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The influence of socio-economic conditions of farming families on stunting incidents in Ogan Ilir Regency

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ABSTRACT Stunting is one of the health problems that we need to overcome together. Through Presidential Regulation No. 72 of 2021, the Indonesian Government has regulated the national strategy to accelerate stunting reduction. The presidential regulation is a derivative regulation of the Government in Ogan Ilir Regency to reduce the incidence of stunting, especially in farming families. The research was carried out on farming families, based on the certificate of legal basis in Ogan Ilir in 2023, Number 188/KEP/DPPPAPPKB/ 2023, concerning Locuses Village for the Acceleration of Stunting Reduction. The purposive sampling technique was used to take the samples by administering a questionnaire containing 12 questions grouped into three sections. The data obtained were analyzed using quantitative descriptive analysis and partial least squares (PLS). The research results showed that cultural value factors are most influenced by feeding toddlers according to the culture in the environment, feeding toddlers according to the family's culture, selecting parenting patterns for toddlers based on the environment, and parenting patterns for toddlers based on the family. All variables have a convergent validity and have interrelated relationships. The socio-economic conditions of farming families and incidences of stunting in Ogan Ilir Regency were 59.8%. Cultural value factors very significantly influenced it. The remaining 40.2% was influenced by other variables not used in the research model. The moderation effect strengthens the cultural value factor of farming families on stunting incidence in Ogan Ilir Regency. The implications of this research as a policy maker for the Ogan Ilir district government to reduce the incidence of stunting.

1. INTRODUCTION

Ogan Ilir Regency is one of the regions in Indonesia that is still struggling to eradicate the problem of stunting. Statistical data showed that the Ogan Ilir Regency is the second largest area with stunting sufferers in South Sumatra, with 41.9%, and the Lahat Regency is 48.1%. However, in 2021, the Lahat Regency could reduce the rate of stunting sufferers to 22.4%, while the Ogan Ilir Regency could only reduce it by 29.2% (SSGI, 2021) even though the WHO limited the number of stunting sufferers to no more than 20% (SSGI, 2021). Stunting can be interpreted as a failure to grow in children (Amiruddin, 2021a) and causes the body's organs not to grow and develop optimally according to their true genetic potential due to long-term malnutrition (Kemenkes RI., 2016b). This made children under five years of age shorter than ordinary children of their age and have delays in thinking (Amiruddin, 2021a; Andriyanto et al., 2017; Kemenkes RI, 2016a).

The incidence of stunting was caused by many factors, both directly and indirectly, which could be measured or were still in the measurement stage. Some known causes of stunting were maternal factors and poor parenting, especially children's behavior and feeding practices (Amiruddin, 2021a). Primarily if the mother does not provide adequate and suitable nutritional intake for children under five. Complementary feeding (MPASI) is a critical transition period in a baby's life marked by a gradual shift from breast milk to family food (Amperaningsih et al., 2018; Heryanto, 2017). Increasing food adequacy in this crucial period is one of the most cost-effective strategies for improving the overall health of babies and ensuring their nutritional well-being (Andadari & Mahmudiono, 2017). However, the realization in the field was not as easy as imagined, primarily for farming families who had difficulty meeting the family's daily nutritional needs.

Statistical data showed that Ogan Ilir Regency is an agricultural area, so most of its people work in agriculture, with an average of 48% of the total labor absorption (BPS, 2024). The average income of a farming family varies depending on the type of crop cultivated, which could be worth far above or below the 2024 Ogan Ilir Regency minimum wage of IDR 3,456,874.-. This affects the ability of farming families to meet the nutritional needs of toddlers, thereby influencing

the choice of additional food types, timing of feeding, and healthy living habits (Lestari et al., 2018). Low economic status caused unaffordability in fulfilling daily nutrition, which significantly affected the incidence of malnutrition (Adebisi et al., 2019) and stunting (Diniarti et al., 2019), because toddlers from families with low economic status had twice the risk of experiencing stunting compared to toddlers from families with high financial status (Utami et al., 2019).

Based on the above, the objectives of this research were 1) to analyze the influence of cultural values of farming families on stunting incidence in Ogan Ilir Regency, 2) to determine the relationship between variables of socioeconomic conditions of farming families on stunting incidence in Ogan Ilir Regency, and 3) to determine the moderating effect between variables of socio-economic conditions of farming families on stunting incidence in Ogan Ilir Regency.

2. METHOD

This research was conducted on malnourished mothers of toddlers aged 13 to 59 months in farmer families located in 9 Posyandu in 3 different sub-districts based on the certificate of legal basis in Ogan Ilir in the year 2023, Number 188/KEP/DPPPAPPKB/ 2023 concerning Locuses Village for the Acceleration of Stunting Reduction. The selection of subjects was because there are many stunting sufferers in Ogan Ilir Regency whose parents work as farmers, where the research subjects live was a swamp area, the need for toilets used less flowing river water (river ditches 2-3 meters wide), parenting patterns and the environment (sanitary hygiene) were still lacking, and it was a transition area and river watershed (DAS). The sample used a purposive sampling technique with the criteria that the respondent worked as a farmer (in the broadest sense), had a toddler diagnosed with malnutrition with a nutritional status <-2 SD (BB/U), based on data from a health center that contained a stunting locus, and was willing to be a respondent because data would be taken on the date of birth, date of measurement, weight and height of the toddler and then analyzed for Z-Score using the Who Anthropometry application.

The research questionnaire contained 12 questions grouped into three sections. The first part consisted of 6 questions related to cultural values (firstly, selection of parenting patterns for toddlers based on parents, selection of parenting patterns for toddlers based on the environment, feeding toddlers according to family culture, feeding toddlers according to culture in the environment, rationalization of providing food sources for toddlers, amount of income versus availability nutritional food). Part 2 consisted of 5 questions about demographics (number of family dependents, number of children, income, birth spacing, mother's age). The third section consisted of 1 question related to farming families on stunting incidence in Ogan Ilir Regency.

The data obtained were analyzed using quantitative descriptive analysis and PLS-SEM analysis using the outer and inner models. The PLS test was able to test many independent variables, displaying symptoms of multicollinearity. The quantitative descriptive analysis explained the demographic characteristics of respondents, while the PLS-SEM analysis explained the research objectives displayed using averages, percentages, and frequencies.

3. RESULT & DISCUSSION

Lack of maternal knowledge regarding nutrition before and during pregnancy and knowledge of healthy eating patterns are some of the causes of stunting. The results of this research are supported by several previous studies that have stated that maternal knowledge and cultural factors significantly influence the incidence of stunting.

3.1 Respondent Characteristics

The demographic characteristics of the respondents, which can be seen in Table 1, it showed that all respondents were women (100%); age range 31-65 years (52.3%); mother's education level was elementary school (61.4%) and father's education level was also elementary school (59.1%); had 1-2 children (45.4%); had family dependents of 4-6 people (52.3%); birth interval 2-5 years (72.7%) and with a monthly income of IDR 1,000,000 – IDR 2,000,000 (79.6%).

Table 1. Demographic Characteristics of Respondents

Caregiver Gender	%	Caregiver Age	%
Female	100	15-30 years	47.7
Male	0	31-65 years	53.2
Mother's Education	%	Father's Education	%
Elementary school	61.4	Elementary school	59.1
Junior high school	11.4	Junior high school	13.6
Senior high school	22.7	Senior high school	25.0
College	4.5	College	2.3
Number of children	%	Number of Family Dependents	%
1 – 2 people	45.4	1 – 3 people	45.4
3 – 4 people	50.0	4 – 6 people	52.3
≥ 5 people	4.6	> 6 people	2.3
Child Birth Distance	%	Family Income	%
0 – 1,5 years	15.9	< 1,000,000	4.5
2 – 5 years	72.7	1,000,000 – 2,000,000	79.6
> 5 years	11.4	> > 2,000,000	15.9

Source: Processed Primary Data (2023)

The results of research on formative indicators of demographic factors showed that the number of dependents' family, number of children, mother's age, birth spacing, and family income influence the socio-economic conditions of farming families on stunting incidence in Ogan Ilir Regency (Table 1). The size of the family's responsibilities and the number of children both indicated that the more family members had to have their needs met with a mediocre income, the higher the risk of a lack of daily nutritional needs for toddlers because the mother of a farming family might be able to share the family income to meet living needs including clothing, food, and shelter.

The average income of a farming family was IDR 1,000,000 – IDR 2,000,000- which was far below the UMK for Ogan Ilir Regency in 2024 year of IDR 3,456,874,-. Low-income levels dominate the incidence of thinness and shortness (stunting) in children xx (Raharja et al., 2019). The average age of mothers in farming families was 2 – 5 years between pregnancies. Mental disorders in mothers and children's birth distances that are too close together can

Table 2. Analysis of the Achievement of Each Indicator of Students' Procedural Fluency Test Results Using the BBL Model

Indicator	Number of Respondents Selecting Score					Average Score
	1	2	3	4	5	
Selecting parenting styles for toddlers was based on the toddler's grandparents	7	31	0	6	0	2.1
Selecting parenting patterns for toddlers based on environment	4	36	0	4	0	2.1
Feeding toddlers according to family culture	2	12	0	29	1	3.3
Feeding toddlers according to environment culture	2	22	0	19	1	2.9
Rationalizing the provision of food sources for toddlers	0	8	0	33	3	3.7
The amount of income relative to the availability of nutritious food	3	2	0	37	2	3.8

Source: Processed Primary Data (2023)

be factors causing stunting (Vaivada et al., 2020). This was because mothers had the most significant role in raising children. If the mother felt that she was not ready to have children or was overwhelmed in taking care of children due to the close birth distance, there was a risk that parenting patterns would not be optimal.

3.2 The Influence of Farming Family Cultural Values on Stunting Incidents in Ogan Ilir Regency

A total of 6 indicators were used to measure consumption variables, one of the socio-economic conditions of farming families in Ogan Ilir Regency. The following was a recapitulation of the scores for the cultural value indicators of farming families, presented in Table 2.

The majority of respondents agreed that uncertain income made farmer mothers less able to provide balanced nutritious food for toddlers; fish was the side dish most often served to families compared to meat and fruit; and mothers feed toddlers according to the culture of the family and the environment where they lived (Table 2). A lack of food caused inappropriate complementary feeding practices, poor caregiver knowledge about optimal infant feeding, lack of awareness, and detrimental beliefs and culture (Maingi et al., 2020). Most of the Ogan Ilir people still adhered to a patriarchal system where the lineage was taken from a father and the social status of men was higher than that of women. There was a culture of prioritizing fathers when it came to eating and separating the food served to fathers and other family members. Low education means families cannot challenge this culture. This situation caused children's growth to be stunted and, over time, would result in many toddlers suffering from stunting (Harahap, 2021). Apart from that, there were restrictions on consuming certain types of food, which cultural factors or beliefs could influence.

Taboos based on beliefs generally contain symbols or advice considered good or bad, gradually becoming a habit in the family and environment. This culture influenced farmer women in determining what to eat, how it was processed, prepared, and served, and for whom and under what conditions the food was consumed. One of the types of food that was most forbidden to children was meat. Statistical data showed that the consumption of animal protein for fish/shrimp/squid/shellfish was 9.44 grams or higher compared to meat consumption of 3.1 grams (BPS, 2023). Meat is a source of animal protein rich in protein and iron for the growth and development needs of toddlers, whose needs are higher than those of adults whose growth has stopped (Sundari & Nuryanto, 2016). Therefore, mothers of farming families might be able to adapt to the latest knowledge and evaluate the best eating culture according to current developments for their children.

3.3 The Relationship Between Variables: Socio-Economic Conditions of Farming Families on Stunting Incidents in Ogan Ilir Regency

A total of 1 indicator was used to measure the outcome variable of socio-economic conditions on stunting incidence in farming families in Ogan Ilir Regency. The following was a recapitulation of the indicator scores for the socio-economic conditions of farming families, presented in Table 3.

Most respondents agreed that their socio-economic conditions were one of the causes of toddlers experiencing stunting, with a value of 4.1 (Table 3). The respondents realized that their family income was still insufficient for their daily needs, especially the nutritional needs of toddlers, but they had done their best. The Government needed to take part in helping farmer parents meet their family's living needs. Some of the most vital indicators for each variable were presented in Table 7 to assist the Government in formulating policies that were right on target according to the socio-economic conditions of farming families regarding stunting incidence in Ogan Ilir Regency.

The most vital indicators of the cultural value factor were feeding toddlers according to culture in the en-

Table 3. Results Indicator Scores for Socio-Economic Conditions of Farming Families

Indicator	Number of Respondents Selecting Score					Average Score
	1	2	3	4	5	
Results of the Socio-economic conditions of farming families	0	0	0	38	6	4,1

Source: Processed Primary Data (2023)

Table 4. Loading Factor Value, P-value, and AVE Value of Socio-Economic Conditions of Farmer Families on Stunting Incidents in Ogan Ilir Regency

Variable	Indicator	Loading Factor	P-value	AVE	Information
Cultural Value Factors	Selecting parenting styles for toddlers was based on the toddler's grandparents	0716	<0,001		
	Selecting parenting patterns for toddlers based on environment	0,770	<0,001		
	Feeding toddlers according to family culture	0,772	<0,001	0,710	Had convergent validity
	Feeding toddlers according to environment culture	0,805	<0,001		
	Rationalizing the provision of food sources for toddlers	0,438	<0,001		
	The amount of income relative to the availability of nutritious food	0,694	<0,001		
Demographic Factors	Number of family dependents	0,909	<0,001		
	Number of family dependents	0,909	<0,001		
	Income	0,187	<0,093	0,745	
	Number of children	0,909	<0,001		
	Birth interval	0,608	<0,001		
	Mother's age	0,847	<0,001		

Source: Processed Primary Data (2023)

vironment (0.805), feeding toddlers according to culture in the family (0.772), choosing parenting patterns for toddlers based on the climate (0.770), and choosing parenting patterns for toddlers based on the toddler's grandparents (0.716). This showed that choosing a culture appropriate to current developments could reduce the risk of stunting in Ogan Ilir Regency.

The most vital indicators of demographic factors were the number of family dependents (0.909), the number of children (0.909), and the mother's age (0.847). If the mother of a farming family had the ideal number of family dependents as well as the ideal number of children according to her personal and economic abilities and was of mature age, both physically and mentally, then the mother could undergo the process of assisting her child's growth and development better so that it could reduce the risk of stunting in Ogan Ilir Regency.

3.4 Moderating Effect Between Variables of Socio-Economic Conditions of Farming Families on Stunting Incidences in Ogan Ilir Regency

The results of the socio-economic conditions of farmer families on stunting incidence in Ogan Ilir Regency were 59.8%, which was significantly influenced by cultural value factors. The remaining 40.2% was influenced by other variables not used in the research model. A positive path coef-

ficient meant that increasing the variable's value would increase the value of socio-economic conditions on stunting incidence in Ogan Ilir Regency. Meanwhile, a negative path coefficient meant that decreasing the variable's value would reduce the socio-economic value of stunting incidence in Ogan Ilir Regency. The path coefficients and p-values between the variables of socio-economic conditions of farming families on stunting incidence in Ogan Ilir Regency were presented in Table 5.

4. CONCLUSION

The cultural value factor was most influenced by feeding toddlers according to the culture in the environment, feeding toddlers according to the culture in the family, choosing parenting patterns for toddlers based on the environment, and choosing parenting patterns for toddlers based on the family. All variables had convergent validity and interrelated relationships. The results of the socio-economic conditions of farmer families on stunting incidence in Ogan Ilir Regency were 59.8%, which was significantly influenced by cultural value factors. The remaining 40.2% was influenced by other variables not used in the research model.

5. SUGGESTION

The advice that can be given in this research is that the Government is expected to be fully committed to alleviating the

Table 5. Path Coefficients Value and P-Values between Socio-Economic Condition Variables of Farming Families on Stunting Incidences in Ogan Ilir Regency

No	Variable	Path Coefficients values	P-Values
1	Cultural Value Factors	-0,476	(<0,001)***
2	Demographic Factors	-0,126	(0,191)
3	Cultural Value Factors X Demographic Factors	0,007	(0,480)

Source: Processed Primary Data (2023)
Description: ***,**,* indicates significance levels of 1%, 5% and 10%

problem of stunting at the household level, especially farming families, so they can achieve the target limit of stunting sufferers below 20%. It is hoped that future researchers will be able to expand and continue this research model in their respective regions and Indonesia as a whole so that general results can be obtained on the behavior of women in farming families regarding the incidence of stunting.

References

Adebisi, Y. A., Ibrahim, K., Lucero-Prisno, D. E., Ekpenyong, A., Micheal, A. I., Chinemelum, I. G., & Sina-Odunsi, A. B. (2019). Prevalence and Socio-Economic impacts of Malnutrition among Children in Uganda. *Nutrition and Metabolic Insights*, 12(November), 10–15. https://doi.org/10.1177/1178638819887398

Amiruddin, A., Bustami, B., Anasril, Herlambang, T. M., Husaini, M., & Gustini, S. (2021a). Phenomenology Study of Stunting Nutrition for Babies in the Work Area of Pante Kuyun Health Center, Aceh Jaya District. *Open Access Macedonian Journal of Medical Sciences*, 9, 462–467. https://doi.org/10.3889/oamjms.2021.6000

Amiruddin, A., Bustami, B., Anasril, Herlambang, T. M., Husaini, M., & Gustini, S. (2021b). Phenomenology Study of Stunting Nutrition for Babies in the Work Area of Pante Kuyun Health Center, Aceh Jaya District. *Open Access Macedonian Journal of Medical Sciences*, 9, 462–467. https://doi.org/10.3889/oamjms.2021.6000

Amperaningsih, Y., Sari, S. A., & Perdana, A. A. (2018). *Pola pemberian MP-ASI pada Balita Usia 6-24 bulan*. *Jurnal Kesehatan*, 9(2), 310–318. https://doi.org/10.26630/jk.v9i2.757

Andadari, D. P. P. S., & Mahmudiono, T. (2017). Keragaman Pangan dan Tingkat kecukupan Energi serta Protein pada Balita. Amerta Nutrition, 1(3), 172–179. https://doi.org/10.20473/amnt.v1i3.6242

Andriyanto, A., Ibnu, F., & Hidayati, R. N. (2017). Risk factors that cause dtunting in indonesia. *International Journal of Nursing and Midwifery Science* (IJNMS), 1(1), 46–48. https://doi.org/10.29082/ijnms/2017/vol1/iss1/35

BPS, K. O. I. (2023). *Statistik Kesejahteraan Rakyat Kabupaten Ogan Ilir*. In BPS Kabupaten Ogan Ilir (Vol. 9). PT Menara Harapan Sukses.

BPS, K. O. I. (2024). *Kabupaten Ogan Ilir Dalam Angka 2023* (Fahria, Ed.; Volume 15,). BPS Kabupaten Ogan Ilir.

Diniarti, F., Felizita, E., & Hasanudin. (2019). Hubungan Pengetahuan dengan kejadian Infeksi Menular Seksual di Puskesmas Penurunan Kota Bengkulu Tahun 2018. *Journal of Nursing and Public Health*, 7(1), 52–58. https://doi.org/10.37676/jnph.v7i1.785

Harahap, D. (2020). Gambaran Sosial Budaya Kejadian Stunting. *Skripsi*. Universitas Sriwijaya. Sriwijaya.

Heryanto, E. (2017). Faktor-faktor yang berhubungan dengan pemberian Makanan pendamping ASI dini. *Jurnal Ilmu Kesehatan*, 2(2), 141–152.

Kemenkes RI. (2016a). *Infodatin: Situasi Balita Pendek*.

Kemenkes RI. (2016b). Situasi Balita Pendek. Kementerian Kesehatan Republik Indonesia, ISSN 2442-(Hari anak Balita, 8 April), 1–10.

Kemenkes RI. (2018). Riskesdas 2018. In *Laporan Nasional Riskesdas 2018* (Vol. 44, Issue 8).

Lestari, E. D., Hasanah, F., & Nugroho, N. A. (2018). Correlation between Non-Exclusive Breastfeeding and Low Birth Weight to Stunting in Children. *Paediatrica Indonesiana*, 58(3), 123–127. https://doi.org/10.14238/pi58.3.2018.123-7

Maingi, M., Kimiywe, J., & Iron-Segev, S. (2020). Maternal knowledge in complementary feeding following Baby Friendly Community Initiative in Koibatek, Kenya. *Maternal and Child Nutrition*, 16(4), 1–8. https://doi.org/10.1111/mcn.13027

Raharja, U. M. P., Waryana, W., & Sitasari, A. (2019). The Economic Status of Parents and Family Food Security as A Risk Factor for Stunting in Children under Five Years old in Bejiharjo Village. *Ilmu Gizi Indonesia*, 3(1), 73. https://doi.org/10.35842/ilgi.v3i1.130

SSGI. (2021). Studi Status Gizi Indonesia 2021. In Kementerian Kesehatan Republik Indonesia Badan Penelitian dan Pengembangan Kesehatan Riset Kesehatan Nasional Studi status Gizi Indonesia 2021 Kuesioner Individu.

Sundari, E., & Nuryanto. (2016). Hubungan Asupan Protein, Seng, Zat Besi, dan Riwayat Penyakit Infeksi dengan Z-score Tb/U pada Balita. *Jurnal Of Nutrition College*, 5(4), 520–529.

Utami, R. A., Setiawan, A., & Fitriyani, P. (2019). Identifying Causal Risk Factors for Stunting in Children under Five Years of age in South Jakarta, Indonesia. *Enfermeria Clinica*, 29(xx), 606–611. https://doi.org/10.1016/j.enfcli.2019.04.093

Vaivada, T., Akseer, N., Akseer, S., Somaskandan, A., Stefopulos, M., & Bhutta, Z. A. (2020). Stunting in Childhood: An Overview of Global Burden, trends, Determinants, and Drivers of Decline. *American Journal of Clinical Nutrition*, 112, 777S-791S. https://doi.org/10.1093/ajcn/nqaa159