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# Clean and healthy lifestyle behavior in families with stunted children at puskesmas karuwisi

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A B S T R A C T

One of the health problems suffered by many Indonesian children is stunting. The number of stunted children in Makassar City in 2016 was 2454 children included in the very short category (2.35%) and 6,787 in the short (6.51%) category. Data obtained at PUSKESMAS Karuwisi showed that 73 children were in a short category, and 4 children were in a very short category. The study aimed to observe the overview of healthy lifestyles in families with stunted children. The type of research used was observational descriptive, with the number of samples as many as 77 respondents. Total sampling was used as a sampling technique and a questionnaire as the research instrument. The results showed that PHBS in families with stunted children included good category was 35 (45.5%) and less category was 42 (54.5%), exclusive breastfeeding with the yes category was 51 (66.2%), and the no category was 26 (33.8%), weighing children with yes category was 39 (50.6%) and no category was 38 (49.4%), using clean water with yes category was 49 (63.6%) and no category was 28 (36.4%), washing hands with soap (CTPS) with yes category was 39 (50,6%), and no category was 38 (49,4%), consuming fruit and vegetables with yes category was 16 (20,8%) and no category was 61 (79,2%), smoking in the house with yes category was 54 (70,1%) ) and no category was 23 (29.9%), exclusive breastfeeding with exclusive category was 46 (59.7%) and the non-exclusive category was 31 (40.3%), Having infectious disease with experienced category was 42 (54.5%) and did not experience category was 5 (45, 5%). We can conclude that more families with stunted children do not apply Clean and Healthy Lifestyle Behavior (PHBS) than those who implement it, and most PHBS indicators are met. It is recommended that health workers provide improved health services for the community, especially regarding PHBS and the consequences of not implementing PHBS, as well as providing increased health promotion such as socialization of causes and prevention of stunting.



*Kata kunci:*

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A B S T R A K

Salah satu masalah kesehatan yang banyak diderita anak Indonesia adalah stunting. Jumlah anak pendek di Kota Makassar tahun 2016 sebanyak 2454 anak termasuk dalam kategori sangat pendek (2,35%) dan 6.787 anak termasuk dalam kategori pendek (6,51%). Data yang diperoleh PUSKESMAS Karuwisi menunjukkan 73 anak termasuk kategori pendek, dan 4 anak termasuk kategori sangat pendek. Tujuan penelitian adalah untuk mengetahui gambaran perilaku hidup bersih dan sehat pada keluarga dengan anak stunting. Jenis penelitian yang digunakan adalah deskriptif observasional, dengan jumlah sampel sebanyak 77 responden. Total sampling digunakan sebagai teknik pengambilan sampel dan kuesioner sebagai instrumen penelitian. Hasil penelitian menunjukkan bahwa PHBS pada keluarga dengan anak stunting termasuk kategori baik sebanyak 35

(45,5%) dan kategori kurang sebanyak 42 (54,5%), pemberian ASI eksklusif dengan kategori ya sebanyak 51 (66,2%), dan kategori tidak sebanyak 26 (33,8%). %), menimbang anak dengan kategori ya 39 (50,6%) dan tidak ada kategori 38 (49,4%), menggunakan air bersih dengan kategori ya 49 (63,6%) dan tidak ada kategori 28 (36,4%), cuci tangan pakai sabun (CTPS) dengan kategori ya 39 (50,6%), dan tidak ada kategori 38 (49,4%), mengkonsumsi sayur dan buah dengan kategori ya 16 (20,8%) dan tidak ada kategori 61 (79, 2%), merokok di dalam rumah dengan kategori ya sebanyak 54 (70,1%) dan tanpa kategori sebanyak 23 (29,9%), ASI eksklusif dengan kategori eksklusif sebanyak 46 (59,7%) dan kategori non eksklusif sebanyak 31 ( 40,3%), Menderita penyakit menular dengan kategori mengalami sebanyak 42 (54,5%) dan tidak mengalami kategori sebanyak 5 (45,5%). Dapat disimpulkan bahwa lebih banyak keluarga dengan anak stunting yang tidak menerapkan Perilaku Hidup Bersih dan Sehat (PHBS) daripada yang menerapkan, dan sebagian besar indikator PHBS terpenuhi. Disarankan agar petugas kesehatan memberikan peningkatan pelayanan kesehatan bagi masyarakat terutama mengenai PHBS dan akibat tidak melaksanakan PHBS, serta memberikan peningkatan promosi kesehatan seperti sosialisasi penyebab dan pencegahan stunting.



## INTRODUCTION

The issue related to nutritional problems that have become popular in recent years is stunting. A condition when children's body length is less than normal for their age. Stunting is classified as an acute nutritional problem that disrupts children's normal physical and cognitive growth in the long term. This condition can be seen from the Z-score for height-adjusted age (BW/A) is less than -2 SD and less than -3 SD (Yuniar, dkk, 2020). Malnutrition occurs in the womb and in the early stages of birth, but stunting only appears after the children are 2 years old. It affects the level of intelligence, vulnerability to disease, reduces productivity, inhibits economic growth, increases poverty and inequality (Sriyanah, Efendi, et al., 2022).

The 2020 Joint Child Malnutrition Estimates (JME) reports nutritional problems in the world, including the prevalence of stunting of 144 million children under five (21.3%), wasting 47 million (6.9%), and overweight 38 million (5.6%). Countries with the highest prevalence of stunting in the world are the African region with 57.5 million children under five (29.1%), the Asian region with 78.2 million (21.8%), and the Americas with 4.7 million (9%) (UNICEF et al., 2020). In the Southeast Asia region, Indonesia is the third country with the prevalence of under-five stunting reaches 36.4%, while in India it reaches 38.4%, and Timor Leste reaches 50.2% (WHO, 2018).

Based on the Nutritional Status Monitoring (NSM) in 2017, shows that 26.6% of children under five are stunted. This number includes the short category with 19.8% and the very short category with 9.8%. (Rahmadhita, 2020). Based on the primary health research (Riskesdas) of the Ministry of Health in 2018 shows that the prevalence rate of stunting in children under five has decreased by 30.8%, compared to the 2013 Riskesdas results by 37.2%. (Kemenkes RI, 2018).

The prevalence rate of stunting in children under five has decreased to 34.1% compared to 2014 which was 34.5%. It adjusts data from the South Sulawesi Nutritional Status Monitoring (NSM) in 2015, in 24 cities/regencies. Meanwhile, it increased by 34.8% in 2017. The position of South Sulawesi in 2017 shows that this overview still has not reached the Millennium Development Goals (MDGs) target. (Khatimah, dkk, 2020).

Based on data from the Public Health Development Sector at the Makassar City Health Office in 2016, the stunting prevalence rate reached 8.86%, and the target was 25%, so it was stated to be better than the target, where the incidence was not as large as expected. The stunting rate for children under five was 8.86%, with a very short category of 2454 (2.35%) and a short category of 6,787 (6.51%) of the total number of children under five measured 104,319 (Dahniar, dkk, 2017). Stunting is caused by an imbalance of nutritional intake and infectious disease, while clean water and sanitation, parenting styles, health services, and inadequate food supply are several indirect influencing factors (Aprizah, 2021). While the impact of stunting is reduced work capacity, decreased reproductive health, increased co-morbidities, risk of obesity, shortened height, increased spending on health, and decreased development of motor and cognitive language (Hanum, 2019). Parents' education, family income, and the number of children under five are risk factors for stunting (Pratiwi, dkk, 2019).

One of the efforts to overcome stunting is by increasing knowledge so that it can improve feeding behavior in children (Sriyanah, Syaiful, et al., 2022) PHBS is the prevention behavior of various diseases by individuals or families. Therefore, in everyday life, it is recommended to implement PHBS because behavioral factors affect 30-35% of health status. There are several clean living behaviors in the household, such as convincing families to carry out clean behaviors, and not being passive in the public health movement (Aprizah, 2021).

It was shown in Riskesdas 2013 that the national proportion of households with good PHBS was 32.3%, the lowest in Papua (16.4%) and the highest in DKI Jakarta (56.8%). Of the 33 provinces, there are 20 provinces with a low percentage of good PHBS implementation (Kemenkes RI, 2013). Based on the Health Office of South Sulawesi Province 2018, the coverage of Household PHBS was 53.56% in 2014,

54.57% in 2015, and 56.26% in 2016. Through this coverage, it is still below the target of 60% Household PHBS (Dinas Kesehatan Provinsi Sulawesi Selatan, 2018). Stunting in children under five can be associated with PHBS in the household. One of the improvements in the health status of the family is PHBS. Nutrition increases when the implementation of household PHBS is higher. On the other hand, the more a disease occurs in a person, and a decrease in nutritional status leads to stunting, the lower the level of PHBS implementation in the household (Apriani, 2018).

Stunting can be prevented by several things such as giving exclusive breastfeeding, providing nutritious food according to the body's needs, getting used to clean living habits, doing physical activity, balancing between energy expenditure and intake of nutrients into the body, and monitoring children's growth and development regularly (Efendi et al., 2021) Previous research on the relationship between maternal characteristics and PHBS in the household setting with the incidence of stunting by (Aprizah, 2021) showed that 17 children (14.3%) experienced stunting from families with low education, 15 children (15.2%) from families who had jobs and from 27 children, only one family implemented PHBS in the household. So it can be concluded that PHBS in families is correlated with stunting in children under five. According to (Purwanto dan Rahmad, 2020), The high prevalence of stunting is caused by many factors, such as a lack of insight into maternal nutrition and the low level of PHBS in households. These two factors can affect the occurrence of stunting in children.

According to an initial survey at PUSKESMAS in Makassar City, the number of children under five in Height by Age (TB/U) was 73 in the short category, 4 were in the very short category, and 1218 were in the normal category. Based on the problem data above, the researchers took the title of clean and healthy lifestyle behavior in families with stunting in the work area of PUSKESMAS Karuwisi.

## METHODS

Based on the objectives and formulation of the problem, Observational Descriptive is a type of analysis, to find out the description of PHBS in families with stunted children. This research was carried out in the working area of PUSKESMAS Karuwisi from November 5 to December 8, 2021. The population in this analysis was all stunted children under-five, as many as 77 children at PUSKESMAS Karuwisi. The sample in this analysis was mothers with stunted children who were willing to become respondents. Total Sampling, which was the entire population of 77 children suffering from stunting, was used as the sampling technique in this analysis. The questionnaire sheet was used as a data collection tool in this analysis.

This questionnaire was adopted from previous studies as a guide for preparing the questionnaire. The questionnaire contains questions about the factors causing stunting and PHBS respondents, including 6 PHBS indicators used as questions. This questionnaire sheet uses the Gutman scale, which is a scale made by a checklist with a wrong score of 0 and a correct score of 1.

## RESULTS AND DISCUSSION

**Table 1**
**Distribution of Respondents based on Stunting in the Working Area of PUSKESMAS Karuwisi**

| Variable | n | % |
|---|---|---|
| Stunting category | | |
| Short | 73 | 94,8 |
| Very short | 4 | 5,2 |
| Exclusive Breastfeeding | | |
| Exclusive | 46 | 59,7 |
| Non-Exclusive | 31 | 40,3 |
| Infectious disease | | |
| Did not experience | 35 | 45,5 |
| Experienced | 42 | 54,5 |
| Total | 77 | 100 |

Source : Primary Data

The results study obtained data from 77 stunted children. Most were in a short category, as many as 73 people (94.8%). The most exclusive breastfeeding category was the exclusive category, with as many as 46 people (59.7%). The most infectious disease category was the experienced category, with as many as 42 people (54.5%).

**Table 2**
**Distribution of Respondents Based on PHBS in Families with Stunted Children**

| Variable | n | % |
|---|---|---|
| PHBS | | |
| Good | 35 | 45,5 |
| Less | 42 | 54,5 |
| Exclusive Breastfeeding | | |
| No | 26 | 33,8 |
| Yes | 51 | 66,2 |
| Weighing Children | | |
| No | 38 | 49,4 |
| Yes | 39 | 50,6 |
| Using clean water | | |
| No | 28 | 36,4 |
| Yes | 49 | 63,6 |
| Wasing hand with soap | | |
| No | 38 | 49,4 |
| Yes | 39 | 50,6 |
| Consuming food and water | | |
| No | 61 | 79,2 |
| Yes | 16 | 20,8 |
| Smoking in the house | | |
| Yes | 54 | 70,1 |
| No | 23 | 29,9 |
| Total | 77 | 100 |

Source : Primary Data

Based on table 2, the highest number of PHBS category was respondents with less PHBS, as many as 42 families (54.5). The most exclusive breastfeeding category was in the Yes category, with as many as 51 people (66.2%). The most weighing children category was in the Yes category, as many as 39 people (50.6%).

The most category of using clean water was the Yes category, 49 people (63.6%). The highest category of washing hands with soap and water was the yes category, 39 people (50.6%). The most category of consuming fruits and vegetables was the not category, 61 people (79.2%). The

highest category of smoking in the house is the smoking category of 54 people (70.1%)

### Clean and Healthy Lifestyle Behavior (PHBS) with Stunting

**Table 3**
**Cross Tabulation of PHBS and Stunting in Families of Stunted Sufferers**

| | Stunting Category | | | | Total | |
|---|---|---|---|---|---|---|
| | Short | | Very Short | | | |
| | N | % | n | % | n | % |
| PHBS | | | | | | |
| Good | 33 | 42,9 | 2 | 2,6 | 35 | 45,5 |
| Less | 40 | 51,9 | 2 | 2,6 | 42 | 54,5 |
| Exclusive Breasfeeding | | | | | | |
| Yes | 49 | 63,6 | 2 | 2,6 | 51 | 66,2 |
| No | 24 | 31,2 | 2 | 2,6 | 26 | 33,8 |
| Weighing children | | | | | | |
| Yes | 36 | 46,8 | 3 | 3,9 | 39 | 50,6 |
| No | 37 | 48,1 | 1 | 1,3 | 38 | 49,4 |
| Using Clean Water | | | | | | |
| Yes | 46 | 59,7 | 3 | 3,9 | 49 | 63,6 |
| No | 27 | 35,1 | 1 | 1,3 | 28 | 36,4 |
| Washing Hand with Soap | | | | | | |
| Yes | 38 | 49,4 | 1 | 1,3 | 39 | 50,6 |
| No | 35 | 45,5 | 3 | 3,9 | 38 | 49,4 |
| Consuming fruit and vegtable | | | | | | |
| Yes | 14 | 18,2 | 2 | 2,6 | 16 | 20,8 |
| No | 59 | 76,6 | 2 | 2,6 | 61 | 79,2 |
| Smoking in the house | | | | | | |
| Yes | 50 | 64,9 | 4 | 5,2 | 54 | 70,1 |
| No | 23 | 29,9 | 0 | 0 | 23 | 29,9 |
| Total | 73 | 94,8 | 4 | 5,2 | 77 | 100 |

Source : Primary Data

Based on table 3, out of 77 respondents, 42 people had less PHBS, 40 people (51.9%) were in a short category, and 2 people (2.6%) were in the very short category. There were 51 people who gave exclusive breastfeeding, 49 people (63.6%) were in a short category, and 2 people (2.6%) were in the very short category. Based on the data obtained, 39 people weighed children, 36 people (46.8%) were in a short category, and 3 people (3.9%) were in the very short category. The tabulation showed that 49 people use clean water, 46 people (59.7%) were in a short category, and 3 people (3.9%) were in the very short category.

Based on the tabulation, 39 people were washing their hands with soap, 38 people (49.4%) were in a short category and 1 person (1.3%) was in the very short category. Based on the tabulation, 61 people did not consume fruit and vegetables, 59 people (76.6%) were in a short category and 2 people (2.6%) were in a very short category. The result showed 54 people smoked, 50 people (64.9%) were in a short category and 4 people (5.2%) were in a very short category.

### Causes of stunting

**Table 4**
**Cross tabulation of causal factors in stunting sufferers**

| | Stunting category | | | | Total | |
|---|---|---|---|---|---|---|
| | Short | | Very Short | | | |
| | n | % | n | % | n | % |
| Exclusive Breastfeeding | | | | | | |
| Exclusive | 43 | 55,8 | 3 | 3,9 | 46 | 59,7 |
| Non-Exclusive | 30 | 39,0 | 1 | 1,3 | 31 | 40,3 |
| Infectious Disease | | | | | | |
| Experienced | 40 | 51,9 | 2 | 2,6 | 42 | 54,5 |
| Did not Experience | 33 | 42,9 | 2 | 2,6 | 35 | 45,5 |
| Total | 73 | 94,8 | 4 | 5,2 | 77 | 100 |

Source : Primary Data

Based on the above data, there were 46 people who gave exclusive breastfeeding, as many as 43 people (55.8%) were in the short category, and 3 people (3.9%) were in the very short category. Based on the results of the tabulation, there were 42 people who had infectious diseases, 40 people

(51.9%) were in the short category, and 2 people (2.6%) were in the very short category

## DISCUSSIONS

### Overview about Stunting

Stunting is a condition in which children's height is not the same as children of their age. Stunting by age or low height/length is indicated as malnutrition, which indicates a long-term history of malnutrition in children under-five years. So that this is determined by the TB/U indicator with a z-score value of less than -2(Rahayu, dkk, 2018). Malnutrition can occur from the womb to the first few days after birth and is visible when the child is two years old. Stunting can continue at an early age, and it can be risky for teenagers to grow short.

A child whose growth is short at the initial age of 0 to 2 years and continues to be short at the age of 4 to 6 years, and at-risk 27 times greater chance of continuing to be short before adolescence, whereas a child who grows normally at an early age may face developmental delays (growth faltering) at the age of 4 to 6 years and at risk of 14 times to be short before adolescence. Therefore, it is necessary to intervene even though it has exceeded the First 1000 Days of Life to prevent stunting (Rahayu, dkk, 2018).

The most stunted category of children is the short category with 75 people (97.4%), while the very short category is 2 people (2.6%). This analysis shows that stunting in boys respondents is the same as in girls. Stunting is more common in girls than in boys. In line with research (Sari dan Oktacia, 2018), stunting is more common in girls under-five due to a lack of physical activity leading to suboptimal growth.

Meanwhile, Hanum explains that the number of stunting cases in boys was 26 people (55.3%). It was found in another analysis that stunting is more common in boys than in girls because boys move more and expend energy. It will happen in the first year of a boy's life because they grow bigger and need more nutrients. In the second year of life, girls are more likely to experience stunting because their parents don't provide enough nutrition to boys (Addawiah, dkk, 2020).

Based on the theory of WHO (2018), there are several causes of stunting, including family and household factors consisting of home environmental and maternal factors. Maternal factors are caused by inadequate nutrition during the pre-pregnancy period, during pregnancy, and during breastfeeding. Furthermore, it is also affected by mental health, infection, short maternal stature, fetal growth retardation (IUGR) and premature birth, early pregnancy, close birth spacing, and high blood pressure. Meanwhile, home environmental factors include stimulation and lack of children activity, lack of care, lack of food availability and access, inadequate portion of food in the family, inadequate supply of water and sanitation, and low educational level of caregivers.

The second factor causing stunting is the insufficiency of complementary nutrition, which consists of low-quality foods such as micronutrient deficiencies, lack of diversity and consumption of animal-based foods, and complementary foods for breast milk that are not nutritious and low in energy.

Stunting is affected by nutritional status from early pregnancy or before pregnancy. Poor growth in children is long-term weight loss due to insufficient energy intake for the nutrients that help children grow. Stunting shows the occurrence of acute nutritional disorders in infants influenced by the condition of the fetus, mother, and the baby (Addawiah, dkk, 2020). Stunting is also a link between nutrition, child characteristics, health, and children's eating practices. Another significant determinant of stunting is daily food variety (Addawiah, dkk, 2020).

Researchers assume that stunting is caused by several factors, including inadequate nutrition, and birth spacing of children less than two years, so breast milk is prioritized for younger siblings, which means older siblings do not receive enough breast milk. The impact of less breast milk consumption and lack of nutrition is malnutrition in children.

### Overview of exclusive breastfeeding in stunting sufferers

Exclusive breastfeeding is giving breast milk without adding food or drink to children 6 months old (Kemenkes RI, 2012). Insufficient breast milk in children will reduce the amount of nutrition for the body.

Based on the results of data analysis from 77 respondents, it showed that the cause of stunting was exclusive breastfeeding, and the most frequent category was exclusive, as many as 46 people (59.7%), and the least category was non-exclusive, as many as 31 people (40.3%) ). The children get exclusive breastfeeding because some mothers have a middle education level, so make them have good thoughts to improve the health and development of children. It is in line with (Handayani, dkk, 2019) stated that the mothers who gave exclusive breastfeeding were mostly mothers with high school education or equivalent. It shows that a mother's education affects the attitude of the mother in exclusive breastfeeding.

Exclusive breastfeeding is influenced by the mother's education level. Exclusive breastfeeding is better carried out by mothers who have sufficient education. Receipt of information is stimulated by the level of education. All aspects of human life, from thought to attitude, will be influenced by education. High and low education affects a person's ability to breastfeed. The mindset of the mother based on her level of education, especially regarding breastfeeding (Rahayu dan Yunarsih, 2017).

The reasons for mothers not providing exclusive breastfeeding for babies are lack of milk or not being produced, so babies are only provided formula milk, and breastfeeding does not reach six months of age. In line with the analysis (Indrawati, 2016) which states that insufficient milk causes malnutrition in infants. According to research (Locitasari, 2015), stated that newborn babies fed with formula milk have a five times higher risk of poor growth for up to six months compared to children who are breastfed.

Based on cross-tabulation, the most stunted children in the working area of PUSKESMAS Karuwisi is in the short category and receive exclusive breastfeeding. Due to the lack of feeding practices in children cause stunting and failure to thrive in infants even though they are exclusively breastfed.

It is in line with (Niga dan Purnomo, 2016) who found a significant relationship between exclusive breastfeeding and stunting, and indicated a strong relationship. There are still two babies who are exclusively breastfed but are short (stunting) and three children who are not exclusively breastfed but are normal in stature, meaning that poor eating is related to stunting and babies have a chance of stunting.

This finding contradicts with the analysis by (Ridzal, dkk, 2013), which no relationship between exclusive

breastfeeding and nutritional status. It is because the mother's frequency and duration of breastfeeding are not quite right, so the child's nutrition is not fulfilled. According to (Asih dan Risneni, 2016) stated that the benefits of exclusive breastfeeding for babies, include: to meet the nutritional needs of infants up to six months; contain antibodies to reduce the risk of illness; increased baby intelligence due to the presence of omega 3 nutrients; avoid allergies; improvement of speech skills, eyesight, and motor development; increase in mother and baby affection, where the baby feels comfortable in the mother's arms. Several aspects of the benefits for the mother includes Aspects of contraception, health, weight loss, and psychological.

Researchers assume that stunting is not experienced by infants who receive exclusive breastfeeding, due to the benefits of breast milk which help support the development of infants.

**Overview of Infectious Diseases in Stunted Sufferers**

Infectious disease is a causal factor of the nutritional status of children under-five apart from the food consumed (Mugianti, dkk, 2018). In general, a child's appetite decreases when infected with a disease, which causes a lack of nutritional intake in children. However, stunting can be affected by infectious diseases when the duration is long, the food intake is reduced and causes malnutrition (Rahmawati, dkk, 2020).

Based on the data, the highest category of infectious diseases was the experienced category, with as many as 42 people (54.5%), and the least was the did not experience category, with as many as 35 people (45.5%). Several children who have been exposed to repeated infections in a short time will make these children malnourished. In line with the analysis (Agustia, dkk, 2018) stated that one stunting factor was a history of infection, which was 3,400 times greater than children who were not infected.

Based on cross-tabulations, the majority of stunted children in the working area of PUSKESNAS Karuwisi are in a short category and have infectious diseases. In line with the analysis (Picauly dan Toy, 2013) stated that the chance of a stunted child having a history of infection is greater 2,332 times compared to a child who does not have a history of diarrhea or ARI infection. Based on the analysis results, most children who had been infected in the last three months in the working area of PUSKESMAS Karuwisi were ARI and diarrhea. It is due to the lack of parental awareness of environmental hygiene and sanitation. In addition, the closest people can also transmit the virus through the spread of bacteria.

In line with analysis (Tandang, dkk, 2018) regarding the relationship between exclusive breastfeeding and a history of infectious diseases with the incidence of stunting in children under-five in the working area of PUSKESMAS Wae Nakeng, which shows a significant relationship between a history of infectious diseases and the incidence of stunting in infants, so the more often a child is infected, the higher the possibility of a child getting stunted. Analysis by (Wahdah, dkk, 2015) also consistent where the infection is not a risk factor for stunting. It is because even though an infection can be a direct cause, this condition will be influenced by other factors indirectly, for example, the family economy.

One of the factors that directly causes stunting is an infection, and shows a strong connection between infection and nutritional intake. It will make matters worse if the child is malnourished. It will easily strike a malnourished child. Therefore, prevention will make it easier to minimize infection, and nutrition for children can be fulfilled according to their needs (Novikasari, dkk, 2021). The description of the causes of stunting is based on clinical and subclinical infections, for example, enteric infections, environmental enteropathy, diarrheal diseases, malaria, respiratory infections, worms, inflammation, and decreased appetite due to infection (*World Health Organization*, 2013).

The behavior of washing hands before eating or in a dirty environment is a factor of environmental hygiene and sanitation that affects infectious diseases. Children's nutritional status has a positive effect on food hygiene. The infection will appear when children consume an unsanitary meal, it is characterized by decreased appetite and other food tract diseases.It can worsen the children's nutrition and can lead to stunting (Novikasari, dkk, 2021).

According to the researchers' assumptions, there is a relationship between stunting and infectious diseases which affect children's nutritional intake. When the child's nutrition declines, stunting will occur.

**An overview of PHBS indicators in families with stunting**

Clean and healthy lifestyle behavior (PHBS) in families with stunting.

PHBS is behavior on individual or group awareness, which will affect all family members in the health sector and provide a role in society. Stunting in children will be minimized when the PHBS is implemented (Purwanto dan Rahmad, 2020).

Based on this analysis, more respondents implemented less PHBS than good PHBS. It is because several indicators of PHBS was not fulfilled in families with stunting, such as a lack of consuming a variety of foods and smoking in the house. In line with the analysis (Uliyanti, dkk, 2017), where PHBS in Matan Hilir Subdistrict is still relatively low. Based on PHBS review data with various aspects. Aspects of clean water 66.7%, 69% toilet facilities, smoking indoors 78%, eating vegetables and fruit 64%.

Based on cross-tabulation showed that the most stunting children in the working area of PUSKESMAS Karuwisi were in a short category, and most of them were in less PHBS category. It is due to insufficient nutritional intakes, such as rarely consuming nutritious food and the presence of families who smoke at home, which causes obstacles to child development.

Stunting can be prevented in various ways, and one of the prevention is meeting children's nutritional needs, such as protein, iron, and folic acid in daily diet. In addition, sea fish, fruits, and eggs are also present in children's diets. Avoid smoking which will provide obstacles to the development of children in the womb (Purwanto dan Rahmad, 2020). In line with Rumaropen and Bela (2020) where there is a relationship between PHBS and stunted children in the Abepantai sub-district. These results can be proven that families who have poor PHBS habits tend to have stunted children.

While analysis (Rahmawati, 2018) shows the opposite where there is no relationship between PHBS behavior and child nutrition at PUSKESMAS Sangkrah in Surakarta. This was made possible because PHBS was an indirect factor.

PHBS implementation in households is closely related to the nutrition of family members. Implementing PHBS is an effort to improve family health status (Apriani, 2018). Health problems will be minimized by implementing PHBS. PHBS can be pursued by educating family members so that they can explore health problems to maximize their healthy lives

(Kemenkes RI, 2017). Researchers assume that by implementing PHBS in the family, all diseases can be avoided, and stunting is prevented.

### Overview of Consuming a Variety of Foods in Families with Stunting.

Food sources with complete nutrition are vegetables and fruits. For survival, especially in child development, adequate nutrition is needed. Following current trends, fast food is more in demand by the public, which results in a lack of nutrients. When complementary feeding is started, give a variety of foods so that children get to know various flavors from an early age. Socialization of children's nutritional balance can be done during social gatherings, posyandu, and other gathering activities (Maryunani, 2013).

The analysis results showed that the category with the most consumption of fruits and vegetables was the no category, with 61 people (79.2%), and the least with the yes category, with 16 people (20.8%). Because many children don't like vegetables because they prefer the foods they like. It is consistent with the research (Widyaningsih, dkk, 2018) where 85.4% of stunted infants consumed a variety of foods, and only 14.6% of stunted infants consumed a variety of foods. It can be seen from the food distribution showed that the nutritional intake of stunted infants is lower than normal. Consumption of meat and fish for stunted infants is 3.2% higher than for normal infants (Widyaningsih, dkk, 2018).

Based on cross-tabulation showed that the most stunting children are in a short category and do not consume fruit and vegetables. Because children are not used to consuming foods such as vegetables, they will experience a lack of nutrition affecting growth disorders. In line with the analysis (Wantina, dkk, 2017) stated that 3.61 times greater risk of stunting if there is no variety of food. In this condition, vegetables and side dishes are rarely given, leading to a lack of fat or protein in children.

Diversity in food consumption is a variety of food groups consisting of fruit, water, vegetables, and side dishes. A balanced diet is obtained by the variety of foods (Kemenkes RI, 2014). In stunting children, the food consumed is less varied due to the low purchasing power of parents (Hardinsyah, 2007). According to the Indonesian Pediatricians Association (IPA), congenital diseases in children, parents' ignorance of the distribution of balanced nutrition, and poor families are the three factors that cause malnutrition (Sari, dkk, 2019).

A complete variety of food must be given in line with the development of the children's age, and the childrean will become a human being with a brain quality of around 80-85%, which will disrupt motor and mental development. The researcher assumes that the mother must pay attention to the nutrients in the food so that nutrition can be fulfilled, and stunting does not occur.

### Overview of No Smoking Inside the house

In the house, no family member may smoke. Cigarettes reflect a chemical factory, which emits 4000 harmful chemicals in one cigarette, such as CO2, tar, and nicotine (Maryunani, 2013).

Based on the data, the most non-smoking category was the smoking category as many as 54 people (70.1%), and the least non-smoking was 23 people (29.9%). Because many parents of children under-five have not implemented PHBS with indicators of not smoking at home and reduced knowledge of the effects of smoking.

The results of this study are consistent with the analysis (Muin, dkk, 2018) stated that the men still smoke in the house without knowing the dangers of smoking for others. The difficulty of accepting health reasons causes them to be reluctant to stop. Because they feel healthy even they smoke. Indeed, there is a long enough period of 20 to 25 years for them to feel the impact, not right away. Therefore, it is necessary to maximize the socialization of smoking control (Priyoto, 2015).

Based on cross-tabulation, the most stunting children in the working area of PUSKESMAS Karuwisi are in a short category and have families with smoking habits. It is because families with smoking habits can interfere with the absorption of nutrition in children through the smoke.

It is in line with Erdhart's analysis (2019), who stated that many problems with smoking affecting infant nutrition. Therefore it can be concluded that the head of the family who smokes will interfere with the absorption of children's nutrition. So that parents need to be aware not to smoke in the house so that their children have optimal growth and development.

Besides ourselves, smoking also harms others. It is hoped that no family member will smoke while a pregnant woman or baby in the house. Socialization is needed regarding the dangers of smoking on all fronts, such as at the posyandu, the community, or schools.

Relationships, family, and social environment can influence smoking. Reinforcing is a factor that makes it difficult for adults to stop smoking. From all points of view, smoking looks harmful to oneself or those around it. Some research mentions the impact from the individual side. From a health perspective, the chemicals in cigarettes, such as CO2, nicotine, and tar, accelerate the work of the sympathetic nerves and the central nervous system so that the heart rate becomes faster and blood pressure increases. It will lead to several diseases, such as cancer, chronic bronchitis, lung disease, heart disease, high blood pressure, and narrowing of the arteries. In addition, from the point of view of pregnant women, smoking will disrupt the growth and development of children, the possibility of birth defects, prenatal mortality, and premature as well as low body weight (Natsir, 2019).

The same impact is obtained by children as passive smokers exposed to cigarette smoke. It has a high creatinine level compared to active smokers. It means that smoking affects non-smokers (Sari and Resiyanthi, 2020). Researchers assume that parents or families with smoking habits should not smoke in the house so that children under five and those around them can avoid various diseases caused by cigarette smoke.

## CONCLUSIONS

We can conclude that more families with stunted children do not apply Clean and Healthy Lifestyle Behavior (PHBS) than those who implement it. Most PHBS indicators are met, and infectious diseases are still a factor causing stunting. It is recommended to improve health services for the community, especially regarding PHBS and the consequences of not implementing PHBS, as well as providing increased health promotion such as socializing the causes and preventing stunting.

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