



Research

Description of the determinants of stunting events in children in the work area of Pangale Health Center

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ABSTRACT

Stunting is associated with the risk of morbidity and mortality, poor brain development, as well as slow motor skill development and mental retardation. This research is a quantitative research with a descriptive approach. The population in this study were stunted toddlers in the Puskesmas working area with a total sample of 83 samples using a total sampling technique. The collected data was then analyzed univariately. The results showed that from a total of 83 samples, most of them were male (50.6%), most of the mothers with elementary school education/equivalent were 33 people (39.8%), most of them had fathers who worked as farmers as many as 55 people (66.3%). The majority of mothers work as IRT as many as 75 people (90.4%). Stunting toddlers have fathers with short height categories as many as 66 people (81.5%) and most of them have mothers with short height categories as many as 72 people (86.7%). With parents whose income is < Rp 1,000,000.00 per month as many as 29 toddlers (34.9%), most of the toddlers do not have a history of LBW as many as 69 toddlers (83.1%), having a history of complete immunization as many as 77 toddlers (92.8%) and did not have a history of exclusive breastfeeding, namely 49 toddlers (59.0%). Therefore, the researcher recommends that the Puskesmas provide additional education to mothers about stunting and the importance of exclusive breastfeeding at posyandu.

1. Introduction

Child developmental delay or stunting is the most frequent nutritional status problem in the world, especially in developing and poor countries because it is a risk for morbidity and mortality, poor brain development, as well as slow development of motor skills and mental retardation. This is a serious threat to children as the next generation of the nation and also reduces the future productivity of a country (Unicef in Yusdarif, 2017).

According to TNP2K in 2017, as many as 150.8 million toddlers in the world suffer from stunting or around 22.2%. In 2007 Riskesdas stated the prevalence of 36.8% stunting in Indonesia. There was a decrease in 2010 to 35.6% and an increase in the stunting rate in 2013, which was 37.2%. Based on the Nutrition Status Monitoring (PSG) in 2015 stunting in Indonesia with a prevalence of 29% and in 2016 amounted to 27.5% and in 2017 there was an increase of 29.6% then decreased to 27.67% in 2019. Although declining, this figure is still above the WHO standard, which is stunting in Indonesia at a maximum of 20%. Among countries in Southeast Asia, Indonesia has the second highest stunting rate and is fifth in the world (Teja, 2019).

The results of data from the Central Mamuju Regency health office recorded that until 2019 the prevalence of stunting was quite high, reaching 41.59%. Based on the results of Riskesdas, it was found that the 41.59% stunting prevalence rate in Central Mamuju made Central Mamuju ranked 4th highest for stunting in West Sulawesi. Of the 5 sub-districts in Central Mamuju Regency, Pangale sub-district showed the highest stunting rate, namely 12.20% in 2020 and an increase compared to the previous year, namely 6.82% stunting patients consisting of two health centers, namely pangale health center and polo camba health center with the highest stunting cases, namely pangale health center as many as 83 people. (Mamuju Tengah Health Office, 2021).

Stunting needs special attention because of the many impacts caused when toddlers experience stunting such as inhibiting cognitive and motor development such as slow speech and walking and affecting brain development which is closely related to vision, hearing, and thinking during the learning process (Mita, 2016). Current research shows that stunting is related to many factors such as in research (Sutarto et al., 2020) which states that there is a relationship between family income and maternal education level on the occurrence of stunting. Research designed by (Kadang et al., 2019) shows that the determinants of stunting are exclusive breastfeeding history and LBW. And research (Kurniawati, 2020) shows that there is a relationship between family income, exclusive breastfeeding and the incidence of stunting. Meanwhile, research (Savita & Amelia, 2020) shows a relationship between the incidence of stunting and maternal employment. In research (Megantari et al., 2020) stated that there was a relationship between immunization status and history of infectious diseases with the occurrence of stunting.

The incidence of stunted children can continue to increase if the determinants as in the previously described studies are ignored. With this study, researchers want to know the description of the determinants of stunting incidence in the work area of the Pangale Health Center, Pangale District, Central Mamuju Regency in 2021..

2. Method

This study uses a type of quantitative research with descriptive methods. The population in this study were all stunted toddlers in toddlers in the Pangale Health Center work area as many as 83 children. The research instrument used in this study is a stadiometer to measure height and a questionnaire containing questions that researchers will ask the mothers of toddlers. The process of analyzing data in this study is univariate analysis using the SPSS computerized system. Univariate analysis to obtain characteristics of each research variable.

3. Results & Discussion

Table 1 presents the characteristics of parents that may relate to stunting incidents among children in the Pangale Health Center area. The data show that the majority of mothers had an elementary school education (39.5%), followed by senior high school or equivalent (24.1%), and junior high school (20.5%). A small proportion of mothers held diplomas or bachelor's degrees (each 4.8%), and 6% had no formal schooling. Most fathers were aged 30–49 years (71.1%), while the majority of mothers were also in the 30–49 year age group (61.4%). Regarding height, 81.5% of fathers and 86.7% of mothers were categorized as short, which may be associated with child stunting.

In terms of childcare, 92.8% of children were cared for by their mothers, while 7.2% were cared for by others. Monthly income varied, with 34.9% of families earning less than Rp 1,000,000.00, 30.1% earning between Rp 1,000,000.00 and Rp 2,000,000.00, and only 4.8% earning more than Rp 4,000,000.00. Most fathers worked as farmers (66.3%), while others were entrepreneurs (14.5%) or in other occupations (19.2%). Regarding mothers' occupations, the majority were housewives (90.4%), while others worked as midwives (3.6%), entrepreneurs (2.4%), or in other roles (3.6%). These socioeconomic and demographic factors are critical in understanding the underlying determinants of stunting in children in this region.

Table 2 describes the characteristics of children related to stunting incidents in the Pangale Health Center area. The distribution of gender was almost equal, with 50.6% male and 49.4% female. Regarding birth weight, 16.9% of infants were categorized as having low birth weight (LBW), while the majority (83.1%) were born with normal weight. In terms of breastfeeding practices, 41% of the infants received exclusive breastfeeding, while 59% did not. The age distribution of infants showed variation, with the highest proportion being 2 months old (20.5%). Other age groups included infants under 1 month (16.3%), 1 month (16.3%), 3 months (16.3%), 4 months (16.3%), and 5 months (12.2%). Only 2.1% of the infants were not breastfed. Finally, the data show a high rate of immunization coverage, with 92.8% of infants having completed basic immunization, while 7.2% had incomplete immunization. These findings highlight important child health characteristics that may be associated with stunting risk in the area.

The level of education is one of the social indicators in society because through education the attitude of human behavior can improve and change its social image. Mother's education is the main capital in supporting the family economy, also plays a role in the preparation of family meals and child care and care. The level of education also determines whether or not a person can easily absorb and understand the nutritional knowledge they obtain. This study is in line with research (Nadiah et al., 2020) which shows the results of research that most of the education of mothers of toddlers graduated from elementary / MI / equivalent, namely 29 people.

Parents who are short due to pathological or nutritional deficiencies are not due to gene abnormalities in the chromosomes. Parents who are short because of genes in the chromosomes that carry the short trait are likely to pass on the short trait to their children. If the shortness of the parents is due to nutritional or pathological problems, then the shortness will not be passed on to their children and then the toddlers can grow to normal height as long as they are not exposed to other determinants.

Table 1. *Parent characteristics*

| Characteristic | Frequency (f) | Percentage (%) |
|-----------------------------------|---------------|----------------|
| Mother's Education Level | | |
| No Schooling | 5 | 6.00% |
| Elementary School/Equivalent | 33 | 39.80% |
| Junior High School/Equivalent | 17 | 20.50% |
| Senior High School/Equivalent | 20 | 24.10% |
| Diploma | 4 | 4.80% |
| Bachelor's Degree | 4 | 4.80% |
| Father's Age | | |
| 19–29 Years | 23 | 27.70% |
| 30–49 Years | 59 | 71.10% |
| 50–56 Years | 1 | 1.20% |
| Mother's Age | | |
| 19–29 Years | 32 | 38.60% |
| 30–49 Years | 51 | 61.40% |
| Father's Height | | |
| Normal | 15 | 18.50% |
| Short | 66 | 81.50% |
| Mother's Height | | |
| Normal | 11 | 13.30% |
| Short | 72 | 86.70% |
| Childcare Provider | | |
| Mother | 77 | 92.80% |
| Other than Mother | 6 | 7.20% |
| Parental Monthly Income | | |
| < Rp 1,000,000.00 | 29 | 34.90% |
| Rp 1,000,000.00 – Rp 2,000,000.00 | 25 | 30.10% |
| Rp 2,000,000.00 – Rp 3,000,000.00 | 14 | 16.90% |
| Rp 3,000,000.00 – Rp 4,000,000.00 | 11 | 13.30% |
| > Rp 4,000,000.00 | 4 | 4.80% |
| Father's Occupation | | |
| Farmer | 55 | 66.30% |
| Entrepreneur | 12 | 14.50% |
| Others | 16 | 19.20% |
| Mother's Occupation | | |
| Housewife | 75 | 90.40% |
| Midwife | 3 | 3.60% |
| Entrepreneur | 2 | 2.40% |
| Others | 3 | 3.60% |

Table 2. *Characteristics of toddlers*

| Characteristic | Frequency (f) | Percentage (%) |
|----------------------------------|---------------|----------------|
| Gender | | |
| Male | 42 | 50.60% |
| Female | 41 | 49.40% |
| Birth Weight Category | | |
| Low Birth Weight (LBW) | 14 | 16.90% |
| Not LBW | 69 | 83.10% |
| Exclusive Breastfeeding | | |
| Exclusive Breastfeeding | 34 | 41.00% |
| Not Exclusive Breastfeeding | 49 | 59.00% |
| Infant Age | | |
| Not Breastfed | 1 | 2.10% |
| <1 month | 8 | 16.30% |
| 1 month | 8 | 16.30% |
| 2 months | 10 | 20.50% |
| 3 months | 8 | 16.30% |
| 4 months | 8 | 16.30% |
| 5 months | 6 | 12.20% |
| Basic Immunization Status | | |
| Complete | 77 | 92.80% |
| Incomplete | 6 | 7.20% |

When parents are short due to malnutrition or disease, it is likely that children can grow to normal height as long as the child is not exposed to other determinants. However, it is known that short mothers tend to have short children. This study is in line with research conducted by (Nadiah et al., 2020) which shows that stunting toddlers who have parents with a history of short height are 39 toddlers (53.1%) and parents with normal height are 9 toddlers (10.1%).

The characteristics of the baby at birth (LBW or normal LBW) are things that determine the growth of the child. Children with LBW history experience slower linear growth than children with normal LBW history. The period from pregnancy to the first two years of a child's life is a critical period. Growth disorders in this period are difficult to correct and children are difficult to achieve optimal growth and development. WHO states that LBW is one of several maternal factors of stunting.

LBW can also occur due to birth before the perfect gestational age of 37 weeks. Infants are at higher risk of growth disorders, infectious diseases, slow development and death during infancy and childhood. The health condition of the mother's nutritional status during pregnancy can affect fetal growth and development. This study is in line with (Supriyanto et al., 2018) which shows that most toddlers were born with normal weight as many as 29 toddlers (50.9%) and toddlers born with low birth weight amounted to 28 toddlers (49.1%).

Economic and environmental factors have more influence on child growth than genetic and ethnic factors (Habicht, 1974 in Paramitha, 2012). Household economic status is seen to have a

significant impact on the probability of a child being short and thin. In this regard, WHO recommends stunting as a measure of low socioeconomic status and as an indicator to monitor equity in health.

An increase in household income is associated with a dramatic decrease in the probability of child stunting. This study is in line with research conducted by (Basri et al., 2021) which shows that most parents of toddlers have low income as many as 26 people (76.5%) and a small proportion of high income totaling 8 people (23.5%).

Employment is an important factor in determining the quality and quantity of food and parenting, because work is related to income, thus there is an association between income and nutrition, if income increases, it is not impossible that health and family problems related to nutrition have improved.

Families who do not work will have problems in parenting for toddlers so that food intake for growth will also be less and families who work, especially mothers of toddlers so that childcare by other parties can also affect child nutrition if the caregiver's knowledge is not good. Parental employment is related to family economic status and parenting. Parents who do not work will have a low economic status which results in a lack of purchasing power for food.

Breast milk is the best food for infants immediately after birth. According to WHO, exclusive breastfeeding is the provision of breast milk alone to infants until 6 months of age without additional fluids or other foods. Breast milk can be given until the baby is 2 years old. Some babies in low-income countries need breast milk for growth to survive because it is a good quality and easily available source of protein. Because the content of substances in breast milk is very different from others.

Immunization can create antibodies or immunity that effectively prevent the transmission of certain diseases. The government is obliged to provide complete immunization to every baby. The Ministry of Health changed the concept of complete basic immunization to complete routine immunization. Complete routine immunization consists of basic and follow-up immunizations. Complete basic immunization is given from infants aged less than 24 hours to 9 months of age. The purpose of immunizing children is to reduce the risk of child morbidity and mortality due to immunization-preventable diseases. The immunization status of children is an indicator of contact with health services. This study is in line with research (AL Rahmad et al., 2013), namely the number of toddlers who are fully immunized is 34 toddlers (70.8%) and toddlers who are not fully immunized are 14 toddlers (29.2%).

4. Conclusion

The conclusion of this study is that the education level of mothers who have stunted toddlers is mostly elementary / equivalent education, namely 33 people (39.8%). Stunted toddlers mostly have fathers who work as farmers, as many as 55 people (66.3%). The work of mothers who have stunted toddlers is mostly as housewives, namely 75 people (90.4%). Stunted toddlers mostly have fathers with short height categories as many as 66 people (81.5%) and most have mothers with short height categories as many as 72 people (86.7%). Most of the stunted toddlers did not have a history of exclusive breastfeeding, namely 49 toddlers (59.0%). Most of the stunted toddlers did not have a

history of LBW, namely 69 toddlers (83.1%). Most stunted toddlers have parents with an income of <Rp 1,000,000.00 per month, as many as 29 toddlers (34.9%). Most stunted toddlers have a complete immunization history, as many as 77 toddlers (92.8%).

Researchers suggest that the Puskesmas and cadres at the posyandu should conduct counseling to the community about stunting. Health workers from the Puskesmas and posyandu cadres or stunting cadres to provide additional education to mothers both pregnant and those with toddlers about the importance of exclusive breastfeeding to be given to children as well as counseling on lactation management. Future researchers are expected to add other variables such as local community culture regarding exclusive breastfeeding.

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