



COVERAGE OF BASIC HEALTH PROGRAMS AND REGIONAL FISCAL CAPACITIES INDICES WITH STUNTED PREVALENCE CHANGE IN 2007-2013 ON CHILDRENS UNDER FIVE YEARS OF REGENCIES / CITIES IN INDONESIA

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ABSTRACT **Background :** Stunted or short is a long-term lack of nutrients and is chronic in the critical period of growth and development of children aged 0 - 59 months. Initial detection of stunted occurrence, beginning at the critical period of the first 1000 days of live birth, from pregnant mother of nine months to 24 months old child.

Methodology: The cross-sectional method is used to describe the coverage of health programs, and the regional fiscal capacity index with changes in stunted prevalence of children under five years at the Regencies / Cities level of Indonesia.

Result: A total of 59 Regencies/Cities or 26.94% stunted prevalence down and 160 Regencies /Cities or 73.06% stunted prevalence up. Breastfeeding , Weighing , vitamin A and, complete immunization no significant with stunted prevalence changes (p-value > 0.05). While the LBW, tuberculosis and fiscal capacity index significantly with stunted prevalence changes (p-value <0.05).

Conclusion: Increased coverage health programs through the Ministry of Health. Increased regional economic growth in Regencies / cities in Indonesia to reduce stunted prevalence of children under five years. The target of the basic health program is adjusted to the five year Indonesia National Medium-Term Development Plan

KEYWORDS : Health Program, Fiscal Capacity Index, Stunted Prevalence

Background :

Assessment of nutritional status of short children is determined by anthropometry high or body length by age below minus two standard deviations and very short below minus three standard deviations based on WHO Child Growth Standard [1].

Stunted or short is a long-term lack of nutrients and is chronic in the critical period of growth and development of children aged 0 - 59 months. Initial detection of stunted starts, starting at a critical period of growth and development of children within the first 1000 days of live birth, from nine months pregnant women to 24 months of age [2]. Damage to this period is irreversible meaning it can not be corrected in the next phase of life and affects the health of children when mature [3]. This period is called the Window of Opportunity is the golden period in growth. At a critical time there is a great deal of pain and death in children [4].

There are two factors that influence under five years stunted namely direct factors and indirect factors. Direct factors are infectious diseases and nutrient intake. While indirect factors are nutritional status of pregnant women, health services, hygiene and sanitation, and location of demography [5].

Based on research conducted in Latin America, South Asia and Africa. Demonstrate that children under five year nutrition improvement programs can reduce child mortality by 14% in Latin America, South Asia 24% and 31% in Africa [6]. While the fundamental factors of stunted causes are socio-economic form; education, employment, family income, and the number of family members [5]. It is estimated that 165 million stunted children in developing countries are related to family, education, employment, low and middle income [7]. Stunted is a global and national health problem in Indonesia. Stunted is one of the most important cases in the world from childhood illness and 80% stunted in developing countries. National figures show stunted prevalence in Indonesia in 2007, 2010 and 2013 at 36.8%, 35.6% and 37.2% meaning stunted problem in Indonesia including in serious nutrition problem that is 30 - 39%.

To reduce the stunted numbers in Indonesia today, need to refer to Law Number 25 of 2004, on the Ministry of Health's National Medium Term Development Plan. The main objectives of the Ministry of Health are (a) improvement of maternal and child nutrition status, (b) increased disease control, (c) increased access and quality of basic and referral health services, especially in remote, underdeveloped and

border areas, (d) increasing coverage of universal health services through Healthy Indonesia Cards, (e) the fulfillment of the needs of health workers, medicines and vaccines; and (f) improving the responsiveness of the health system [8].

Based on Law No. 25 of 2004 and the National Medium-Term Development Plan of the Ministry of Health. Researchers would like to see: whether low birth weight, tuberculosis, breastfeeding 0-23 months, children weighing ≥ 4 times, giving vitamin A, complete immunization and, Regional Fiscal Capacity Index related to stunted prevalence change in regencies / cities in Indonesia.

Methodology:

In 2007 there are 440 districts / cities and in 2013 to 497 Regencies / Cities, there has been the establishment of New Autonomous Region of 57 Regencies / Cities in 33 provinces in Indonesia. The newly created Regency / City or New Autonomous Region, formed from 2007 to 2013, is not included in the analytical unit. The sample is a child under five years found in 440 Regencies / Cities in 2007 and 2013 in Indonesia.

This research uses secondary data of Riskesdas and Ministry of Finance in 2007 and 2013. Secondary data from Riskesdas in 2007 and 2013 are children under five years of stunted, low birthweight prevalence, prevalence of tuberculosis, coverage of 0-23 months breastfeeding, coverage of child weighing ≥ 4 times, vitamin A coverage and full immunization coverage. The secondary data of the Ministry of Finance is the Fical Capacity Index of regions to see the economic growth of the Regencies / Cities.

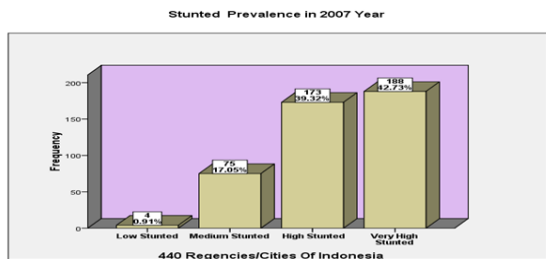
In processing and analyzing Riskesdas and Ministry of Finance data in 2007 and 2013, there has been a reduction of samples from 440 Regencies / cities [8]. The reduction of Regencies / Cities samples was conducted according to changes in stunted prevalence of children under five years ie down, up, and fixed.

The stunted prevalence of children under five years increased and decreased from 2007 to 2013 in Regencies / Cities in Indonesia was 219 Regencies / Cities, entered in the unit of analysis. While stunted prevalence remained unchanged in 2007 to 2013 as many as 221 Regencies / Cities in Indonesia, excluded from the analytical unit. The method used is cross sectional to describe the decrease and increase of risk factor of public health status to change of stunted prevalence of

children under five years at period [9]. Stages of data analysis through test stages of data normality, missing, descriptive analysis and logistic regression [10].

Result:

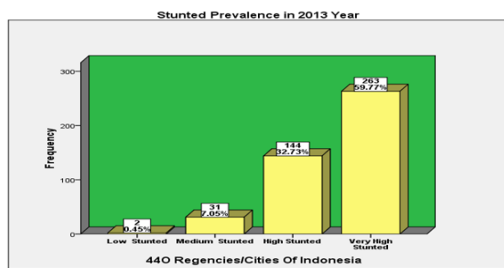
Figure 1. Prevalence of Stunted Regencies /Cities in Indonesia Year 2007



WHO 2010. Cut Off Prevalence Stunted: Low <20%, Medium 20-29.9%, High 30-39.9% and. Very High ≥40%.

In the figure above 2007 shows below 4 Regencies /Cities or 0.91% of low stunted prevalence, 75 Regencies / Cities or 17.05% moderately stunted prevalence, 173 Regencies/Cities or 39.32% high stunted prevalence and 188 Regencies /Cities or 42.73% stunted prevalence very high. The stunted prevalence rate in 2007 is much higher, thus the prevalence of stunted children under five years in Regencies / Cities included in the category of very high prevalence that is ≥ 40% and is a very serious public health problem in Indonesia [8].

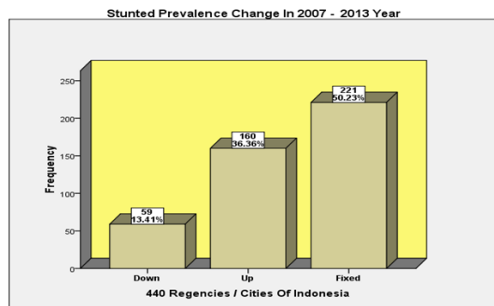
Figure 2. Prevalence of Stunted Regencies / Cities in Indonesia Year 2013



WHO 2010. Cut Off Prevalence Stunted: Low <20%, Medium 20-29.9%, High 30-39.9% and. Very High ≥40%.

Prevalence of Stunted children under five years in 440 Regencies / Cities Indonesia in 2013 year. The stunted prevalence shows different levels of 2 Regencies / Cities or 0.45% low stunted prevalence, 31 Regencies /Cities or 7.05% moderately stunted prevalence, 144 Regencies / Cities or 32.73% high stunted prevalence and, 263 Regencies / Cities or 59.77 % stunted prevalence is very high. The stunted prevalence rate of children under five years in 440 Regencies / Cities is very high at ≥ 40% and is a very serious public health problems Indonesia in 2013 year [8].

Figure 3. Prevalence of Stunted Down, Up and Fixed of Regencies / Cities in Indonesia from 2007 to 2013 Year



WHO 2010. Cut Off Prevalence Stunted: Low <20%, Medium 20-29.9%, High 30-39.9% and. Very High ≥40%.

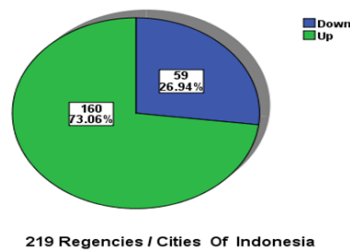
From 440 Regencies / Cities in Indonesia 2007 to 2013 changes in

stunted prevalence down, up and fixed in children under five years. Changes in stunted prevalence down by 59 Regencies / Cities or 13.41%, many as 160 Regencies / Cities or 36.36% prevalence stunted up and, many as 221 Regencies / Cities or 50.23% stunted prevalence fixed or no change. From 2007 to 2013 the most prevalence stunted fixed or no change, higher than the prevalence of stunted up and down in children under five years of Regencies / Cities in Indonesia. Past and irreversible chronic nutritional problems in the future for short children in Indonesia from 2007 to 2013. The prevalence of stunted under five years remains a serious nutritional category of 30-39.9% in Indonesia [11].

Figure 3 above shows a change in stunted, up and fixed prevalence. For stunted prevalence fixed 2007 to 2013 means stunted prevalence is at 4 indicators ie low-low, medium - medium, high-high and, very high-very high. A total of 221 Regencies /Cities or 50.23% were stunted prevalence of children under five years, excluded from the analysis unit because there was no change. For the measure in the National Medium-Term Development Planning of the Indonesian Ministry of Health is a change in the coverage of the health program provided with the effect. Because the entry in the unit of analysis is stunted prevalence down by 59 Regencies /Cities or 13.41%, and stunted prevalence up by 160 Regencies / Cities or 36.36% at children under five years in Indonesia. Early detection of stunted, beginning at a critical period of growth and development of children within the first 1000 days of live birth, since nine months pregnant women up to 24 months old child [12].

Figure 4. Prevalence of Stunted Down and Up of Regencies / Cities in Indonesia from 2007 to 2013 Year

Stunted Prevalence Changes Down And Up in 2007 - 2013 Year



The stunted prevalence of children under five years down and up in 219 Regencies / Cities in Indonesia from 2007 to 2013 year. A total of 59 Regencies / Cities or 26.94% were stunted prevalence down and many as 160 Regencies / Cities or 73.06% is the stunted prevalence of up in children under five years. Based on the picture above shows that the change of stunted prevalence in regencies / cities in Indonesia is still high. This means that for five years from 2007 to 2013, stunted prevalence up more by 73.06% compared to 26.94% lower. With the increasing prevalence stunted in the Regencies/Cities, then the problem of stunted prevalence of children under five years in Indonesia becomes a very serious public health problem in Asian-African countries that is ≥40% [11].

Table 2. Multivariate Analysis

Pemodelan Multivariate	B	S.E	Wald	Sig	Exp (B)	95,0% CI	
						Lower	Upper
Low Birth Weight Prevalence	0.657	0.323	4.141	0.042	1.929	1.024	3.631
Prevalence of Tuberculosis	0.653	0.327	3.981	0.046	1.921	1.012	3.647
Coverage of Breastfeeding 0-23 Months	-0.318	0.339	0.881	0.348	0.728	0.375	1.413
Coverage weighed > 4 times	-0.129	0.376	0.117	0.732	0.879	0.421	1.836
Coverage Vitamin A	-0.420	0.366	1.311	0.252	0.657	0.320	1.348
Full Immunization Coverage	-0.010	0.345	0.001	0.976	0.990	0.503	1.985
Regional Fiscal Capacity Index	0.712	0.352	4.102	0.043	2.039	1.023	4.061
Constant	-1.390	0.405	11.802	0.001	0.249		

a. Variable (s) entered on step 1: Prevalence of low birth weight, Tuberculosis Prevalence, Weighing Coverage ≥ 4 times, Vitamin A Coverage, Complete Immunization Coverage, Regional Fiscal Capacity Index The stunted prevalence of children under five years from 2007 to 2013 increases, causing stunted problems to become a very serious public health nutrition problem in Indonesia. Various programs of the Ministry of Health of the Republic of Indonesia have been implemented for the change of stunted prevalence down on the Regencies/Cities [13].

In the multivariate analysis results showed under 0-23 months breastfeeding coverage, child weighing coverage, vitamin A coverage, and complete immunization coverage were not significant with stunted prevalence changes (p -value > 0.05). The results of this study indicate that coverage of basic health programs at the Regencies / Cities level for children under five years, has not been able to reduce stunted prevalence at the Regencies / Cities level in Indonesia. Studies in Benin Philippines previously showed that stunted prevalence increased from the first 6 months until reaching the highest level in 36 months [14].

Indonesia's vast geography is one of the causes of high stunted prevalence. In general, children living in urban areas are more likely to get basic health care than children living in rural areas. Assessment of nutritional status is an attempt to interpret information obtained through anthropometric, biochemical, food consumption, and clinical assessment of a person [15].

Under five year olds live in urban areas, nutritional status is more easily monitored by health workers than in rural areas. Demographic differences between urban and rural areas at the Regencies / Cities level, causing stunted prevalence also differs between urban and rural areas. 6 months of unregarded children have an impact on the growth and development of children not periodically monitored from month to month as well [16].

A good basic health service is a basic health service that can reach all urban and rural communities. The failure of basic health care for children under five years is a basic health failure in the first 1000 days of live birth. And the 1000-day failure at the Regencies / Cities level in Indonesia is the failure of 1000 days of Indonesian children in the future.

Mistakes occurred 1000 times at the Regencies / Cities level causing 1000-fold destruction at the Regencies/Cities level in children under five years.

Based on the results of the study showed that the prevalence stunted in 2007 to the year 2013 there are significant upward changes. Various determinant factors that influence the low birth weight prevalence, tuberculosis prevalence and regional fiscal capacity index. The p -value results show very favorable relationships at the Regencies / Cities level between low birth weight prevalence, tuberculosis prevalence and, regional fiscal capacity index with stunted prevalence changes. Basically a change in stunted prevalence rises at the Regencies / Cities level, caused by the high prevalence of low birth weight, high prevalence of tuberculosis and low regional fiscal capacity index in Regional / Cities (p -value < 0.05). The higher the low birth weight is the increasing prevalence of stunted at the Regional / Cities level. The higher the tuberculosis is the increasing prevalence stunted at the Regencies / Cities level. The lower regional fiscal capacity index is the continuing rise in stunted prevalence at the Regencies / Cities level.

Based on research Unicef 2013. Shows that Low Birth Weight level global or worldwide is 9.5 million, Bangladesh 0.7 million, Philippines 0.5 million, India 7.5 million, Pakistan 1.5 million and Nigeria 0.8 million. Low Birth Weight is highest in India [1]. Taking into account the nutritional status of the mother and the survival of the child is very important to prevent the occurrence of Low Birth Weight [17]. Based on studies in Africa and Asia that stunted and wasted with infant mortality is the multiplicative impact of infectious diseases. This relationship is very synergistic with the death of children under five years in Africa and Asia [18].

The success of basic health services at the Regencies / Cities level is the success of basic health services reaching all urban and rural communities. The success of basic health in urban and rural areas is the success in the first 1000 days of the birth of an Indonesian child. And

the success of 1000 days at the Regencies / Cities level is the success of 1000 days of Indonesian children in the future. Success occurs 1000-fold at the Regencies / Cities level, earning 1000-fold profits at the Regencies / Cities level. Profits are the golden age of Indonesian children not stunted in the first 1000 days of live birth at the Regencies / Cities level in Indonesia. Based on Nepal Demographic and Health Survey: Determinants of Stunting and Severe Stunted 2011. Children aged 0 - 23 months are very significant to stunted by 26% and severe stunted 10%, possibly caused by the giving of exclusive breastfeeding 0-6 months and continued again 7 - 24 months, not appropriate to the growth needs of children [19].

One health program to reduce the prevalence of stunted is the provision of vitamins A. Vitamin A is an essential nutrient necessary to maintain immune function, eye health, growth and survival in children [20]. Approximately 190 million children aged 6 - 59 months receive supplementation of one high-dose vitamin A to improve the health status of children. Approximately 127 million preschoolers around the world experience less vitamin A impact on sickness and death [21].

Basically the basic health program in Indonesia conducted by the Ministry of Health in reducing Mother and Child morbidity is still low. The prevalence of low birth weight is high and the prevalence of high tuberculosis, so it has a strong influence on the rise of stunted prevalence in regencies / cities in Indonesia. In addition, the regional fiscal capacity index is related to the economic growth of the Regencies / Cities in Indonesia. The low regional fiscal capacity index of Regencies / Cities fiscal capacity is a negative impact of low economic growth in Indonesia.

The low regional fiscal capacity index is causes of Regencies / Cities with high poverty and high unemployment rates, no work for the head of the family, Regencies / Cities governments do not have sufficient natural resources. This is a negative impact of the stunted prevalence of children under five years old rising in the Regencies / cities in Indonesia. The inability of the Regencies / Cities fiscal capacity index in Indonesia is at the root of economic problems, causing stunted prevalence in Indonesia no change towards down, but instead go up. Thus the prevalence of stunted children under five years Regencies / Cities of Indonesia, is still a nutritional public health problem in Asia and Africa.

Basically to reduce the prevalence of stunted in Indonesia has been done complete immunization in children. Immunization is given to children to control the pain and death of seven major illnesses that include: tuberculosis, diphtheria, pertussis, tetanus, measles, polio, and hepatitis B. Provision of complete and regular basic immunization has been shown to reduce morbidity and mortality rate of children under five to 80 - 95% [22]. According to a study of mother education with immunization and stunted children in Kenya shows that 80% of children stunted in Kenya is one of the causes is a child under five years not immunized by 51%, while immunized 49% [23].

Based on stunted comparison with Growth Domestic Product (GDP) per capita and wealth index in Brazil, China, Colombia, India, Kenya, Nigeria, South Africa and Venezuela. At a complete economic growth shows a very strong relationship with malnutrition specifically occurs in stunted childrens [24]. While research in the United States in 1976 - 1980, that one-fifth percent of children stunted is found in poor government employees with low incomes of 6.8% and 12.9%. While children in government employees are not poor with enough income have lower stunted childrens that is 3.8% and 5.3% [25].

Conclusion:

The National Medium-Term Development Plan of the Ministry of Health of the Republic of Indonesia, have not been able to improve the basic health program that is coverage of 0-23 months breastfeeding, coverage of child weighing in health care unit, vitamin A coverage and, complete immunization coverage for children of regencies / Cities in Indonesia. Based on the National Medium-Term Development Plan of the Ministry of Health of the Republic of Indonesia, has not been able to reduce the prevalence of low birth weight and the prevalence of tuberculosis at the Regencies / Cities in Indonesia Based on regional economic growth in Indonesia. Regencies / Cities fiscal capacity index is low, is the cause of stunted prevalence rise in the Regencies / Cities in Indonesia. No work has been opened by the local government for the community, high unemployment rate at Regencies / Cities level, fixed income of head of family does not exist, low nutrient intake for

children under five years, is the root cause of increasing stunted prevalence, at the Regencies / Cities in Indonesia.

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