


## Factors That Influence The Incidence Of Stunting In The Working Area Of Petang II Health Center, Badung Regency

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| Article Info   | ABSTRACT   |
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| <b>Keywords:</b><br>Stunting,<br>Toddler,<br>Factors,<br>Petang.   | Stunting in childhood has a negative impact, namely inhibiting growth, cognitive and motor development, thereby creating a risk of metabolic disorders in adulthood. One of the factors guaranteeing family food security that researchers need to study is that Belok and Pelaga villages are agricultural areas that should produce abundant food. To date, no research has been conducted regarding the factors that influence stunting in the Petang II Community Health Center working area, Badung Regency. The factors looked for include history of LBW, immunization status, exclusive breastfeeding, history of infectious diseases, mother's education level and family food security. This research is a quantitative analytical research with a case control design. This study used a sample of 31 stunted toddlers as the case group, and 31 well-nourished toddlers as the control group with a ratio of 1:1. The results showed that the variables of maternal education level ( $p=0.001$ ) and family food security ( $p=0.000$ ) were significant in the incidence of stunting, while the variables of history of LBW ( $p=0.394$ ), immunization status ( $p=0.078$ ), exclusive breastfeeding ( $p=0.088$ ), history of infectious disease ( $p=0.158$ ) was not significant in the incidence of stunting. |
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### INTRODUCTION

The health impacts of stunting problems include failure to grow, cognitive and motor obstacles, stunting sufferers are also at risk of experiencing metabolic disorders as adults. From an economic perspective, stunting sufferers have the potential to cause annual losses of 2-3% of GDP (Kemenkes RI, 2022). In the international realm, in 2016 WHO issued a Conceptual Framework or conceptual framework for stunting. This conceptual framework highlights the role of complementary feeding in layers of contextual factors and its consequences in the short and long term. Contextual factors consist of political economy, health and health care systems, education, community culture, agriculture, food and water systems, and sanitation and the environment (WHO, 2017). In Indonesia, the strategy to combat stunting is reflected in the Presidential Regulation of the Republic of Indonesia No. 72 of 2021 concerning the Acceleration of Reducing Stunting, namely specific interventions

and sensitive interventions that are implemented requires multi-sector commitment from central, regional and village levels (Presidential Regulation, 2021)..

Based on research into the causes of stunting in children, nutrition, parenting patterns, maternal knowledge, economic status and low birth weight are the causes (Dwi Yanti et al., 2020). Wulandari's research also shows that there is a strong link between the incidence of stunting and low parental education, a history of risky LBW, low parental income, and inappropriate feeding patterns (Wulandari & Fitriana Kurniawati, 2023). Noorhasanah's research in 2020 showed that there was a relationship between a history of exclusive breastfeeding, completeness of immunization, provision of MPASI, and a history of infectious disease with the incidence of stunting (Noorhasanah et al., 2020).

The stunting rate in Badung has exceeded the central stunting reduction target of 8% and the provincial target of 7%. However, in 2023, it is hoped that stunting will decrease in Badung Regency to 6.0% (Setda Badung Regency, 2023). Based on recapitulation data of stunting villages in Badung Regency, the highest number of stunting cases were in the Petang II Health Center working area, namely Belok Village and Pelaga Village with 31 cases (Diskes Badung, 2022). Adapted from the conceptual framework for the causes of stunting issued by WHO, researchers wanted to examine the variables of LBW history, immunization status, exclusive breastfeeding, infectious diseases, mother's education level and family food security. Considering that Belok and Pelaga Villages are agricultural areas that should produce abundant food, food security factors are interesting to research. Until now there has been no published research regarding the factors that influence the incidence of stunting in the Petang II Community Health Center working area. In line with the National Master Research Plan (RIRN) 2017-2045 where research is included in 9 national research priority focus areas and the results of this research are expected to become basic data in efforts to accelerate stunting reduction to focus more promotive, preventive and curative efforts on variables that are significant to stunting incident.

## METHODS

This research is a quantitative analytical study with a case control design where researchers want to see the differences in each risk factor for stunting in the case group and control group. Carried out in the Petang II Community Health Center working area which includes Belok Village and Pelaga Village from September 2023 to February 2024. This research used a sample of 31 stunted toddlers as a case group and 31 well-nourished toddlers who met the following inclusion criteria: Toddlers stunting who resides / Children's Identity Card (KIA) in the Petang Community Health Center working area and is willing to be a research respondent. The sampling technique was purposive sampling using the Household Food Insecurity Access Scale (HFIAS) food insecurity scale questionnaire with 9 questions. The data analysis used is Univariate and Bivariate. A data normality test was carried out and then the non-parametric Mann-Whitney Test was carried out to determine the difference in medians between the case group and the control group..

## RESULTS AND DISCUSSION

The results of the study were intended to determine the differences between the case and control groups regarding each risk factor for stunting. The statistical test used is the non-parametric Mann-Whitney Test. The results of the Mann-Whitney test can be seen in the table below:

**Table 1.** Results of analysis of maternal education level between stunted toddlers and healthy toddlers

| Group            | N  | Mean Rank | Z      | P-Value |
|------------------|----|-----------|--------|---------|
| Stunted Toddlers | 31 | 24.00     | -3.420 | 0.001   |
| Healthy toddler  | 31 | 39.00     |        |         |

Based on the results of the Mann-Whitney test in table 1, a significance value of 0.001 was obtained, which proves that there is a difference in the level of maternal education between stunted toddlers and healthy toddlers. The average value (Mean Rank) of the education level of mothers of stunted toddlers is 24.00, which is smaller or has a lower education level than the average value of education level of mothers of healthy toddlers with a greater value, namely 39.00. This makes it clear that the mother's education level is related to the incidence of stunting.

Previous research shows that children born to women with less education are at risk of malnutrition, which manifests as undernutrition and stunting (Ernawati, 2020). Semarang research shows that there is a relationship between the mother's level of knowledge about nutrition and the level of protein consumption in children aged 2-5 years. The higher the mother's education and the better the mother's knowledge about nutrition, the higher the child's level of protein consumption (Abuya et al., 2012). Housewives who are educated will tend to choose food that is better in quality and quantity, compared to mothers with less education (Meryana, 2014). Rahayu's research results also show that a low level of education has a 5.1 times greater risk of having a stunted child. Maternal education has an important role in the incidence of stunting (Rahayu & Khairiyanti, 2014)

**Table 2.** Results of Analysis of LBW History in Stunting Toddlers and Healthy Toddlers

| Group            | N  | Mean Rank | Z     | P-Value |
|------------------|----|-----------|-------|---------|
| Stunted Toddlers | 31 | 32.50     | -.852 | 0.394   |
| Healthy toddler  | 31 | 30.50     |       |         |

The results of the statistical test have a p-value of 0.394 which proves that there is no difference in the history of LBW between stunted toddlers and healthy toddlers in the incidence of stunting. The average value of the Mean Rank shows that the history of LBW for stunted toddlers is 32.50 and the average value for the history of LBW for healthy toddlers is 30.50. Univariate results showed that in the case and control groups the dominant percentage had no history of LBW, namely 87.1% in the case group and 93.3% in the control group. These data make it clear that the risk factor for a history of LBW does not significantly influence the incidence of stunting in the Petang II Community Health Center working area.

Previous research shows that there is no relationship between a history of LBW and the incidence of stunting in Ubud Gianyar District with a stunting rate of 25% (Mahayanti et al., 2020). Different results were obtained in Utami's research. Where LBW is a risk factor or predictor factor for the incidence of stunting in Sukadadi Village, Lampung, the risk of stunting occurring is 2,194 times greater in toddlers with a history of LBW compared to toddlers with normal birth weight (Utami & Widianingsih, 2023)

**Table 3.** Results of Exclusive Breastfeeding History Analysis for Stunted Toddlers and Healthy Toddlers

| Group            | N  | Mean Rank | Z      | P-Value |
|------------------|----|-----------|--------|---------|
| Stunted Toddlers | 31 | 29.50     | -1.704 | 0.088   |
| Healthy toddler  | 31 | 33.50     |        |         |

Table 3 shows that the average value for the history of exclusive breastfeeding for stunted toddlers is 29.50 and the average value for the history of exclusive breastfeeding for healthy toddlers is 33.50. The statistical test results obtained a p-value of 0.88, which proves that there is no difference in the history of exclusive breastfeeding between stunted toddlers and healthy toddlers. It can be concluded that the risk factor of a history of exclusive breastfeeding is not significantly related to the incidence of stunting in the Petang II Community Health Center working area. In line with previous research, the results showed that there was no significant relationship between exclusive breastfeeding and the incidence of stunting. Toddlers who are exclusively breastfed have the potential to experience stunting. It is possible that there are other factors that have a greater influence on the incidence of stunting than exclusive breastfeeding (Novayanti et al., 2021). However, exclusive breastfeeding as nutrition with the most suitable composition to meet the baby's needs in the first six months of life is an important factor that must always be taken into account to combat stunting.

**Table 4.** Results of Analysis of Immunization Status in Stunted Toddlers and Healthy Toddlers

| Group            | N  | Mean Rank | Z      | P-Value |
|------------------|----|-----------|--------|---------|
| Stunted Toddlers | 31 | 33.00     | -1.761 | 0.078   |
| Healthy toddler  | 31 | 30.00     |        |         |

Based on table 4, the average value of immunization status for stunted toddlers is 33.00 and the average value of immunization status for healthy toddlers is 30.00. The statistical test results obtained a p-value of 0.78, which proves that there is no difference in immunization status between stunted toddlers and healthy toddlers. Where the risk factor for basic immunization status is not related to the incidence of stunting in the Petang II Community Health Center working area. Previous similar research was also found in previous research which examined the influence of basic immunization status on the incidence of stunting with the result that incomplete basic immunization status did not increase the incidence of stunting through developmental disorders in toddlers at the Putat Jaya Surabaya Community Health Center.

Complete basic immunizations are given to babies < 12 months. Complete routine immunization consists of basic immunizations, namely HB0, BCG, polio, DPT-HB-HiB, and MR, immunizations are given according to the child's age (Kemenkes RI, 2020). Based on univariate data, the results of this study show that the stunting toddler group has a complete immunization status of 90.3%. The healthy toddler group has a complete immunization status of 100%. This data shows the serious performance and commitment of health workers, especially in the Petang II Community Health Center work area. In the Strategic Target Action Plan and Program for the Badung District Health Service in 2023, the target for complete basic immunization for babies is 96.5% (Diskes Badung, 2023). In the performance report, the Directorate of Immunization Management has achieved or exceeded the IKK Achievement target of the Director of Immunization Management in 2022 with the percentage of babies aged 0 to 11 months who received complete basic immunization reaching 92.7% of the target of 90% with a performance of 102.9% (Kemenkes RI , 2022).

**Table 5.** Results of Analysis of Infectious Disease History in Stunted Toddlers and Healthy Toddlers

| Group            | N  | Mean Rank | Z      | P-Value |
|------------------|----|-----------|--------|---------|
| Stunted Toddlers | 31 | 34.00     | -1.412 | 0.158   |
| Healthy toddler  | 31 | 29.00     |        |         |

Based on table 5, the average value for the history of infectious diseases in stunted toddlers is 34.00 and the average value for the history of infectious diseases for healthy toddlers is 29.00. The statistical test results obtained a p-value of 0.158, which proves that there is no difference in the history of infectious diseases in stunted toddlers and healthy toddlers. It can be said that a history of infectious diseases is not significantly related to stunting incidents that occur in the Petang II Community Health Center work area.

The results of previous research showed different things which wanted to prove the existence of a relationship between a history of ARI and the incidence of stunting in toddlers. Toddlers who have a history of ARI have a 3.4 times chance of suffering from stunting compared to toddlers who have no history of ARI, (Eldrian et al., 2023) Another study conducted in Majalengka Regency stated that toddlers who had a history of ARI had 3 times the chance are more likely to experience stunting than those who do not have a history of ARI (Himawati & Fitria, 2020). Infectious diseases are a direct factor causing stunting. Therefore, good treatment of children suffering from infectious diseases can help improve nutrition by paying attention to food intake that suits the child's needs. Infectious diseases frequently suffered by toddlers include worms, ARI, diarrhea and other diseases which are closely related to the quality status of basic health services, especially immunization, the quality of a clean living environment and healthy behavior (Natalia & Evitasari, 2020).

**Table 6** Results of Analysis of Family Food Security between Stunted Toddlers and Healthy Toddlers

| Group            | N  | Mean Rank | Z      | P-Value |
|------------------|----|-----------|--------|---------|
| Stunted Toddlers | 31 | 47.00     | -7.364 | 0.000   |
| Healthy toddler  | 31 | 16.00     |        |         |

Based on table 6, the average value of family food security for stunted toddlers is 24.00, which is smaller or has a lower education level than the average value of education level for mothers of healthy toddlers with a greater value, namely 39.00. The results of statistical tests obtained a p-value. 0.000 which proves that there is a difference in family food security between stunted toddlers and healthy toddlers. It can be said that the risk factor for family food security is significant in the incidence of stunting that occurs in the Petang II Community Health Center working area.

Similar research related to family food security and the incidence of stunting shows that there is a significant relationship between household food security and stunting in toddlers. Most toddlers with very short and stunted nutritional status have their household level food security status in the moderate food insecurity category. Meanwhile, toddlers with good or normal nutritional status have food security status (Islamiah et al., 2022). Food security and nutrition are a unity where nutrition is a very important element in improving the quality of life of the population. The prevalence of stunting in Indonesia according to 2021 SSGI data shows 24.4%, which is still high from the government's target of 14%. by paying attention to the adequacy of family food needs through coping strategy actions and paying attention to household expenses by placing greater emphasis on fulfilling the nutrition of children under five and increasing household food security by providing training and business skills in diversifying catch products and productive businesses as an effort to increase family food security (Islamiah et al. , 2022).

## CONCLUSION

Based on the data obtained and from the results of the data analysis that has been carried out, the following conclusions are obtained: There is a difference in the level of maternal education between stunted toddlers and healthy toddlers with a p-value of 0.001. There is no difference in the history of LBW between stunted toddlers and healthy toddlers with a p-value of 0.394, . There was no difference in the history of exclusive breastfeeding between stunted toddlers and healthy toddlers with a p-value of 0.88. There is no difference in immunization status between stunting toddlers and healthy toddlers with a p-value of 0.078. There is no difference in the history of infectious diseases in stunting toddlers and healthy toddlers with a p-value of 0.158. p-value 0.000.

## REFERENCE

- Abuya, B., Ciera, J., & Murage, E. (2012). Effect od Mother's education on Child's Nutritional Status in the Slum of Nairobi. *BMC Pediatrics*, *12*(1), 1–10
- Dinas Kesehatan Kabupaten Badung. (2023). *Laporan Capaian Kinerja Triwulan II*.
- Diskes Badung. (2022). *Desa Stunting Kabupaten Badung 2022*.
- Dwi Yanti, N., Betriana, F., & Rahmayunia Kartika, I. (2020). Faktor Penyebab Stunting Pada Anak: Tinjauan Literatur. *Real in Nursing Jurnal (RNJ)*, *3*(1), 1–11.  
<https://ojs.fdk.ac.id/index.php/Nursing/index>

- Eldrian, F., Karinda, M., Setianto, R., Dewi, B. A., & Gusmira, Y. H. (2023). Hubungan Riwayat Penyakit Infeksi Dengan Kejadian Stunting Pada Balita di Puskesmas Cipadung Kota Bandung . *Jurnal Manajemen Kesehatan Yayasan RS.Dr.Soetomo* , 9(1).
- Ernawati, A. (2020). *Gambaran Penyebab Balita Stunting di Desa Lokus Stunting Kabupaten Pati Regency* (Vol. 16 ).
- Himawati, E. H., & Fitria, L. (2020). Hubungan Infeksi Saluran Pernapasan Atas dengan Kejadian Stunting pada Anak Usia di Bawah 5 Tahun di Sampang. *Jurnal Kesehatan Masyarakat Indonesia*, 15(1), 1–5.
- Irmawati, S. (2017). Kualitas Pelayanan Kesehatan di Puskesmas Sangurara Kecamatan Tatanga Kota Palu. *Jurnal Katalogis*, 188–197.
- Islamiah, W. E., Nadhiroh, S. R., Putri, E. B. P., Farapti, Christiwan, C. A., & Prafena, P. K. (2022). Hubungan Ketahanan Pangan dengan Kejadian Stunting pada Balita dari Keluarga Nelayan. *Media Gizi Indonesia (National Nutrition Journal)*, 1, 83–89.
- Kemendes RI. (2022). *BUKU SAKU Hasil Survei Status Gizi Indonesia (SSGI) 2022*. Kemendes RI. (2022). *Mengenal Apa Itu Stunting*. [https://yankes.kemkes.go.id/view\\_artikel/1388/mengenal-apa-itu-stunting](https://yankes.kemkes.go.id/view_artikel/1388/mengenal-apa-itu-stunting)
- Kemendes RI. (2021). Posyandu dan Puskesmas Garda Depan Pengendalian Stunting.
- Noorhasanah, E., Isna Tauhidah, N., & Chalida Putri, M. (2020). Faktor-Faktor yang Berhubungan dengan Kejadian Stunting pada Balita di Wilayah Kerja PuskesmasTatah Makmur Kabupaten Banjar. *Midwifery and Reproduction*, 4(1), 1–8.
- Kemendes RI. (2020). *Buku Saku Info Vaksin*. Kemendes RI.
- Kemendes RI. (2022). *Laporan Kinerja 2022 Direktorat Pengelolaan Imunisasi*. Direktorat Jenderal Pencegahan dan Pengendalian Penyakit.
- Mahayanti, N. M. D., Sriasih, N. G. K., Lindayani, K., & Dewi, I. N. (2020). Hubungan Riwayat Berat Badan Lahir Rendah dengan Stunting di Kecamatan Ubud Gianyar. *Jurnal IMJ: Indonesia Midwifery Journal*, 3(2).
- Meryana. (2014). *Faktor-faktor yang mempengaruhi Tumbuh Kembang*. Refika Aditama.
- Natalia, L., & Evitasari, D. (2020). Perbedaan Pemberian ASI Eksklusif, Status Sosial Ekonomi, Riwayat Penyakit ISPA Pada Balita Stunting Dan Non Stunting. *Jurnal Ilmiah Indonesia*, 5(10), 1167–1177.
- Novayanti, L. H., Armini, N. W., & Mauliku, J. (2021). Hubungan Pemberian ASI Eksklusif dengan Kejadian Stunting pada Balita Umur 12-59 Bulan di Puskesmas Banjar I Tahun 2021 . *Jurnal Ilmiah Kebidanan*, 9(2).
- Peraturan Presiden. (2021). *Peraturan Presiden Republik Indonesia Nomor 72 Tahun 2021*.
- Peraturan Menteri Kesehatan Republik Indonesia Nomor 43 Tahun 2019 Tentang Pusat Kesehatan Masyarakat, Pub. L. No. 1335 (2019). [www.peraturan.go.id](http://www.peraturan.go.id)
- Rahayu, A., & Khairiyanti, L. (2014). *Resiko Pendidikan Ibu terhadap Kejadian Stunting pada Anak 6-23 Bulan*.
- Setda Kabupaten Badung. (2023, March 1). *Wabup Suiasa Pimpin Rakor Percepatan Penurunan Stunting Tingkat Kabupaten Badung*.

<https://setda.badungkab.go.id/berita/48408-wabup-suiasa-pimpin-rakor-percepatan-penurunan-stunting-tingkat-kabupaten-badung>

- Utami, M. T., & Widianingsih, E. N. (2023). Status Berat Badan Lahir Rendah dengan Kejadian Stunting pada Balita di Desa Sukadadi, Lampung. *Ilmu Gizi Indonesia*, 6(2), 95104.
- WHO. (2017). *Stunted Growth and Development*. <https://www.who.int/>
- WHO. (2020). *The Global Health Observatory: Prevalence Of Stunting*. [https://www.who.int/data/gho/data/themes/topics/sdg-target-2\\_2-malnutrition](https://www.who.int/data/gho/data/themes/topics/sdg-target-2_2-malnutrition)
- Wulandari, A., & Fitriana Kurniawati, H. (2023). Faktor-Faktoryang Mempengaruhi Stunting Studi Kasus pada Puskesmas di Bantul, Daerah Istimewa Yogyakarta. *BIKK by IISTR*, 2(01), 51–58. <https://doi.org/10.56741/bikk.v2i01.180>