

## Stunting Incidents Related to Parents' Smoking Behavior

1- **Sunarto Kadir**, Department of Public Health, Faculty of Sports and Health, State University of Gorontalo

2- **Selvi A. Ahmad**, Department of Public Health, Faculty of Sports and Health, State University of Gorontalo

### Abstract

*World Health Organization* (WHO) (2014) in the Global Nutrition Targets 2025, stunting is considered as an irreversible growth disorder which is mostly influenced by inadequate nutritional intake and repeated infections during the first 1000 days of life. The global incidence of stunting is estimated at around 171 million to 314 million which occurs in children under 5 years of age and 90% of them are in countries around the world. African and Asian continents (Fenske et al, 2013). Stunting in Indonesia is the second largest in Southeast Asia, reaching 43.8%. The prevalence of stunting for children under five is 30.86%. Meanwhile, the incidence of stunting in Bali reached 21.9%. The highest cases in five districts in Bali reached an alarming level. According to the Head of the Bali Provincial Health Office, the average is above 20% to 25%. The purpose of this study was to determine the relationship between parental smoking behavior and the incidence of stunting. This research is a type of quantitative research that uses a descriptive correlation research design. The approach used in this research is cross sectional. The results showed that the value of  $p = 0.011$  ( $p < 0.05$ ) so that this indicates that there is a relationship between parental smoking behavior and the incidence of stunting in toddlers aged 2-5 years, with a correlation strength value of 0.33 it can be interpreted that the parental smoking behavior variable with the incidence of stunting in toddlers aged 2-5 years has a low correlation strength or relationship. The conclusion is smoking behavior in parents will have a direct and indirect impact on the child's growth process.

**Keywords:** Smoking Behavior, Stunting, Health

***Tob Regul Sci.***™ 2021;7(6-1): 26-38

**DOI:** [doi.org/10.18001/TRS.7.6.1.4](https://doi.org/10.18001/TRS.7.6.1.4)

### Introduction

The concept “citizenship rights” that appeared in the 19<sup>th</sup> century comprised a set of rights and commitments in the relationship between national government and citizens. West has been the origin of citizenship rights, which influenced other communities. Citizenship rights served as civil rights in the 18<sup>th</sup> century that included freedom of speech, freedom of fair trials, and equal access

*World Health Organization*(WHO) (2014) in the Global Nutrition Targets 2025, stunting is considered as an irreversible growth disorder that is largely influenced by inadequate nutritional intake and repeated infections during the first 1000 days of life. Based on data from Riskesdas (2018), the prevalence of stunting in children under five reaches 30.86%. While the incidence in Bali reached 21.9%. The highest cases in five districts in Bali reached an alarming level. According to the Head of the Bali Provincial Health Office, dr. On average, Ketut Suarjaya is above 20% to 25%. The districts are Bangli, Gianyar, Karangasem, Singaraja and Jembrana. Data at the Kintamani I Health Center in January 2019, found that there were 66 toddlers experiencing stunting in South Batur Village. The results of interviews and observations in Banjar Masem Dwi Tirta with posyandu cadres obtained stunting data for 12 toddlers with an average birth weight of 2500-4000 grams. The results of the study prove that the influence of heredity only contributes 15%, while the largest element is related to problems with nutrient intake, growth hormones and the occurrence of recurrent infectious diseases. Another factor that affects a child's growth is environmental factors, such as exposure to pollution from cigarette smoke. The content of cigarettes in the form of carbon monoxide and benzene can reduce the number of red blood cells and damage the bone marrow, increasing the risk of anemia. One of the effects of anemia is a decrease in the amount of nutrients to cells, tissues, and organs. and glands, especially glands that produce thyroid hormone and growth hormone. Both of these hormones are very influential on the incidence of stunting. (Aryastami & Tarigan, 2017), explained that exposure to cigarette smoke and smoke pollution is thought to have an effect on stunting. Based on the above phenomenon, researchers are interested in knowing "Stunting Incidents Associated with Parents' Smoking Behavior"

## **METHOD**

This research is a type of quantitative research that uses a descriptive correlation research design. Correlational research aims to reveal the correlative relationship between variables. The approach used in this study is cross sectional, which is a type of research that emphasizes the time of measurement or data observation and the independent and dependent variables only once at a time (Nursalam, 2017). The population in this study were all parents of children under five in the working area of the Kintamani I Health Center with a total of 66 people. The inclusion criteria in this study were parents of children under five who had no barriers to communication and were willing to be respondents. The sampling technique used in this study was carried out by non-probability sampling, namely purposive sampling, where the technique of determining the sample by selecting a sample among the population with certain considerations in accordance with what the researcher wants. The number of samples in this study was 57 people. This study used instruments in the form of a smoking behavior questionnaire and a stunting questionnaire. Univariate analysis of the data obtained from the collection results can be presented in the form of a frequency distribution. Bivariate analysis was carried out on two variables that were suspected to be related or correlated and the researcher used the Spearman rank test

international measures have been considered for linguistic species. Like changes in linguistic

## RESULTS

### 1. Parents smoking attitude

Table 1

Distribution Parents Smoking Attitude			
No	Attitude	Frequency	Percentage (%)
1.	Less Attitude	24	42.1
2.	Good attitude	33	57.9
<b>Total</b>		57	100.0

Based on table 1 shows that of the overall respondents, most of the respondents' attitudes were good, namely 33 respondents (57.9%).

### 5. Parents smoking behavior

Table 2

Distribution Parental Smoking Behavior

No	Behavior	Frequency	Percentage (%)
1.	Effective Behavior	29	49.1
2.	Behavior Ineffective	29	50.9
<b>Total</b>		57	100.0

Based on table 2 shows that of the overall respondents, most of the respondents' behavior was ineffective, namely 29 (50.9%).

### 6. Stunting Incident

Table 3

Distribution of Stunting Events

No	Incident Stunting	Frequency	Percentage (%)
1.	Stunting	30	52.6
2.	No Stunting	27	47.4
<b>Total</b>		57	100.0

Based on table 3, it shows that of the total respondents, most of the incidence of stunting in toddlers is in the stunting category, which is 30 (52.6%).

### 7. The Relationship of Smoking Behavior with Stunting Incidents

Table 4

### The Relationship of Smoking Behavior With Stunting Incidents

Perilaku Merokok	Kejadian Stunting				Total		P value	Correlation Coefficient
	Stunting		Tidak Stunting					
	n	%	n	%	n	%		
Efektif	10	17,5	18	31,6	28	49,1	0,011	-0,33
Tidak Efektif	20	35,1	9	5,8	29	50,9		
<b>Total</b>	<b>30</b>	<b>52,6</b>	<b>27</b>	<b>47,4</b>	<b>57</b>	<b>100</b>		

Based on table 4, the relationship between parental smoking behavior and the incidence of stunting, namely smoking behavior, it was found that children under the stunting category who had parents with effective smoking behavior were 10 respondents (17.5%) and 18 respondents who were not stunted (31.6%). While smoking behavior that is ineffective and has stunting toddlers is as many as 20 respondents (35.1%) and those who are not stunted are 9 respondents (5.8%).

The results of the Spearman rank test, obtained p value = 0.011 (p <0.05) so this indicates that there is a relationship between parental smoking behavior and the incidence of stunting in toddlers aged 2-5 years, with a correlation strength value of 0.33 it can be interpreted that the behavioral variable parental smoking with stunting in children aged 2-5 years has a low correlation or relationship strength.

## DISCUSSION

Based on the results of this study, it was found that the education level of most of the respondents was SMA/SMK as many as 35 people (61.4%). The theory says that education is an activity or learning process to develop or improve certain abilities so that the educational goals can stand alone. The level of education also determines whether or not a person is easy to absorb and understand the knowledge they have acquired, in general, the higher a person's education, the better his knowledge. Regarding the type of work, the results of this study indicate that most of the respondents work as laborers or farmers, namely 25 people (44%). A person's work environment can gain experience and knowledge, either directly or indirectly (Mubarak, 2013).

Based on the age of the respondents, it was found that most of the respondents were between the ages of 20-35 years with a total of 38 people (66.6%). Age affects the development of a person's grasping power and mindset, the older a person is, the processes of mental development improve, but at a certain age, the increase in this mental development process is not as fast as when he was a teenager. Increasing a person's age can affect growth. Cigarette smoke is estimated to contain more than 4000 chemical compounds that are pharmacologically active and toxic that can cause mutations (mutagenic) and cancer

(carcinogenic). In Sugito (2007) it is explained that the three main toxins in cigarettes, namely nicotine, tar and carbon monoxide, cause blockage of blood vessels when exposed for a long time. If the blood vessels are blocked, the substances that the body needs are blocked so that the body will experience an imbalance. This imbalance will make the body more susceptible to disease. Children as passive smokers who are exposed to cigarette smoke are also likely to be affected by the same as active smokers. This is supported by research by Benowitz et al (2010) which states that significantly, those who are exposed to cigarette smoke have higher cotinine/creatinine levels than active smokers. This means that those who do not smoke are also likely to be adversely affected by smoking. Children as passive smokers who are exposed to cigarette smoke are also likely to be affected by the same as active smokers. This is supported by research by Benowitz et al (2010) which states that significantly, those who are exposed to cigarette smoke have higher cotinine/creatinine levels than active smokers. This means that those who do not smoke are also likely to be adversely affected by smoking. Children as passive smokers who are exposed to cigarette smoke are also likely to be affected by the same as active smokers. This is supported by research by Benowitz et al (2010) which states that significantly, those who are exposed to cigarette smoke have higher cotinine/creatinine levels than active smokers. This means that those who do not smoke are also likely to be adversely affected by smoking.

According to Freeman in Johnson & Leny (2010), one of the tasks of the family in health is to maintain an atmosphere at home that benefits the health and personality development of family members. With this smoking behavior, parents do not carry out family duties in terms of health properly. Smoking behavior is definitely not a behavior that creates an atmosphere that supports the health of family members, especially the growth and development of children. Parents will monitor the development and health of their children, even keep them away from cigarette smoke. Based on the results of the research above, the researcher assumes that smoking behavior in parents not only has a negative impact on the individual but also on the family and people around them. Nicotine levels contained in cigarettes can cause health problems in the respiratory system and cause complications in other organs. Lead exposure will also affect the health of pregnant women and their fetuses, which in turn will affect the baby's weight at birth. The results of this study indicate that out of the total number of respondents, most of the incidence of stunting in toddlers is in the stunting category, which is 30 (52.6%). growth in children. A child is said to be stunted if the child's height is lower than his age standard. The main cause of stunting is chronic malnutrition since the baby is in the womb until the early period of a child's life (1000 days after birth). The percentage of stunting in this study was 30%. This percentage is lower than the national

stunting prevalence based on Riskesdas of 37.2%, but higher than the global stunting percentage according to UNICEF, which is 22.9%. Based on the results of Setiawan's research (2018), it shows that from 74 randomly selected samples, it was found that the percentage of stunting was 26.9%. but higher than the percentage of stunting globally according to UNICEF, which is 22.9%. Based on the results of Setiawan's research (2018), it shows that from 74 randomly selected samples, it was found that the percentage of stunting was 26.9%. but higher than the percentage of stunting globally according to UNICEF, which is 22.9%. Based on the results of Setiawan's research (2018), it shows that from 74 randomly selected samples, it was found that the percentage of stunting was 26.9%.

Based on the exposure of the research results, the researcher assumes that the incidence of stunting is getting lower, seen from the number of events in each year which has decreased. This is due to the role of the government and also the awareness of the community to pay more attention to the nutrition of their children. Improvements and prevention are carried out by the community by more actively accessing information related to efforts to increase the fulfillment of nutritional needs. The results of the bivariate analysis obtained a p value of 0.011, which means that there is a relationship between parental smoking behavior and the incidence of stunting in toddlers. This is also in line with research conducted by Siska P (2017) which states that there is a relationship between parental cigarette consumption and the incidence of stunting in children with p values 0.601 and OR = 1.15 which means that parents' cigarette consumption will be at risk of having children who experience stunting 1.15 times greater than children whose parents do not consume cigarettes. Parental smoking behavior is estimated to affect stunting children in two ways. First, through the cigarette smoke of smoking parents which has a direct effect on the child's growth and development. Cigarette smoke interferes with the absorption of nutrients in children, which in turn will interfere with their growth and development. Second, in terms of the cost of shopping for cigarettes, it makes parents reduce their allotted costs for shopping for nutritious food, health costs, education and so on. Cigarette shopping has shifted the need for nutritious food that is essential for the growth and development of toddlers which results in delays in mental development, increase morbidity and mortality due to susceptibility to disease (Dr. Bernie Endyarni Medise, Sp.A(K), MPH). The results showed that smoking behavior in parents, especially fathers, will affect the growth process of children either directly or indirectly. The habit of consuming cigarettes will cause children to be exposed to harmful chemical substances from cigarettes that will inhibit growth. The cost of buying cigarettes will also reduce the cost of meeting household shopping needs so that the nutritional intake that is expected to be given well to children does not materialize properly. The results showed that smoking behavior in parents, especially fathers,

will affect the growth process of children either directly or indirectly.

The habit of consuming cigarettes will cause children to be exposed to harmful chemical substances from cigarettes that will inhibit growth. The cost of buying cigarettes will also reduce the cost of meeting household shopping needs so that the nutritional intake that is expected to be given well to children does not materialize properly. The results showed that smoking behavior in parents, especially fathers, will affect the growth process of children either directly or indirectly. The habit of consuming cigarettes will cause children to be exposed to harmful chemical substances from cigarettes that will inhibit growth. The cost of buying cigarettes will also reduce the cost of meeting household shopping needs so that the nutritional intake that is expected to be given well to children does not materialize properly.

## CONCLUSION

Smoking behavior in parents will have direct and indirect impacts. We can see the direct impact of the nicotine and lead content that can affect the child's growth process. While the indirect impact can be seen from the economic ability of parents in meeting the nutritional needs of children which will later affect the growth and development of children.

## REFERENCES

- Ni'mah, K & Nadhiroh, SR (2015). Factors Associated with Stunting Incidence *Toddler*. Indonesian Nutrition Media, Vol. 10. No. January 1-June 2015: p. 13-15
- World Health Organization (WHO). (2014). Stunting Data. America: WHO
- Basic Health Research (Riskesdas). (2018). Indonesian Ministry of Health Research and Development Agency in 2013. Accessed: 14 August 2019, from <http://www.depkes.go.id/resources/download/general/Result%20Riskesdas%202013.pdf>.
- Bali Provincial Health Office. (2014). Monitoring and Evaluation Report July 2014, Denpasar.
- Aryastami, NK, & Tarigan, I. (2017). Study of Policy and Management of Stunting Nutrition Problems in Indonesia. *Health Research Bulletin*, Vol. 45, No. 4, December 2017: 233-240.
- Ministry of Health, R. (2014). Prevent Stunting and Improve Diet, Parenting and Sanitation . Jakarta: Ministry of Health.
- TNP2K. (2017). 100 Priority Regencies/Cities For *Intervention Dwarf Child (Stunting)*. National Team for the Acceleration of Poverty Reduction.
- Partner. (2015). The Problem of Short Children (Stunting) And Interventions To Prevent Stunting (A Literature Review). *Journal Community Health*, Vol. 2 No.6, May 2015.
- Kurniafitri, D. (2015). *Smoking Behavior in Women In Urban*. Available: <http://www.neliti.com/publications/32641/1> June 6, 2019.
- Murisal, M. (2012). The Influence of Peer Groups on Cigarette Consumptive Behavior *Tob Regul Sci.*™ 2021;7(6-1): 26-38

Sunarto Kadir, Selvi A.Ahmad.  
Stunting Incidents Related to Parents' Smoking Behavior

Teenager Daughter. Available:<http://id.portalgaruda.org/16> June 2019.

Martin, G and Pear, J. (2007). Behavior Modification: What it is and how to do it. New Jersey, USA : Pearson Education, Inc.