The Role of Social and Economic Dimensions of The Family in Preventing and Reducing Stunting in Bekasi District

Edi Setiawan¹*, Septriyan Machsus²,
¹National Population and Family Planning Agency, Jl. Permata No. 1, Halim Perdanakusuma East Jakarta, 13650, Jakarta, Indonesia
²Central Bureau of Statistics of Ogan Komering Ilir, Ogan Komering Ilir, Jl. Lintas Sumatra, Buluh Cawang, Kayu Agung District, Ogan Komering Ilir Regency, South Sumatra 30618

*Corresponding author: edi.bkkbn@gmail.com

Abstract

The family has an important role in preventing and reducing stunting cases. Family is the smallest unit in society. Family has a real influence on children's health and nutrition. Efforts to be a family role have an effectively positive impact on high rates of stunting. Family has responsibilities to provide healthy food and nutritious food to children, and families have to create a healthy environment and provide good stimulation for children's growth. In addition, the role of the family also involves education and understanding of good nutrition, disease prevention, and maintaining proper hygiene and sanitation for children. Families also have an essential role in accessing and using public health services, like visiting a midwife, nurse, or doctor, doing immunizations for children, and monitoring children's growth at health facilities. This study confirms that the influence of social, economic, and health variables has a significant influence on the high incidence of stunting in Bekasi Regency. Several variables such as the Growth Risk of stunting families, prospective PUS, and catin (calon pengantin) access to health services are the causes of the high incidence of stunting in children in Bekasi Regency.

Keywords: family, social and economic, stunting, PUS, toddler

Abstrak


Kata kunci: balita, calon PUS, keluarga, stunting, sosial, dan ekonomi
Introduction

Presidential Regulation Number 72 of 2021 concerning the acceleration of stunting reduction will be two years old in August 2023. Various national strategies to accelerate stunting reduction implemented through the National Action Plan for Accelerating Stunting Reduction (RAN PASTI) after the issuance of the presidential regulation are recognized to have shown encouraging results. This is indicated by the decrease in the stunting prevalence rate in Indonesia from 24.4 in 2021 to 21.6 in 2022.

Bekasi Regency, as one of the capital's buffer districts, together with Bekasi City and Depok City, should be a good example in efforts to accelerate stunting reduction. Based on the Indonesian Nutrition Status Survey, the stunting rate in Bekasi district in 2022 was 17.8 percent, much higher than that of Bekasi City (6.0 percent) and Depok City (12.6 percent). This figure is also still above the 14 percent target as mandated by the presidential regulation.

The most crucial interventions and various efforts to prevent stunting are in the first 1000 days of life (HPK). To better control the risk factors for stunting early, BKKBN, as the coordinator of the acceleration of stunting reduction, takes an upstream approach, namely prospective brides. Until now, the number of brides-to-be examined in Bekasi Regency is only 5,557 out of 13,127 brides-to-be registered at the KUA or other religious institutions. In addition to brides-to-be, pregnant women, nursing mothers, and families with infants and toddlers are targeted for intervention. The consumption of blood supplement tablets among adolescents and pregnant women is very important. Until now, pregnant women who take blood-added tablets are only about 96 percent or only 79,869 mothers out of 82,661 so this figure needs to be increased to 100 percent. Research conducted by Astuti, Putri, and Lisca (2023) stated that health checks and the provision of blood-added tablets have a significant effect on stunting by improving the reproductive quality of brides.

Although the government has formed the Stunting Reduction Acceleration Team up to the village level, efforts to reduce stunting will depend on the role of the family because the family is the first and main entry point for stunting. This research wants to know the socio-economic role of the family in efforts to prevent and accelerate stunting reduction. How does the health examination of prospective brides as a form of family concern in guarding the quality of PUS affect the incidence of stunting in the family, does the provision of vitamin A to under-fives also have an influence on stunting cases and the intake of blood supplement tablets in pregnant women affect the incidence of stunting in the babies they give birth to. Based on research by Setiawan et al. (2023), suggested that giving blood supplement pills to pregnant women has a significant effect on stunting. Therefore, a study is needed to prove or validate previous research related to stunting. In addition, another goal is to see an overview of the stunting situation in Bekasi district. There has not been much research on the role of the family in stunting prevention efforts, especially research with a district-level locus. The use of data sourced from direct measurement and integrated reporting conducted by POSYANDU (Pos Pelayanan Terpadu) and PUSKESMAS (Pusat Kesehatan Masyarakat) is also a novelty in this study.
Methods

Participants
This study uses a quantitative approach in analyzing the influence of socio-economic variables on the incidence of stunting in Bekasi Regency. The dependent variable used in this study is the percentage of stunting incidence in Bekasi District, West Java. While the independent variables used are the growth in the number of families at risk of stunting, prospective couples of childbearing age (PUS), prospective brides who access health services, the percentage of toddlers who are given Vitamin A intake and the percentage of pregnant women who are given blood enhancement pills.

The data used in this study is secondary data with a time period of 2022 from 22 sub-districts in Bekasi District, West Java. The percentage of stunting incidence, growth in the number of families at risk of stunting, the number of prospective couples of childbearing age (PUS), the percentage of prospective brides accessing health services, the percentage of toddlers given Vitamin A intake and the percentage of pregnant women given blood-boosting pills. The data was obtained from publications published by the National Population and Family Planning Agency (BKKBN) and the Ministry of Health.

Measurement
In this study, the variable prevalence of stunting with a percent unit, the variable stunting risk family growth (KS) with a percent unit, the variable of prospective couples of childbearing age (CPUS) with a person unit, the variable of prospective brides (Catin) with a percent unit, the variable of toddlers given vitamin A (BVA) with a percent unit, and the variable of pregnant women given blood supplement pills (IHTD) with a percent unit.

Analysis
Data analysis used in this study was descriptive and inferential analysis. The analysis was conducted using SPSS version 24. To determine the distribution of answers and general description of the data, descriptive analysis was used. Meanwhile, the inferential analysis used is multiple linear regression. The variables used in this study will be formed or formulated into a regression model. It is expected that with the specification of this model, the influence of the independent variables (family growth at risk of stunting, the number of prospective couples of childbearing age, the percentage of prospective brides accessing health services, the percentage of toddlers given Vitamin A intake and the percentage of pregnant women given blood enhancement pills) on the percentage of stunting in Bekasi Regency. assuming that the percentage of stunting between sub-districts in Bekasi Regency is mutually independent (no spatial linkage).

Findings

Stunting Prevalence
Bekasi Regency is an area that is located around or is a buffer for the capital city of DKI Jakarta. As a buffer for the capital city, Bekasi Regency is in the spotlight and concentration not only of the local government but also of the central government. Because of this, Bekasi Regency has an important role in all problems, both social
problems and economic problems. In addition, problems in the health sector are also a concentration of the government, especially for problems related to nutrition to stunting.

Stunting is one of the many nutritional problems that Indonesia still has to face. High prevalence is the main problem of stunting compared to other nutritional problems such as malnutrition, fat, and thin (Ministry of Health, 2022). Stunting also occurs in the Bekasi district area, judging from its location, Bekasi district is one of the buffer areas for the capital city of DKI Jakarta, in addition to Bekasi City and Depok City. The following is a description of stunting that occurs in the three buffer areas of the capital city of DKI Jakarta.

![Stunting Prevalence](image)

**Figure 1. Prevalence of stunting in 3 districts/cities**

As a buffer of the capital city of DKI Jakarta, Bekasi district has a higher prevalence of stunting than the other two buffer cities, namely Bekasi City and Depok City. Based on the graph above, it is known that in 2019 Bekasi district had a stunting prevalence of 20.2 percent, 0.6 percent higher than Bekasi city, and 3.4 percent higher than Depok city. Then the prevalence of Bekasi Regency increased to 21.5 percent in 2021, when its two capital city buffers had a downward trend in prevalence, namely 13.8 percent for Bekasi city, and 12.3 percent for Depok city. Then in 2022, the Bekasi district prevalence rate fell back to 17.8 percent, but was still the highest compared to Bekasi city which had a prevalence rate of 6 percent, and Depok city which had a prevalence rate of 12.6 percent.
According to the National Population and Family Planning Agency (BKKBN), the number of stunting toddlers in Bekasi district is 9,354. Where the number of stunting incidents is spread across all sub-districts in Bekasi district. The highest number of toddlers experiencing stunting is in Setu sub-district with 1,751 stunted toddlers out of a total of 15,711 toddlers. The Setu area is an area in Bekasi Regency which has a population density of 3,027 people / km² with a population growth of 4.27 percent supported by 15 health facilities. Then for the sub-district that has the lowest stunting is Tambelang with a total of 2 stunting toddlers out of a total of 3,353 toddlers. Tambelang sub-district is an area in Bekasi Regency which has a population density of 1,103 people / km² with a population growth of 1.31 percent supported by 7 health facilities. Meanwhile, there is only one sub-district where there is no stunting or 0 toddlers affected by stunting, namely in the Cabangbungin sub-district.

Analysis of Stunting Risk Family Growth, Prospective Couples of Childbearing Age, Prospective Brides, Toddlers given Vitamin A, and Pregnant Women given Blood Enhancement Pills

Inferential analysis in this study used multiple linear regression analysis. Theoretically, this inferential analysis has the aim of seeing how the influence and direction of influence of each independent variable on the dependent variable. In addition, to see how much influence the independent variables (simultaneously) have on
the dependent variable. To carry out the right estimation model, there are several steps that must be taken, namely entering variables into the model and testing the classical assumptions of the equation. Based on the results of the classical assumption test that has been carried out, it can be concluded that the multiple linear regression model in the model has met the classical assumptions. Table 1 shows that the results of data processing with parameter estimates are as follows.

Based on Table 1, the test results above show that the probabilities value of the variable growth in the number of stunting families (KS) is 0.000. This value is smaller than the value (α = 5%), so the decision from the t-test is to reject the initial hypothesis, which means that the variable growth in the number of stunting families has a significant effect on the prevalence of stunting in Bekasi district in 2022, assuming other variables are constant. The intercept of the growth in the number of stunting families is 0.762, which means that every increase in the growth in the number of stunting families by one percent will increase the prevalence of stunting by 0.762 percent.

The test results above show that the probabilities value of the prospective childbearing age partner (CPUS) variable is 0.010. This value is smaller than the value (α = 5%), so the decision from the t-test is to reject the initial hypothesis, which means that the prospective childbearing age partner variable has a significant effect on the prevalence of stunting in Bekasi district in 2022, assuming other variables are constant. The intercept of the growth in the number of stunting families is -0.002, which means that every increase in prospective childbearing age couples by one person will reduce the prevalence of stunting by 0.002 percent.

Table 1 show that the probabilities value of the variable of prospective brides accessing health services is 0.002. The probabilities are smaller than the value (α = 5%), so the t-test decision is to reject the initial hypothesis, which means that the variable of prospective brides accessing health services has a significant effect on the prevalence of stunting in Bekasi district in 2022, assuming other variables are constant. The intercept of the growth in the number of stunting families is -0.318, which means that every increase in prospective brides accessing health services by one percent will reduce the prevalence of stunting by 0.318 percent.

The probabilities value of the variable of prospective brides accessing health services is 0.972. The probability value is greater than the value (α = 5%), so the t-test decision is to fail to reject the initial hypothesis, which means that the variable percentage of toddlers given vitamin A intake does not have a significant effect on the prevalence of stunting in Bekasi district in 2022. The intercept value of the percentage of toddlers given vitamin A intake is 0.000, which means that every increase in the percentage of toddlers given vitamin A intake by one percent will reduce the prevalence of stunting by 0 percent. In other words, it has very little effect on the prevalence of stunting.
Table 1. Analysis of stunting risk family growth, prospective couples of childbearing age, prospective brides, toddlers given vitamin A, and pregnant women given blood enhancement pills

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constanta</td>
<td>4.260</td>
<td>2.997</td>
<td>0.009</td>
</tr>
<tr>
<td>Stunting Risk Family Growth (KS)</td>
<td>0.762</td>
<td>8.184</td>
<td>0.000*</td>
</tr>
<tr>
<td>Prospective Couples of Childbearing Age (CPUS)</td>
<td>-0.002</td>
<td>-2.936</td>
<td>0.010*</td>
</tr>
<tr>
<td>Prospective Brides (Catin)</td>
<td>-0.318</td>
<td>-3.629</td>
<td>0.002*</td>
</tr>
<tr>
<td>Toddlers given Vitamin A (BVA)</td>
<td>0.000</td>
<td>0.035</td>
<td>0.972</td>
</tr>
<tr>
<td>Pregnant Women given Blood Enhancement Pills (IHTD)</td>
<td>0.000</td>
<td>0.059</td>
<td>0.954</td>
</tr>
</tbody>
</table>

Summary Statistics

Coefficient of Determination \( (R^2) \) 0.926  F-test  120.83

Adjusted R-Squared \( (R^2_{adj}) \) 0.921  p-value (F-test)  0.000

Note: (*) significant on \( p<0.05 \)

The results of the data processing in Table 1 show that the probability value of the variable percentage of pregnant women given blood enhancement pills is 0.954. The probability value is greater than the value \( (\alpha = 5\%) \), so the t-test decision is to fail to reject the initial hypothesis, which means that the variable percentage of pregnant women given blood enhancement pills does not have a significant effect on the prevalence of stunting in Bekasi district in 2022. The intercept value of the percentage of pregnant women given blood enhancement pills is 0.000, which means that every increase in the percentage of toddlers given vitamin A intake by one percent will reduce the prevalence of stunting by 0 percent. In other words, it has very little effect on the prevalence of stunting.

Based on the table of data processing results above, it can be seen that the adjusted R2 value in the model is 0.921, so it can be said that the coefficient of determination in the model is high because it is close to the value of 1. The value of R2adj or the coefficient of determination when multiplied by one hundred percent means that 92.10 percent of the variation in the dependent variable can be explained very well by the independent variables using the model. Meanwhile, as much as 7.90 percent of the variation in the dependent variable is explained by other independent variables outside the model. In other words, in this model, the variable risk of stunting families, prospective childbearing age couples, prospective brides who access health facilities, toddlers who are given vitamin A intake, and pregnant women who get blood supplement pills can explain the stunting variable by 92.10 percent.

Then the results of the simultaneous test (F test) on the model, it can be seen that the p-value has a value of 0.0000. Based on these results, it can be interpreted that the p-value of the F test is smaller than the significance level \( (\alpha) \) of 5%, therefore, a decision to reject the null hypothesis is obtained, in other words, it can be concluded that together the independent variables have a significant effect on the dependent variable in the model.

The next step after testing the significance of the model and testing the independent variables simultaneously on the dependent variable is test of the partial variable. The decision in the partial test can be made by looking at the probability value of each independent variable and then comparing it with the significance level \( (\alpha = 0.05) \). Suppose the probability value of the independent variable has a value less than the significance level. In that case, the independent variable can be said to have a
significant effect on the dependent variable. As can be seen in Table 2, the results show that out of five variables, three independent variables partially have a significant effect on the dependent variable. In other words, the variable stunting risk family growth (KS), the variable prospective couples of childbearing age (CPUS), the variable prospective brides (Catin) partially has a significant effect on variable Y (stunting prevalence in Bekasi district in the period 2022). Meanwhile, the variable of toddlers given Vitamin A intake (BVA) and the percentage of pregnant women given blood enhancement pills (IHTD) have no significant effect on the percentage of stunting in Bekasi Regency.

Discussion

The analysis used in this research is descriptive analysis and inferential analysis. The descriptive analysis describes and explains data characteristics from stunting in Bekasi Regency in 2022. The results of this research show that the prevalence of stunting in 2021 in Bekasi Regency has increased. This is due to the COVID-19 pandemic, which has resulted in many stunting prevention programs not running. This aligns with research conducted by Sulistyawati and Widarini (2022), which states that stunting continues to increase due to the ongoing COVID-19 pandemic. Apart from that, Efrizal (2020) revealed that the COVID-19 pandemic impacted stunting in Bangka Belitung province. The two studies above prove that the COVID-19 pandemic has a significant influence on stunting, so it can be said that the COVID-19 pandemic caused the increase in stunting in Bekasi Regency.

The main finding in this study is that the growth in the number of families at risk of stunting, the number of prospective childbearing age couples, and the percentage of prospective brides accessing health services have a significant influence on stunting. This result is in line with previous research, which shows that childbearing-age couples have a significant influence on stunting (Hanifah & Stefani, 2022). Not only that, Permatasari et al. (2022) found that families at risk of stunting and easy access to health facilities influence stunting. Easy access to health facilities will make it easier for prospective brides and newly married brides to consult regarding nutritional problems, especially to avoid stunting problems, so that the possibility of the risk of prospective brides or new brides solving stunting problems will be smaller.

The results of the research show that families at risk of stunting have a much greater influence on being stunted than ordinary families. Families at risk of stunting are certain to be stunted because some basic things, such as knowledge about the family, nutrition, and how to overcome pregnancy literacy, is still very minimal, so families at risk of stunting have a much greater chance of experiencing stunting than ordinary families. These findings align with research conducted by Saimu, Nastia, and Mayunita (2023), which states that families at risk of stunting have a greater chance of being stunted than ordinary families. Lack of intake, as well as a lack of understanding related to stunting, makes these families more likely to get stunted. Assistance and socialization are needed by families at risk of stunting so that these families can understand how important nutrition is for children to avoid stunting. Providing literacy about good nutrition, socialization with children, treatment of pregnancy, and clean and healthy living behaviors will certainly reduce the family's risk of experiencing stunting. This statement is emphasized by research conducted by Hidayat and Ismawati (2019), stating
that supplementary feeding and a clean and healthy lifestyle are efforts to prevent and reduce the incidence of stunting in the family environment.

The findings of this study indicate that prospective childbearing age couples have a significant influence on stunting; interestingly, the more prospective childbearing age couples, the lower the stunting. This can happen if the prospective childbearing-age couples have understood how to avoid the dangers of stunting. In other words, prospective couples of childbearing age must or have been educated about the dangers of stunting, understand how to avoid the dangers of stunting, and can apply clean and healthy living patterns before entering into marriage. In addition, prospective childbearing-age couples who already understand about nutrition, especially at the beginning of their marital life, have a lower risk of stunting. Utami (2019), revealed that the understanding and attitudes of couples of childbearing age, especially about nutrition in the first 1000 days of life, have a major effect in reducing the risk of stunting. Families who understand the risks of stunting and also know how important nutrition is will certainly further reduce the family's risk of being affected by the problem of stunting. Therefore, health facilities and health cadres, especially in the family sector, must focus more on providing socialization and mobilizing couples of childbearing age to understand nutritional problems and the problem of stunting. Thus, the risk of stunting can be minimized and even eliminated.

The next finding in this study is that brides-to-be (catin) who access health services have a significant influence on the prevalence of stunting. This will certainly have an impact because brides-to-be who access health services will be better informed by conducting early examinations regarding any health problems that may arise. In addition, the earlier health problems can be detected, and the easier the health problems will be to treat, so that health problems that arise after marriage are minimal to occur so that the problem of malnutrition and even stunting can be reduced risk. This is also reinforced by research conducted by Nabila (2023); in her research, it was found that prospective brides who access health facilities early can reduce the risk of the family experiencing stunting. In her research, it was added that early examination of health can reduce the risk of the family experiencing health problems; even health problems that will arise can be avoided and cured before the health problem becomes worse. Arsyad, Setiawaty and Yusnidar (2012). Stated a similar thing in his research, which stated that there were differences in the first 1000 days of marriage between prospective brides who accessed health facilities and prospective brides who did not access health facilities; they stated that prospective brides who accessed health facilities had more and extensive knowledge in dealing with health problems and knew what things should be done and not done by newlyweds, especially in the first 1000 days of marriage. With the same results from the two researchers above, it can be stated that indeed, brides-to-be who access health services have good knowledge about health so that the problem of stunting can be minimized. In other words, brides-to-be who access health facilities have a significant influence on the prevalence of stunting, especially in Bekasi district.

The next is that the giving of vitamin A to toddlers does not have a significant effect on the incidence of stunting. This is confirmed by research conducted by Putri, Irawan and Mukono (2021), which states that there is no significant relationship between vitamin A supplementation and the incidence of stunting. Vitamin A supplementation is good for toddlers, but vitamin A supplementation cannot meet the needs of children to avoid stunting, such as research conducted by Wati (2021), which states that providing protein, calcium, and zinc intake has a significant effect on the
incidence of stunting. Thus, providing other intakes, such as protein, calcium, and zinc, has a more significant effect than vitamin A in preventing and reducing stunting. Based on this, the provision of protein, calcium, and zinc must be prioritized and prioritized, especially in posyandu and puskesmas, both by health workers and family cadres.

There are interesting things found in this study, namely that the provision of supplementary blood intake to mothers does not have a significant effect on the incidence of stunting that occurs in Bekasi district. Please note, statistically, it can be said to be insignificant, but basically, the provision of added blood intake to mothers influences the problem of stunting. If a mother experiences anemia, it is inevitable that her child will be more malnourished and also stunted. As stated by Anita (2022), taking blood supplement tablets can improve the health of reproductive organs so that the incidence of stunting can be reduced, but in order for the administration of blood supplement pills to be more effective in suppressing the incidence of stunting, there needs to be compliance for couples of childbearing age to consume blood supplement pills regularly. The effectiveness of preventing stunting by taking routine consumption of blood supplement pills is determined by how routine and obedient couples of childbearing age are in consuming blood supplement pills. This is supported by research conducted by Ningtyias, Quraini, and Rohmawati (2020), which states that there is an effect between pregnant women who take blood enhancement pills and pregnant women who do not take blood enhancement pills. As explained above, the insignificance of giving blood supplement pills in reducing stunting is due to the ineffective consumption by mothers in taking blood supplement pills. Anita (2022) added that pregnant women who take blood supplement pills irregularly still have the risk of being stunted, like mothers who don't consume blood supplements.

This research has limitations, especially in the field of data provision, especially for data at the sub-district level. Besides, the availability of data related to stunting rates at the sub-district level still needs to be found. This is a major obstacle in the formation of multiple linear regression models. Then, the formation of family variables is still very small, so it is hoped that further research will involve more family variables, especially in the field of health access, such as the number of toddlers and mothers who visit or access posyandu. This study has also not been able to map exactly how stunting conditions are mapped based on topography, so it can be said that this study does not see spatial effects and still assumes that all sub-district areas in Bekasi district have the same topography.

Conclusion and Recommendation

Conclusion

Stunting is a social problem that is still a homework assignment in Indonesia, especially in the Bekasi district. Based on the results of the above research, stunting in Bekasi district in 2022 is greater at 17.8 percent, compared to Depok City and Bekasi City, which have stunting prevalence values of 12.6 percent and 6 percent. In addition, at the sub-district level in Bekasi district, the Setu sub-district has a problem of 1,751 stunted toddlers. The sub-district that has the lowest stunting is the Tambelang sub-district, with a total of 2 stunted toddlers. Meanwhile, there is only one sub-district where there is no stunting or 0 toddlers affected by stunting, namely in the Cabangbungin sub-district. Then, in the modeling above, there are several factors that
influence the high incidence of stunting in Bekasi district. Of the five variables modeled, three of them have a significant influence on the prevalence of stunting in the Bekasi district, namely the growth of families at risk of stunting, the number of prospective childbearing age couples (PUS), and the percentage of prospective brides who access health services. The other two variables, namely the percentage of toddlers who were given Vitamin A intake and the percentage of pregnant women who were given blood enhancement pills, did not have a significant effect on stunting. Based on the modeling results above, it can be said that the role of family socioeconomic variables that have a significant influence is the risk of stunting families, prospective childbearing age couples, and prospective brides who access health facilities. Reducing stunting can be done by focusing on controlling the three variables that have a significant effect on stunting.

**Recommendation**

Based on the above research, several variables were found to have a significant effect on stunting, so it is necessary to control these variables. Policymakers, especially in the family sector, can accommodate by paying attention to these three variables. Efforts that can be made such as conducting early understanding of stunting to families at risk of stunting so that the family gets out of the cluster of families at risk of stunting, then providing a basic understanding of nutrition and stunting to couples of childbearing age, and focusing on nutrition and vitamins for very short toddlers. In addition, from the community side, we must provide each other with an understanding of bad stunting and what kind of mechanism so that families can avoid the risk of stunting. Then, further researchers can build a model that includes more variables of the role of the family in the health sector.

**References**


