Contact your pediatrician to find out proper immunization schedule of the little.

Play and learn. Fill your time with the little one and do a game that is not only fun, but also teach it a few things and hone motoriknya. For example by making the game ' bucket '. Where you and your child play collecting stuff. It can also fill bottles with grain or rice. So, your child will learn to make the sound from the object. If your child is already aged over 18 months, you can make it play dough (dough play). The trick with the place one cup of flour, one cup of water, a half cup of salt, two tablespoons of cream of tartar, colour meals, and a tablespoon of oil. Stir over medium heat until it forms a dough. Set the time break baby. Sleeping is an activity that is no less important to children. Keep your child's health by observing the patterns of sleep. Enough sleep can help the body to ward off disease, can help its growth, as well as power can make remember nicer, and can think clearly. At the age of 1 – 3 years of age, a child is likely to need sleep at least as much as 12-14 hours in a day. So make sure your child does not pass through the NAP and don't sleep too late. Maintain the cleanliness of baby. Other than for reasons of hygiene, wash your hands and feet before going to bed is also aimed at keeping the child to avoid diverse diseases caused by bacteria. One of them is a disease of the legs, hands, and mouth. The disease is a highly contagious type of include and are generally caused by the enterovirus virus. Children aged 1 to 4 years including risky against this disease. If your child is exposed to the disease, usually blister sores will appear or a rash or red spots on the hands and/or feet. This rash could contain water and form small bubbles or just flat. The child may also be experiencing a sore throat. This disease usually will lasts for 3 to 5 days.

In the article basics of vaccine safety [3], explained in details that each year more than 2.5 million child deaths could be prevented through vaccines. About two million child deaths can be prevented each year through immunization. An important goal of immunization: Vaccines keep to one's health, unlike other health efforts, vaccines make healthy people stay healthy, relieving the main barriers grow flower child. The vaccine has a wide range, the vaccine protects individuals, communities, and entire populations are immunized. There's even a disease that can be eradicated (Reduction-Eradication) in a complete and permanent world reaches zero new cases of infectious diseases through the efforts of health; no further assessment is required. through the efforts of immunization. The vaccine had a quick impact: most vaccines provide a tangible impact in communities in a short time. For example, measles immunization between years 2000 – 2008, vaccination has succeeded in lowering the number of sufferers of the virus highly

contagious campak, characterized by fever and red rash onset on the skin that can cause death when attacking children and individuals with weak body endurance. globally about 78% (from 750,000 deaths be 164,000 deaths/year).

Vaccines save lives, save the cost of care and treatment. Lately a panel whose members consist of leading economic experts put immunization programmes for children in order to four of 30 community health programs the most cost-effective. Healthy can be defined as a State is good, the whole body as well as the other sections, or a thing is that good. Own health can be defined as a State of healthy (free from disease) and the good of the State (or other agency). In other words, health can be defined as a State of healthy free of disease so that it can perform all activities without physical barriers. A person is said to be healthy if he had health both physically (organ) and psychological (mental, emotional, social, and spiritual).

Family factors. Family factors usually determine the success of the repair status of your child's health. The influence of the family during the growth and development of children is enormous through the relationship of the child and the family and its values are instilled. Whether the child was used as workers or older are treated properly and met his needs. The improvement of the status of children's health are also directly related to the role and function of the family against her child, such as child rearing, giving children, providing food intake, protecting health, provide protection, as a psychologist, embed the value of a good culture, preparing child's education, and others [4].

### **3. Research Methodology**

Population and Sample. Location of research concentrated on a private hospital in Surabaya, that the hospital in jalan Surabaya Husada Griya Dukuh Pakis II/110. The hospital became one of the hospitals that have units of maternal and child health care (MCH) in which there is special handling unit of the baby are growth period in immunization services. One unit is attached between them i.e., mother and her baby. Mother serve as direct caregivers in the home and in maintaining a control period for these babies. While the hospital is health care giver for the baby when the baby is experiencing health problems related to the activities of the immunization.

Data Source. In the process of gathering research data, the main data sources are the medical personnel, nurses and doctors on duty in the hospital and the mother who gave birth to a baby with depleted fosterage. The source of the data in the results gained from the interview and the data existing in skunder hospital as supporting. The number of mothers who made the overall sample is 49 people.

Data Analysis Technique. The process of sampling in research done with object methods random sampling approach. For the purposes of the processing and analysis of data, researchers using special analysis tools or methods deemed appropriate or relevant i.e. the model analysis with linear regression approach to estimate double. Where is the complete model formula of this analysis and the decision-making process on issues of research, one of the analysis method that is used is the process of estimation through analysis approach statistical analysis [5].

The data collected from the field and has been entered into the computer then the next data validation is performed, i.e. checking the completeness of the data, do the coding and data modification in accordance with the needs of the analysis. As for the analysis of data will be done is a descriptive analysis to quantitative data in a way by looking at the average and relative frequency distribution. Further to the evaluation of the program will be conducted by way of analysis, Comparing the implementation monitoring the health of infants with immunization guidelines. Compare with program planning implementation monitoring the health of the baby in Griya Husada Surabaya.

Assess accuracy by looking at the output of the data relating to record keeping and reporting. Assess the utilization of data for policy monitoring. While for qualitative data in descriptive textual analysis was conducted to clarify the results of quantitative data. The hospital will also conduct interviews to the midwife Clinics and midwives in villages associated with the implementation of the health monitoring system of a baby.

Table 1. Interaction Of The Dependent Variable With The Independent Variable In Maintaining The Level Of Health Of Mother And Baby

Variable	Name	Conditions In Application
Y	Health problems and death rates of infants	Circumstances that must be controlled in an effort to reduce infant mortality, through a multiple conditions approach.
X1	Health	Understanding of the health of the mother and baby, so that the baby can grow healthy.
X2	The age of	The process of controlling a baby's health is adjusted to his age level.
X3	Height	Baby's health control process based on height.
X4	Culture	Changing bad culture in caring for and maintaining the health of mothers and babies.
X5	Family	Creating a good relationship in the family in the process of maintaining a baby's health.

### 3. Result and Analysis

The test results using a linear multiple regression analysis models, obtained an analysis as described and shown below:

Table 2 Output of ANOVA Analysis

An examp	Column A (t)	Column B (T)	Mean Square	F	Sig
Regression	12,534	5	2,507	106,004	<0,001 <sup>a</sup>
Residual	1,017	43	0,024		
Total	13,551	48			

In table 2, it can be explained that the overall variables age, health, culture, height, and families have influence simultaneously or together against the level of health of pregnant women and infant immunization. So it can be estimasikan that the level of health of pregnant women and infant immunization has a dependency to the variables of age, health, culture, Family, and Height.

Table 3 Output of Coefficients Analysis

Model	Unstandardized Coefficients				
	B	Std. Error	Beta	t	Sig.
(Constant)	-0,904	0,239		-3,787	<0,001
Age	0,185	0,072	0,184	2,570	0,014
Health	0,150	0,062	0,133	2,410	0,020
Culture	0,130	0,055	0,122	2,348	0,024
Height	0,443	0,076	0,417	5,823	<0,001
Family	0,064	0,294	4,619		<0,001

When observed carefully, the result of multiple linear regression analysis above (on the column Sig.), can be seen clearly all the factors of significance has a value below 5%, i.e. the variables age, health, culture, family and height. Means the fifth factor above, have the role, function, influences, proximity and relationship towards the goal of immunization that is lowering the infant mortality rate. But if viewed from the value of the coefficient (in column B), there are two factors that have a role is so dominant in the decline of infant mortality rate i.e. the family factor and height. This can be interpreted that if the growth of the baby is said to be healthy then the baby will experience normal height growth and without a hitch. Proportional with the age factor. While one other factor that could help decrease the level of infant mortality is the family factor, however the family hold an important role in keeping the growing swell of the infant and family life is very influential in the internal the health of the baby in a family. This means that

the more ugly life of a family, then the baby's health and a chance tending increasingly disturbed. Given the nature of foster care infants could not be released from the role of father and mother. A wealthy family life will become an important capital baby his growth in the long term health of the baby in a family. If the reverse happens then the health of the baby in a family might be interrupted.

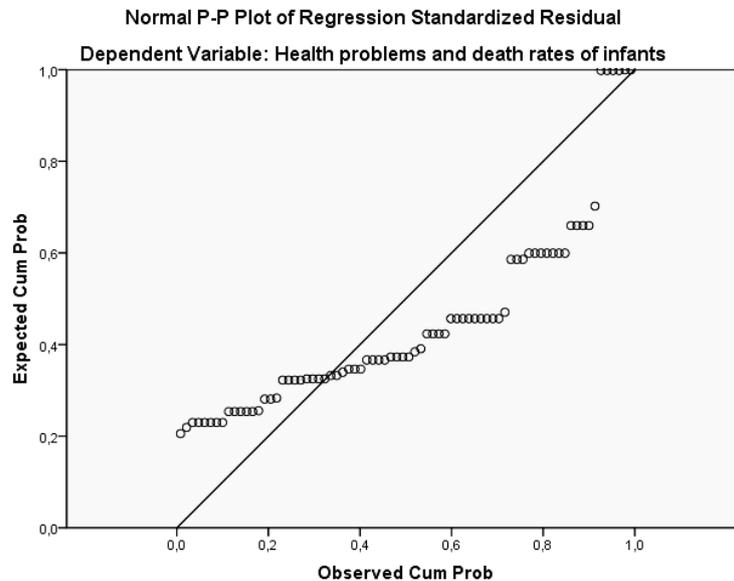


Figure 1. Normal P-P Plot of Regression Standardized Residual

Based on the appearance and shape of the figure 1, it can be understood that there is a linear relationship between the independent variable and the dependent variable, this is shown by drawing dots around the diagonal line and forming a pattern of movement that is from the bottom left to the top right. In this form the error rate that occurs between the independent variable and the dependent variable is still in the category can be tolerated so that the numbers that appear in table 1 and table 2 can be used as estimator or estimation numbers, means that the independent variable group can be used as a means of estimating changes in the value of the dependent variable.

#### 4. Conclusion

Children's health is very important for the life of the child, the parents or other persons in the life of nation and State. Children's health can be seen in physical and psychic. Children's health can be started from a healthy life patterns especially care of his parents since childhood like the keep clean themselves, the environment to a healthy diet and regular. There are several factors that affect children's health such as health factors, cultural factors, and family factors that greatly affect health in children. The health of children or infants depending on age, health, culture, family and height. Application application program in the long term, cannot be released from all obstacles that may occur, therefore there are suggestions and recommendations to be considerate and repairs to the front in order to fine-tune the application program. The use of conditions of early warning turned out to be able to be used to detect the presence of pregnant women that approximates the birth process and the condition of the baby to the mother who had just given birth to. This condition will provide accurate data on health conditions of an actual baby, so when found a case regarding the health of the baby then actions can be performed, the conditions of early warning means decent used or applied in the a unit of health care such as health centers, posyandu or hospital. After this successful application programs apply at the level of clinics and posyandu, surely the application this application program does not stop just up there alone. Forward requires efforts toward other functions in the field of health especially in overcoming various health problems for society more broadly. Other programs that can be developed from this application program is early warning in the application program to monitor the health of infants up to the age of 36 days calculated from the

time of the birth of the baby. Because of the level of health of babies at an early age like this are also prone to experiencing health problems.

The next steps that must be taken and prepared in support of reducing infant mortality, all parties must be more focused on handling all diseases that can arise during the baby is in its infancy, bearing in mind that infants in infancy require extra attention from their parents and health workers so that can avoid the possibility of contracting all forms of diseases that can interfere with the health of the baby. Handling of baby's health in an effort to reduce the infant mortality rate is in the hands of his mother, who treats the baby everyday. While health workers are only in the second line.

The level of a mother's ability to care for their baby is strongly influenced by some of the factors mentioned in the analysis above, but is also broadly influenced by all government policies that focus on handling infant health nationally in a country. Actions that must be taken by making and running all forms of programs whose purpose is to suppress the causes of disease through immunization activities and programs that can be applied in the field to mothers through socialization, counseling and training how to care for babies properly so that they can be avoided from all forms of disease disorders.

Indonesia is an archipelagic country, so the habits and customs of each region may be different in the perception of each parent, especially mothers, in understanding the development and growth process of their babies who are vulnerable to dangerous diseases during infancy. These cultural and traditional differences sometimes become obstacles in counseling activities for mothers in caring for their babies, because they generally have been inherited from generations of culture and customs that tend to be traditional in the process of health care for their babies in their respective regions or regions. The attitudes and culture of the urban population are indeed very different from the attitudes and culture of the population in rural areas, especially remote areas that are still far from the reach of proper health services.

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