

## **MAPPING OF FAMILIES AT RISK OF STUNTING BASED ON FOUR TOO FACTORS IN SOUTH KALIMANTAN**

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**Abstract:** Stunting is a condition of failure to thrive in children under five, the impact of chronic malnutrition in the first 1,000 days of life. Stunting is caused by multiple determinants, including the mother's age during pregnancy is too young or too old, the distance between pregnancies is too close, and too many children besides other determinants. The prevalence of stunting in South Kalimantan in 2021 is 30%, which is still far from the achievement target set by the government, which is at least 14% in 2024. The purpose of this paper is to map families at risk of stunting based on four too factors in South Kalimantan. This research uses a quantitative method sourced from secondary data, namely data on families at risk of stunting as a result of updating, verifying, and validating Family Data Collection 2021 (PK21) data in South Kalimantan. Data analysis in this study used: (1) descriptive statistical analysis to describe families at risk of stunting with 4 (four) too factors; (2) calculating the classification; (3) mapping; (4) conclusion. Four too factors is a factor that causes stunting in children because they can affect the parenting style of parents towards their children, so that, to take good care of children, fulfilling nutrition in children cannot be done optimally which will cause children to be stunted. In addition, if the mother gives birth at a distance of > 2 years, the mother does not have time to prepare the mother's condition and nutrition for the next pregnancy, thus affecting the fetus she is carrying..

**Keywords:** mapping, risk families, stunting, South Kalimantan

### **INTRODUCTION**

Stunting can be interpreted as a condition that occurs due to the impact of chronic malnutrition during the first 1,000 days of a child's life (Trihono et al., 2015). Stunting is defined as the condition of children aged 0 - 60 months, where height for age is below minus 2 Standard Devias (2-2SD) from the WHO median standard (Ministry of Health RI, 2011). Stunting is

characterized by one of the shorter heights of toddlers compared to their peers, which is also called failure to thrive (Nisa, 2020).

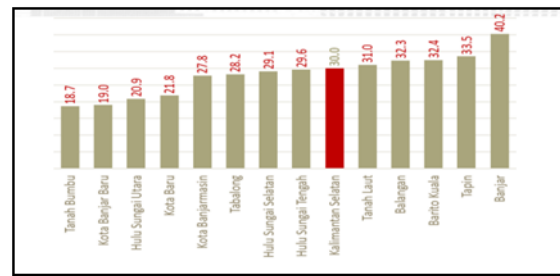
According to WHO (2020), Wanimbo & Wartiningsih (2020), Wang et al. (2017), nMinistry of Health of the Republic of Indonesia (2018), Anthony, et al (2018), Rangi, et al (2018), Rohmani, et al (2015) factors that cause stunting include the age of a mother when pregnant under 21 years or

over 35 years, less spacing between pregnancies than 3 years, have more than 2 children, and another determinants. The factors are too young, too old, too close, and too many are the 4 too factors of the BKKBN program that mothers should avoid getting pregnant and giving birth to avoid unwanted risks.

The adverse effects caused by stunting are divided into two, namely the short-term and the long-term. In the short term, there are disturbances in the development of the brain, intelligence, physical growth disorders, and metabolic disorders in the body. Meanwhile, in the long term, the negative consequences that can be caused are decreased cognitive ability and learning achievement, decreased immunity which can lead to getting sick easily, and a high risk of developing diabetes, obesity, heart and blood vessel disease, cancer, stroke, and disability in old age. Even when they grow up they will have short bodies, low productivity levels, and no competitiveness in the world of work (BKKBN, 2021).

There are 2 versions of the stunting prevalence rate in South Kalimantan Province, namely 30.00% data from SSGI and 10.64% from e-PPGBM data. The difference in the prevalence rate of stunting in the 2 data sources is due to the different methods used in data collection. The difference in the value of the prevalence of stunting in the SSGI and e-PPGBM methods has the potential to cause multiple interpretations of data and further risks the inaccuracy of decision-making in formulating policies to accelerate stunting reduction. There must be an agreement regarding the source of stunting data according to its use and achievement targets. (Wati et al., 2022)

**Figure 1.** Graph of Stunting Prevalence Figures for South Kalimantan Province in 2021



Source: SSGI, 2021

South Kalimantan in 2021 based on the Toddler Nutrition Status Survey (SSGI) data, the prevalence of stunting is 30%, this figure is above the national average of 24.4% and in 6th rank in Indonesia. Meanwhile, the prevalence rate of stunting at the district/city level in South Kalimantan Province varies, so the recommendations for accelerating the reduction of stunting, especially those caused by 4 too factors will vary at the district/city level. There are 5 districts whose prevalence rates are above the province, the highest are Banjar Regency, Tapin Regency, Barito Kuala Regency, Balangan Regency and Tanah Laut Regency. This study used secondary data from PK21 data in South Kalimantan Province which had never been analyzed before.

## LITERATURE REVIEW

According to Presidential Decree No. 72 of 2021, stunting is a disruption to the growth and development of children due to chronic malnutrition and recurrent infections which are characterized by their length or height being below the standard set by the minister in charge of government affairs in the health sector. According to the Ministry of Health of the Republic of Indonesia (2018), stunting is caused by multiple determinants such as the mother's height

(short), the age of the mother when pregnant under 21 years or above 35 years, the interval between pregnancies less than 3 years, too many children and insufficient nutritional intake at during pregnancy.

According to Duana et al (2022), Sugiyanto et al (2019), Beal et al. (2018), TNP2K (2017), Rohmani, et al (2015) the cause of stunting is maternal hypertension in pregnancy, where some causes are too young (<21 years) or too old (>35 years) pregnant women. According to Anthony, et al (2018), teenage pregnancy is correlated with stunting compared to pregnancy at the ideal reproductive age of the mother.

## RESEARCH METHODS

The research area in South Kalimantan Province includes 2 cities and 11 regencies. This research uses a quantitative method that originates from secondary data comes from recapitulation data of families at risk of stunting as a result of updating, verifying and validating the 2021 Family Data Collection (PK21) data in South Kalimantan.

The response variable in this study (Y) was a family at risk of stunting with 4 predictor variables (X) including too young to give birth (X<sub>1</sub>), too old to give birth (X<sub>2</sub>), too close to give birth (X<sub>3</sub>), and too many give birth (X<sub>4</sub>). In this study, the analysis included: (1) descriptive statistical analysis to describe 4 too factors with families at risk of stunting; (2) calculating the classification; (3) mapping; (4) conclusion.

Calculating the classification with the formula:

$$K = \frac{\text{Highest Cases} - \text{Lowest Cases}}{5} \quad (1)$$

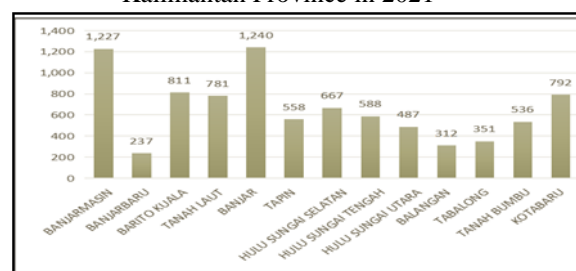
## RESULTS AND DISCUSSION

### 1. Too Young To Give Birth

The high rate of child marriage in South Kalimantan is directly proportional to the number of births at child age (<18 years) or adolescent age (<21 years). In BKKBN there is a program called “4 Too” which includes too young, too old, too close, and too many. The meaning of too young is the wife's age when giving birth is too young or <21 years. According to PK21 data, the number of wives in South Kalimantan who gave birth too young (<21 years) were mostly in Banjarmasin City, Banjar Regency and Barito Kuala Regency. Meanwhile, according to PK21 data, the number of wives in South Kalimantan who gave birth too young (<21 years) was at least in Banjarbaru City.

The findings in this study are in line with the research of Duana et al (2022); Wanimbo & Wartiningsih (2020) there is a correlation between birth age under 21 years at delivery and stunting.

**Figure 2.** Number of Wives Who Give Birth at Age <21 Years (Too Young) in South Kalimantan Province in 2021

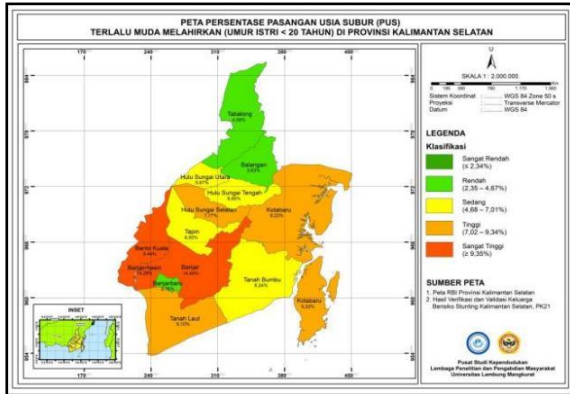


Source: PK21

Map of the percentage of Couples of Reproductive Age (PUS) whose wives gave birth too young or <21 years in South Kalimantan Province, divided into 5 classifications. Banjarmasin City, Banjar Regency, and Barito Kuala Regency are in the category with the highest percentage of PUS whose wives give birth too young or

<21 years old and are given a red symbol. Only Banjarbaru City, Tabalong Regency, and Balangan Regency are classified as very low.

**Figure 3.** Percentage Map of PUS Too Young to Give Birth in South Kalimantan Province in 2021

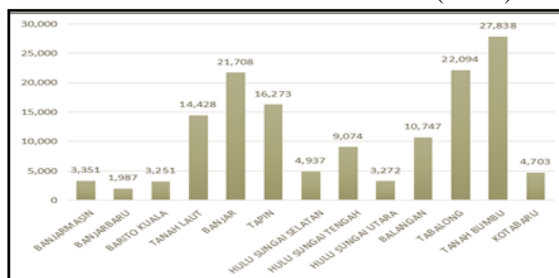


Source: PK21

## 2. Too Old To Give Birth

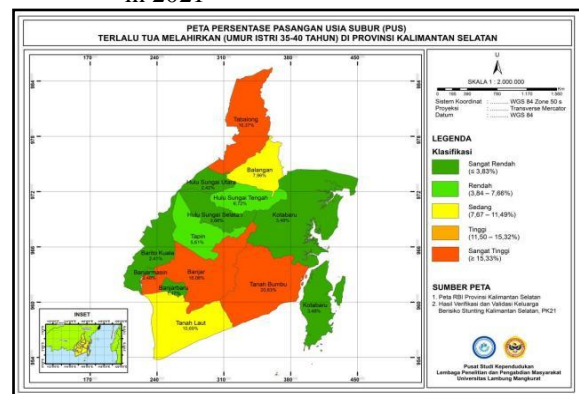
Too old to give birth is the second of “4 Too” with the definition of the wife's age when giving birth too old or 35-40 years. According to PK21 data, the number of wives in South Kalimantan who gave birth were too old (35-40 years) in Tanah Bumbu, Tabalong, and Banjar districts. Meanwhile, according to PK21 data, the number of wives in South Kalimantan who gave birth to too old (35-40 years) was at least in Banjarbaru City. This finding corroborates the research of Ranggi, et al (2018); Larasati et al (2018); Safitri and Djaiman (2021), that the age of giving birth that is too old (> 35 years) is more at risk of causing stunting compared to mothers who give birth at the ideal age of 20-35 years.

**Figure 4.** Number of PUS with Wives Who Give Birth at Age > 35 Years (Too Old) in South Kalimantan Province in 2021 (PK21)



Map of the percentage of Couples of Reproductive Age (PUS) whose wives give birth to too old or 35-40 years in South Kalimantan Province, which is divided into 5 classifications. Banjar Regency, Tanah Bumbu Regency, and Tabalong Regency have the highest percentage of PUS whose wives give birth too old or 35-40 years and are given a red symbol. Meanwhile, there are 6 cities/districts classified as very low, including Banjarmasin City, Banjarbaru City, Barito Kuala Regency, Kotabaru Regency, Hulu Sungai Selatan Regency, and Hulu Sungai Utara Regency which are colored green.

**Figure 5.** Map of the Percentage of PUS Too Old to Give Birth in South Kalimantan Province in 2021



Source: PK21

## 3. Too close

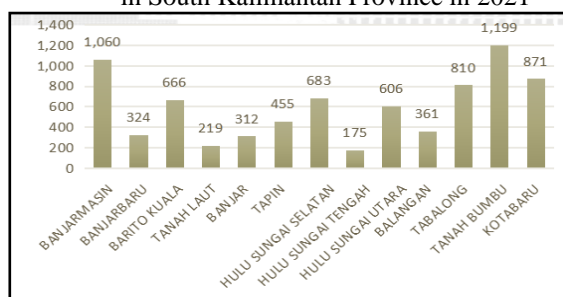
The birth spacing between children is too close or the distance between children born is 2 years. According to PK21 data, the distance between children is too close in South Kalimantan, most of them are in Tanah Bumbu Regency, Banjarmasin City, and Kotabaru Regency. Meanwhile, the birth spacing between children that is too close is at least in Hulu Sungai Selatan Regency.

This finding reinforces the findings in Ernawati's research (2021) that birth spacing that is too close results in the inability of families to care for children properly, so that, the baby's nutrition is fulfilled, it is hoped that mothers will breastfeed their babies for up to 24 months.

In other research that is in line with Aryu (2013) and Wardani (2022), the distance between pregnancies is one of the factors causing stunting, namely the distance between pregnancies or also known as the difference between the age and the birth before or after the birth of the subject. Spacing of births can cause stunting because the spacing of pregnancies affects parenting styles for their children. Children who have a close birth spacing (<2 years) have a risk of stunting 11.65 times compared to children who have a birth spacing of  $\geq 2$  years. Jayanti and Ernawati (2021) in their research in Samarinda found that a pregnancy interval of less than 2 years can cause poor fetal growth, prolonged labor and bleeding during delivery because the condition of the uterus has not recovered properly.

Too close causes the mother to have a short time to restore the condition of her uterus so that it can return to its original condition. Pregnant women who are too close are at risk of experiencing anemia in pregnancy. There are other influencing factors such as lifestyle, not using contraception, and mothers not having routine checkups. Margawati and Astuti (2018) Pregnancy spacing is a factor causing stunting. The distance between pregnancies or also known as the difference between the age and the birth before or after the birth of the subject.

**Figure 6.** Number of PUS who have wives with too close spacing between children (<3 years) in South Kalimantan Province in 2021

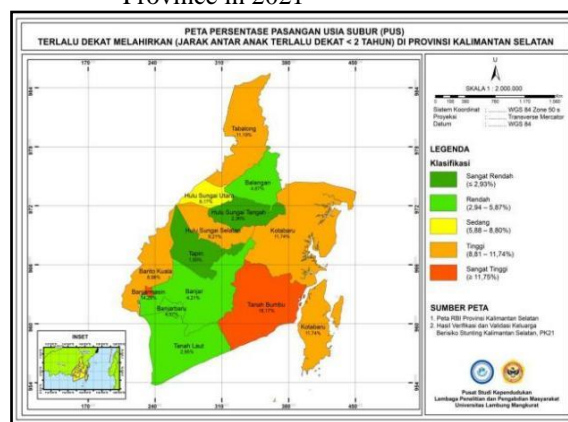


Source: PK21

Birth spacing can cause stunting because mothers who give birth too soon do not have time to prepare the mother's condition and nutrition for the next pregnancy, thus affecting the fetus they contain.

Map of the percentage of Reproductive Age Couples (PUS) whose wives gave birth to children too close or <2 years apart in South Kalimantan Province in 2021 classified into 5. Banjarmasin City and Tanah Bumbu Regency are in the very high category, the percentage is too close and is marked with a red symbol. While those belonging to the very low classification are 2 districts, namely Hulu Sungai Tengah Regency and Tapin Regency which are colored green.

**Figure 7.** Map of the Percentage of PUS Too Close to Giving Birth in South Kalimantan Province in 2021

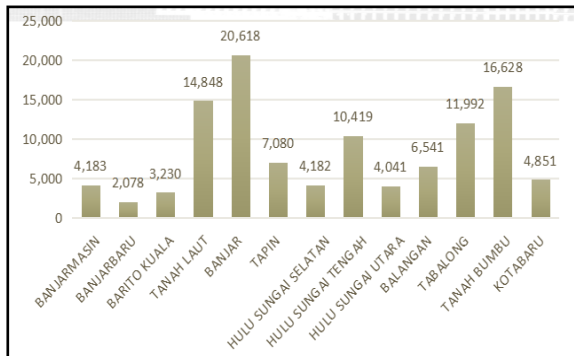


Source: PK21

#### 4. Too Many Children

Too Many in this analysis means that Couples of Reproductive Age (PUS) have a large number of children or  $\geq 3$  children. The number of PUS who have too many children in South Kalimantan according to PK21 data is in Banjar Regency, Tanah Bumbu Regency, and Tanah Laut Regency. While the fewest numbers are in the City of Banjarbaru.

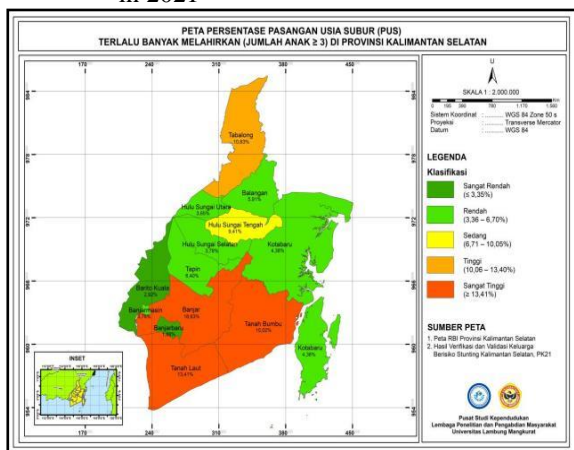
**Figure 8.** Too Many PUS Give Birth in South Kalimantan Province in 2021



Source: PK21

Map of the percentage of Reproductive Age Couples (PUS) whose wives give birth to too many children or the number of children  $\geq 3$  children in South Kalimantan Province in 2021, which is divided into 5 classifications. Banjar District, Tanah Bumbu District, and Tanah Laut District are in the category with the highest percentage of PUS having the most children and are given a red symbol. Meanwhile, Banjarbaru City and Barito Kuala Regency are given a green color.

**Figure 9.** Map of the Percentage of PUS Giving Birth Too Many in South Kalimantan Province in 2021



Source: PK21

## CONCLUSION

Stunting is a condition of failure to thrive in toddlers which is the impact of chronic malnutrition in the first 1000 days of life.

The factor of being too young is the age of the mother giving birth ( $<21$  years) contributes to the incidence of stunting. The map of the percentage of PUS for mothers giving birth  $<21$  years which is divided into 5 classifications shows that Banjarmasin City, Banjar Regency, and Barito Kuala Regency are in the highest category. Only Banjarbaru City, Tabalong Regency, and Balangan Regency are classified as very low.

Too old factor, the age of the mother giving birth (35-40 years) is more at risk of causing child stunting than mothers who give birth at the ideal age is 20-35 years. The percentage map (PUS) that gives birth to too old or 35-40 years in Banjar Regency, Tanah Bumbu Regency, and Tabalong Regency are in the highest category and those that are classified as very low include Banjarmasin City, Banjarbaru City, Barito Kuala Regency, Kotabaru Regency, Hulu Sungai Selatan Regency, and Hulu Sungai Utara Regency which are colored green.

Too close factor, birth spacing between children born  $<3$  years is a determinant of stunting because it has an impact on parenting styles for toddlers, Besides that, mothers also have less time to prepare for the next pregnancy, of course, it has an impact on nutritional intake and fetal growth. The percentage map (PUS) whose wife gave birth to  $<2$  years is classified into 5. Banjarmasin City and Tanah Bumbu Regency are in the very high category, the percentage is too close. While the classification is very low, namely Hulu Sungai Tengah Regency and Tapin Regency. The too many factor is having too many children or  $\geq 3$  children. Map of the percentage of PUS whose wife gave birth to too many children  $\geq 3$  children divided into 5 classifications. Banjar Regency, Tanah Bumbu Regency, and Tanah Laut Regency are in the highest category. While those belonging to the very low classification are in Banjarbaru City and Barito Kuala Regency.

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