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The Association of Occupation and Income with The Incidence of Stunting

Fifin Dewi Fitriani, Tri Sunarsih, Lily Yulaikhah*

Bachelor Midwifery Study Programme, Faculty of Health, Universitas Jenderal Achmad Yani Yogyakarta, Indonesia

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CORRESPONDING AUTHOR

Tri Sunarsih
Jl. Walet 2 RT 2 RW 8 Bejen Karanganyar
are_she79@yahoo.com
+6282123521525

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A B S T R A C T

Stunting is the most common form of child malnutrition worldwide, affecting 161 million children aged 0 to 5 years. One way to look at a community's general health condition is through the socioeconomic status within that group. This study aimed to determine the relationship between occupation and income with the incidence of stunting in the Ngalang sub-district. The design of this study was cross-sectional with a population of 85 parents who had toddlers aged 0-60 months with stunting conditions in Ngalang Village, Gunungkidul Yogyakarta. The sampling technique used was purposive sampling with the Slovin method with an error tolerance of 10%, so the sample size was 46 parents and stunted toddlers who met the inclusion criteria. Data were analysed using Spearman's rho test. The results showed that the father's job was p=0.021, the mother's job was p=0.70, and the family income was p=0.023. There is an association between father's occupation and family income on the condition of stunted toddlers. However, there is no relationship between the mother's job and the condition of stunted toddlers in Ngalang Village. The advice given in this study is that families with stunted toddlers should look for opportunities to increase family income, such as finding additional work or starting a small business from home.

Introduction

Stunting is a disease in which an infant child under five years old (toddler) during his growth and development fails due to chronic malnutrition to become very short not according to his age, until now the problem of stunting is still a health case that needs to be resolved by several developing countries, especially Indonesia. Stunting is the most common form of child malnutrition worldwide, affecting 161 million children aged 0 to 5 years. Stunting has been associated with cognitive decline, increased risk of chronic disease as an adult, and increased mortality and illness in children. The World Health Organisation (WHO) has also identified stunting as a top priority for global health (Fonseka et al., 2022).

WHO data support the stunting problem that occurred in the world in 2020, where the stunting rate of toddlers (55%) or a total of 83.6 million Asian toddlers experience stunting conditions. The 2022 Indonesian Nutrition Status Study (SSGI) data results stated that 21.6% or more than 7 million children and 2 million young children are classified as very thin and short (Hatijar, 2023). According to the Yogyakarta Health Office (2022), the stunting prevalence in Yogyakarta province in 2022 was 16.4%, with the highest prevalence in Gunungkidul Regency (15.42%) or 4,574 toddlers measured as stunted. This figure has reached the WHO standard in reducing the incidence of stunting by 20%, but not 14% by 2024, so it is expected that in Gunungkidul in 2026, the stunting rate will reach the national standard

target of 14%. The DIY Nutrition Situation Map in 2022 explains that the prevalence of stunting in Gunungkidul has increased precisely in Ngalang, which occurred quite significantly, an increase in 2022 there were (4.61%) stunted toddlers, and in 2023, a total of (17.17%) of toddlers with stunting conditions (Dinkes DIY, 2023).

Toddlers with stunting problems during growth and development are considered severe if not addressed immediately because they can have an impact on delays in motor development and decreased levels of intelligence, which will hinder productivity as adults. A number of conditions of the effects of stunting experienced by toddlers, such as disruption of brain function, physical growth, and metabolism are disrupted, then other side effects that may occur are disrupting cognitive function and ability to learn, causing the body to become less balanced so that it becomes more easily hungry, decreased heart function, and in the elderly experience disability (Arbain et al., 2022).

The incidence of stunting that has such a significant impact in the future is not far from the causes that trigger the emergence of stunting problems. According to Tufts Theory, stunting cases experienced by toddlers are caused by several factors, one of which is an indirect factor in the form of socioeconomic status. One way to see the general health condition of the community is through the condition of the group's socioeconomic status. The socioeconomic condition of each group in society tends to be determined by the level of employment and income that is considered to support the welfare of groups in the smallest area of society, namely the family (Holbala *et al*., 2022). Indirect socioeconomic status factors closely related to stunting are commonly seen, such as low family income and daily work (Wahid *et al*., 2020).

Previous research Akbar (2022) stated that stunting cases arise due to long-term low socioeconomic conditions. One of the social and economic factors in society is employment and income. The employment factor is a benchmark in the income generated, so it becomes a parameter for low or high income in the family. The family income factor influences stunting, where family income can affect the purchase of nutritious food. A high family income can fulfill food needs that are considered healthy and can be consumed by members of the family.

Furthermore Akbar (2022) states that the level of parental employment regarding stunting has a significant effect, so parental employment plays a vital role in preventing stunting in children. The quality of food that will be given to toddlers during their growth and development is seen from the work of individuals in a family because work is related to income, where income will determine the food intake consumed. Furthermore, the research findings also found that there is a correlation between the income of a family and stunting; the economic level is fairly low in the family, it will be easy to see the opportunity for a child to experience malnutrition, which is caused by many families finding it difficult to meet the needs of children's intake.

The research conducted in the Ngalang sub-district is a follow-up study to the research Sunarsih dan Astuti (2022) entitled The Relationship Between Parental Knowledge of Holistic Parenting and Growth; after the research was conducted, it was suggested that future researchers conduct research related to socioeconomic variables with the incidence of stunting in Ngalang sub-district. Ngalang sub-

district itself has (17.17%) toddlers in stunting conditions with a background of low family socioeconomic status observed based on the situation of Ngalang sub-district and the results of monitoring (BPS, 2023) related to the Poverty Depth Index of Gunungkidul City where in 2022 (2.63%) and an increase in 2023 to (2.71%) low socioeconomic status residents. This study aimed to determine the relationship between occupation and income with the incidence of stunting in Ngalang**.**

Method

Type of quantitative research with correlational analytic design observational technique in the form of a cross-sectional approach. The questionnaire in this study is a question adopted from previous research by Akbar (2022) and Holbala (2022), which is then used as a tool in this study to obtain data on the work of mothers and fathers with the characteristics of not working and working and family income data with characteristics ≥ MSE, namely, IDR 2,049,226.00 and < MSE, namely, IDR 2,049,226.00. Furthermore, the microtome tool (height gauge) measures the length or height based on age in stunting toddlers without repetition of measurements. The sampling technique of this study used purposive sampling, with a population of 85 parents who had stunted toddlers aged 0 to 60 months in Ngalang. The Solvin formula with a 90% confidence interval and inclusion criteria was used in this study to take a large sample so that 46 respondents were obtained. This research was conducted from February to May 2024 and has been approved and declared ethically feasible by the Research Ethics Commission of Jenderal Achmad Yani University Yogyakarta with number SKep/83/KEP/I/2024.

Maternal and paternal employment characteristics and income were used as independent variables. The incidence of stunting in this study was used as the dependent variable with the results of the classification of very short toddlers (<-3 SD) and short toddlers (-3 SD to <-2 SD) obtained from the z-score value. This study used the univariate analysis method to determine the distribution, frequency, and percentage and bivariate analysis using the Spearmen test to determine the relationship between the two variables in the study with the data scale used, namely ordinal, which will then obtain a value ($p<0.05$) (Rahmawati, 2020).

Results

A. Univariate Analysis

Table 1. Distribution of Father's Occupation Characteristics in Ngalang Village

Characteristics Father's Occupation	**Frequency (f)**	**Percentage (%)**
Not working	4	8,7
Working	42	91,3
Total	**46**	**100,0**

Primary Data, 2024

Table 1 shows that 46 respondents participated in this study. The analysis results were based on the highest husband's work being 42 people (91.3%) and the lowest husband's work not working as many as 4 people (8.7%).

Table 2. Distribution of Mother"s Occupational Characteristics in Ngalang Village

Characteristics Mother's Occupation	Frequency (f)	Percentage (%)
Not working	31	67,4
Working	15	32,6
Total	**46**	**100,0**

Primary Data, 2024

Table 2 shows that 46 respondents participated in this study. The results of the analysis of the characteristics of respondents based on the highest maternal employment was 28 people (60.9%), and the lowest maternal employment was 18 people (39.1%).

Table 3. Distribution of Family Income Characteristics in Ngalang Village

Characteristics Family Income	Frequency (f)	Percentage (%)
Low	27	58,7
High	19	41,3
Total	**46**	**100,0**

Primary Data, 2024

Table 3 shows that 46 respondents participated in this study. The results of the analysis of the characteristics of respondents based on family income per month were the most families with low income, 27 people (58.7%), and the results of family income per month with high-income categories as many as 19 people (41.3%).

B. Bivariate Analysis

Table 4. Cross Tabulation of the Relationship between Occupation and Income with the Incidence of Stunting in Ngalang Village

Respondent Characteristic	Stunting						*p-value*	*r*
	Very Short		Short		Total			
	(n)	(%)	(n)	(%)	(n)	(%)		
Father's Occupation								
Not working	2	50,0	2	50,0	4	100,0	0,021	0,339*
Working	4	9,5	38	90,5	42	100,0		
Mother's Occupation								
Not working	6	19,4	25	80,6	31	100,0	0,070	0,269
Working	0	0,0	15	100,0	15	100,0		
Family Income								
Low	6	22,2	21	77,8	27	100,0	0,028	0,325*
High	0	0,0	19	100,0	19	100,0		

Primary Data, 2024

Table 4 shows that 46 respondents from the results of the study, fathers who work and have very short toddlers (9.5%) are fewer than those who have short toddlers (90.5%), so it is obtained from the Spearman test that the father's work factor is associated with stunting conditions in toddlers p=0.021 (p<0.05). Then, the category of mother's work, where the majority of mothers who do not work have very short toddlers (21.4%) and short (78.6%) compared to mothers who work and after the Spearman's rho test obtained a value of p=0.070, where mother's work is a factor that is not associated with the incidence of stunting. Furthermore, after conducting a Spearman test on the category of monthly income in the family where families with low income, the incidence of stunting is stated to be higher, in families who have very short toddlers (22.2%) and short toddlers (77.8%), with the results of p=0.028 which can be interpreted that family monthly income is related to the incidence of stunting.

Discussion

A father's job is part of the social status associated with stunting (p=0.021). Similar to the results of the study Lemaking et al. (2022) stated that there was a significant relationship between the father's work and the incidence of stunting in toddlers in Kupang Tengah District (p=0.003). Maulida (2022) in his research also revealed that based on statistical tests that have been carried out, there is a significant relationship between husband's work and stunting toddlers in the working area of the Darul Aman Public Health Center in East Aceh in 2021 (p=0.018). The research results are in accordance with the theory that states that the father with a status of not working or uncertain/fixed income is also doubtful. Results in less ability to fulfill daily nutritional needs in children, compared to working status fathers and fixed income will get income so that it allows the father to meet the daily nutritional needs of his children and family properly, the father's work can influence toddlers stunting conditions.

Husbands or fathers with irregular working status will have an adverse impact on the daily nutritional fulfillment of toddlers. With the intention, when the husband or father has a permanent job, the nutritional status of toddlers is also obtained consistently or increases because their income will affect the purchase of the quality of food consumed. Therefore, toddlers' good or bad nutritional status correlates with the father's work, which certainly earns income for daily nutritional intake needs. Then, it should be noted that if the husband has a good work ethic, then his efforts will be more successful. It is beneficial for the nutritional intake needs of his children, in line with Akbar (2022), which states that the position of low social and economic status is a risk factor for stunting in toddlers. According to Lemaking (2022) a father's job can support the growth and development process of toddlers where in the family, work can be related to the family's purchasing power obtained from the income earned. Families with limited income have a high chance that the intake of high nutritional value foods consumed is less fulfilled in terms of quality and quantity.

Maternal employment, from the results of this study, is not associated with the incidence of stunting. The number of stunted toddlers with very short conditions with mothers who do not work is 6 people (19.4%), and the condition of short toddlers with mothers who do not work is 25 people (80.6%), then the Spearman's rho statistical test was obtained (p=0.070) which means that there is no relationship between mothers who are or do not work with the incidence of stunting in toddlers. The results of this study are similar to research Wanimbo (2020), which revealed that p=0.961, which means that maternal work has no relationship with the incidence of stunting. Mothers who are not working or working but have a shorter work duration have a higher chance of spending time at home and establishing closeness with toddlers than mothers who work outside the home for a longer time. Wives with the status of Housewives (IRT) who focus on being at home make it possible to directly monitor the growth and development of their children, such as bringing toddlers to the Posyandu and participating in the Supplementary Feeding Programme (PMT) and education about the growth and development of children under five (Mentari, 2019).

Aprizah (2021), in her research, also revealed that the mother's employment status had nothing to do with the incidence of stunting in toddlers (p = 1.000). This aligns with research Fauzi et al, (2020)

using the Chi-Square test, which showed no significant relationship between maternal employment and stunting (p = 0.635). Another study from Pertiwi et al. (2021) also found no relationship between maternal employment and the incidence of stunting in toddlers (p=0.535). It can be seen that the toddler period is a golden period or a period of growth and development that occurs rapidly and rapidly. A mother is expected as early as possible to develop strategies to prevent failed growth in toddlerhood, which is sometimes ignored. The condition of toddlers with stunting status is generally in families with mothers who work outside the home so that the opportunity to be with children is smaller or rather do not have time to take care of their children, with another meaning that working mothers will reduce the time to interact with their toddlers at home and cannot even pay direct and attention to the nutritional intake needs of toddlers during growth and development (Rahmawati et al., 2020).

Family income in this study is related to stunting toddlers (p=0.028). The incidence of stunting in toddlers in families with income below or equal (58.7%), compared to families with income equal or above (41.3%). There is an association between low income and the incidence of stunting in Ngalang Village because the majority of residents have jobs but with inconsistent income (33.48%) (Ngalang, 2022). Research by Zahra et al. (2023) states that (p=0.001) means a significant relationship exists between family income and the condition of stunting toddlers. Income in the family generally determines the family's economic status, as well as the relationship between income results and the work of each individual in the family. Employment with high income will make it easier for families to fulfill their primary, secondary, and tertiary needs, which is a parameter of household capacity related to family income. Families with higher incomes will find it easier to access the fulfillment of their life needs, but inversely, if the family has a low income, it will be more challenging to fulfill their life needs (Noorhasanah & Tauhidah, 2022).

The results of this study are supported by many studies that have proven that there is a relationship between family monthly income and the incidence of stunting, including research Nurwahyuni et al. (2023), Khati & Ariesta (2023) and Cahyadi et al. (2023), however, different results with research Husna et al. (2023) reported the results of the chi-square test in their research obtained p = 0.204, meaning that the incidence of stunting is not related to the income of a family. The difference lies in the existence of other factors that cause the incidence of stunting to have no relationship with the income of a family because the income in the family is spent or spent on other needs and not entirely for basic food needs. Furthermore, in terms of the daily nutritional needs of toddlers, from the expertise of mothers in the family to choose quality raw materials and process them into food that is worth eating with a varied menu containing balanced nutritional elements every day, thus toddlers still get fulfilled nutrition and reduce the risk of stunting (Lemaking et al., 2022).

Conclusions

The study's results conclude that the characteristics of the Ngalang community, including the father's occupation and family income, are associated with the incidence of stunting in Ngalang.

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