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Sociological and Anthropological Studies of Stunting Families in Malang Regency

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ABSTRACT

Stunting is a growth disorder in toddlers and is often found in children aged less than 24 months. Basic Health Research stated that the national prevalence of stunting under five children in 2013 was 37.2%, which means there was an increase compared to 2010 (35.6%) and 2007 (36.8%). The prevalence of stunting under five in Malang Regency tends to increase in the first 3 years and decrease in the last 2 years during the 2012-2016 period. The highest prevalence was in 2014 at 30.6% and the lowest prevalence occurred in 2016 at 22.9%. The purpose of this study was to analyze the sociological and anthropological factors of stunting families in Malang Regency. This study employed a qualitative approach and design to examine the issue of stunting in three villages within Malang Regency. The study focused on families with stunted children as the primary participants. A total of 33 families were selected as samples, with 11 families chosen from each village. In addition to the families, the study also conducted Focus Group Discussions (FGDs) with various stakeholders. The participants in the FGDs included village heads, cadres, teachers, religious leaders, and members of the village's women's organization. Each village had five participants, resulting in a total of 15 participants across the three villages. The collected data were analyzed using a descriptive approach, which allowed for a comprehensive understanding of the research findings. Among the pregnant women surveyed, 78.8% followed a satisfactory pattern of consuming food three times a day. However, only 24.2% demonstrated a balanced diet during pregnancy, including staple foods, vegetables, animal and vegetable side dishes, fruits, and milk. Some pregnant women adhered to food taboos based on their beliefs, avoiding sea fish, kelotok fish, petai, pineapple, and durian. Breastfeeding was practiced by 93.9% of the surveyed households. However, 60.61% of toddlers showed a severe deficit in energy intake, while 69.7% consumed an excessive amount of protein. Fat intake was reported by 39.39% of respondents, and carbohydrate intake by 87.88%. In terms of knowledge levels, 15.1% of respondents exhibited good knowledge, 30.3% had moderate knowledge, and 45.5% had lower levels of knowledge. Regarding sanitation, 81.82% of households had access to latrine services, while 18.18% did not. Drinking water sources varied, with 18.82% relying on boiled water and 18.18% using bottled water. However, cleanliness within most of the respondents' residences was still lacking. Several anthropological and sociological factors play a significant role in the occurrence of stunting in toddlers, which include factors of maternal eating habits during pregnancy, dietary restrictions, the mother's knowledge of nutrition and feeding practices, and poor household sanitation. These factors contribute to the prevalence of stunting in young children.

Keywords: stunting; sociology; anthropology

INTRODUCTION

Stunting is a growth disorder and is often found in children younger than 24 months. The first 1000 days of life starting from pregnancy to the age of two years is a window of opportunity, it means that this will be a short time opportunity to do something to benefit the children's growth, then through the intake of foods rich in nutrients it is expected that it will help children grow to meet the needs of optimal physical and cognitive potential.[(1-6)] The high prevalence of stunting in children aged 0-23 months in Indonesia today can reduce the

quality of Indonesian Human Resources (HR). The quality of Indonesian people is lower than neighboring countries such as Malaysia, Thailand, and the Philippines. Indonesia's Human Development Index (HDI) ranking in 2011 was 124 out of 187 countries, while Malaysia was 61, Thailand 103, and the Philippines was 112.[7-12]

Various factors can influence the occurrence of stunting. Families with low economic status have a risk of stunting 4.13 times greater than children with high family economic status in children aged 2-3 years in East Semarang. Research in Sumatra also states that toddlers from families with low economic status were 1.29 times at risk of stunting compared to toddlers from families with high economic status. One of the problems in feeding infants is the cessation of breastfeeding and inadequate complementary feeding. WHO (2007), recommends exclusive breastfeeding for the first 6 months of life and continued with the introduction of complementary feeding by continuing to breastfeed until the age of 2 years.[13] Teshome, et al. (2009) stated that complementary feeding that is introduced too early (<4 months) had the risk of suffering from stunting.

Socio-economic factors including income per capita, parental education, mother's knowledge of nutrition and the number of family members in the household are also indirectly related to the incidence of stunting. Income will affect the fulfillment of family nutrition and the opportunity to attend formal education. Low education accompanied by low nutritional knowledge is often associated with the incidence of malnutrition.[14-17]

The prevalence of very short toddlers in Malang Regency in 2012-2016 increased in the first 3 years and decreased in the later 2 years with the highest prevalence occurring in 2014 at 11.3% and the lowest in 2016 at 6.4%. The prevalence rate of very short toddlers in Malang Regency in 2016 was lower when compared to the average prevalence rate of East Java which was 7.5% and the national prevalence rate was 8.5%.

Based on the Presidential Regulation of the Republic of Indonesia Number 42 of 2013 about the National Movement for the Acceleration of Nutrition Improvement, many institutions are involved in tackling nutritional problems, including the handling of stunting problems.

Based on the results of the Focus Group Discussion (FGD) with several leaders/staff of institutions involved in handling stunting problems on March 16-17, 2020 at Hotel 101 Malang, it is considered necessary to have a sociological and anthropological study of stunting families in Malang regency which consists of the identification of many social, environmental, and anthropological factors that affect the incidence of stunting in children under five.

Based on the data above, it is necessary to conduct research with the title: Sociological and Anthropological Studies of Stunting Families in Malang Regency. The purpose of this study was to analyze the stunting families in Malang Regency to study about stunting families from the perspectives of sociology and anthropology.

METHODS

This study used a qualitative research approach and design with the aim of examining the sociological and anthropological variables of stunting families in Malang Regency. This approach was used on the basis that in qualitative research, besides being able to describe what happened, it can also explain the hidden values. Research with a qualitative approach is more sensitive to descriptive information because this type of research seeks to maintain the integrity of the object under study. The targets in this study were families who had stunted children in 3 villages in Malang Regency. From each village, 11 stunting families were taken as the respondents, so the total respondents were 33 families. The targets in the Focus Group Discussion were the head of the village, cadres, teachers, religious leaders, and members of the village's women organization. The number of targets per village was 5 people, so the total target was 15 people. The data were analyzed descriptively.

RESULTS

In the villages of Karangsari, Dilem, and Ngawonggo, the average age of fathers was 38 years, while the average age of mothers was 33 years. Most parents have completed their education up to Junior/Senior High School. The education level of parents, especially mothers, has an impact on their parenting style, including purchasing decisions and food choices. Lower levels of maternal education can affect exclusive breastfeeding, complementary feeding, and the provision of nutritionally balanced meals.[18] Among the surveyed parents, 12 fathers work in private companies, while 22 mothers are unemployed or work as housewives. The employment status of parents is an indirect factor that can contribute to stunting in toddlers due to its association with income. When mothers are unable to work and contribute to the family's financial needs, it can hinder access to adequate healthcare services for their children.[19] In terms of income, the average monthly income of parents in these three villages was Rp. 790,000. The average income of parents falls below the minimum wage set in Malang Regency (Rp. 3,018,275). Families facing stunting issues in these villages typically have incomes below the minimum wage. On average, households in these villages spend Rp. 1,071,000 per month on food. Despite this, the average family food expenditure in these villages still accounts for more than 60% of their income, with 21 families classified as food insecure.[20]

Table 1. Distribution of family characteristics

Characteristics		Frequency	Percentage
The age of the father			
1.	18-29 y.o	7	21.2
2.	30-49 y.o	24	72.7
3.	50-64 y.o	1	3
4.	64-80 y.o yrs	1	3
5.	>80 y.o	0	0
The age of the mother			
1.	18-29 y.o	14	42.4
2.	30-49 y.o	18	54.5
3.	50-64 y.o	0	0
4.	64-80 y.o	0	0
5.	>80 y.o	1	3
Father's education			
1.	No school	0	0
2.	Elementary school	15	45.5
3.	Junior High	13	39.4
4.	Senior High	4	12.1
5.	Bachelor Degree	1	3
Mother's education			
1.	No school	1	3
2.	Elementary school	8	24.2
3.	Junior High	16	48.5
4.	Senior High	5	15.2
5.	Bachelor Degree	3	9.1
Father's occupatiohn			
1.	Laborer	6	18.2
2.	Farmer	8	24.2
3.	Flea market seller	1	3
4.	Coolie	2	6.1
5.	Entrepreneur	4	12.1
6.	Private company worker	12	33.3
Mother's occupation			
1.	Housewife	22	66.7
2.	Farmer	1	3
3.	Entrepreneur	1	3
4.	Laborer	2	6.1
5.	Teacher	2	6.1
6.	Private company worker	5	15.2
Income (Rp.)			
1.	< 500.000.00	1	3
2.	600.000 - 1.500.000.00	21	63.6
3.	1.600.000 - 3.000.000.00	7	21.2
4.	> 3.100.000	4	12.1
Family spending (Rp.)			
1.	< 500.000.00	6	18.2
2.	600.000 - 1.500.000.00	24	72.7
3.	1.600.000 - 2.000.000.00	1	3
4.	> 2.100.000	2	6

In 3 villages, Karangsari, Dilem, and Ngawonggo, there were 13 under five boys and 20 under five girls (39.4% boys and 60.6% girls). The average age of toddlers was 30 months. The age of the youngest toddler was 8 months, while the age of the oldest toddler was 50 months. Most toddlers are 2nd child toddlers in their family. There were also 14 toddlers as 1st child. The order of children in the family affects the experience of parenting. In the results of this study, it was found that most children are the first children in the family, so that the experience of parents in caring for and fulfilling children's nutritional intake is still lacking.

In Karangsari, Dilem, and Ngawonggo, the average birth weight of toddlers was 2.4 kg. There were 24.2% of toddlers who still have a birth weight of 1.1 - 2.5 kg, while 75.8% of toddlers were already had a birth weight between 2.5 - 3.6 kg, the lowest birth weight of toddlers is 1.1 kg, while the highest toddler birth weight was 3.6 kg. A history of LBW is one of the factors causing stunting, while the impact will affect the growth of toddlers and will have low anthropometric scores from time to time.[19] The average birth length of toddlers is 46.2 cm. As many as 12.1% of toddlers have a birth length of less than 45 cm, 39.4% of toddlers between 45-48 cm, and 48.5% of toddlers more than 49 cm. The lowest toddler birth length is 41 cm, while the highest toddler birth length is 56 cm. The history of illness showed heart disease by 3% (1 toddler), 3% allergies (1 toddler), 3% seizures (1 toddler), and inflammation of the respiratory tract 3% (1 toddler). A history of infectious diseases under five is a direct

cause of stunting. The presence of infectious diseases can cause a decrease in the child's appetite so that there is a lack of nutritional intake, and if it occurs for a long period of time, it can result in impaired child height growth.(6)

In 3 villages, Karangsari, Dilem, and Ngawonggo, the average z-score with an indicator of weight for age is -1.6 SD, where the results are included in the normal weight category, which is between -2 SD and +1 SD. A total of 9.1% of toddlers still have a very low body weight, 24.2% have a low body weight, and 66.7% of toddlers already have a normal weight. The lowest z-score¬ value for the indicator of body weight by age is -5.8 SD which is included in the very low weight category because the score is less than -3 SD. While the highest z-score value is +0.7 SD which includes into normal weight.(21) The average z-score value based on the indicator of height for age is -2.9 SD, where the result is included in the short (stunted) category because it is between -3 SD and -2 SD. A total of 33.3% of toddlers showed very short results and 66.7% of toddlers were short. The lowest z-score value for the indicator of height according to age is -5.3 SD which is included in the very short category (severely stunted) because it has a value of less than -3 SD. While the highest z-score value for the indicator of height by age is -2.1 SD which is included in the short (stunted) category because it has a value between -3 SD and -2 SD(21) the z-score value based on the indicator of weight for height is -0.3 SD, where the result is included in the good nutrition category because it is between -2 SD and +1 SD. As many as 3% of children under five are still in the category of poor nutrition, 18.2% are in the category of undernourished, while 78.8% are in the category of good nutrition. The lowest z-score¬ value for the indicator of weight by height is -5.9 SD which is included in the category of severe malnutrition (severely wasted) because it has a value of less than -3 SD. While the lowest z-score value for the indicator of weight according to height is +2.9 SD which is included in the good nutrition category because it is between -2 SD and +1 SD.(21)

Table 1. Toddler's characteristics

Characteristics		Frequency	Percentage
Gender			
1.	Male	13	39.4
2.	Female	20	60.6
Toddlers' age			
1.	6-12 months	3	9.1
2.	12-36 months	17	51.5
3.	37-59 months	13	39.4
Toddlers' position in family			
1.	1	14	42.4
2.	2	11	33.3
3.	3	5	15.2
4.	4	3	9.1
Birth weight			
1.	1,1-2,4 kg	8	24,2
2.	2,5 - 3,6 kg	25	75,8
Birth body length			
1.	< 45 cm	4	12.1
2.	45 - 48 cm	13	39.4
3.	> 49 cm	16	48.5
Illness history			
1.	Congenital heart disease	1	3
2.	Allergy	1	3
3.	Seizure	1	3
4.	Repiratory inflammation	1	3
Body weight compared with the age			
1.	Very low body weight	3	9.1
2.	Low body weight	8	24.2
3.	Normal body weight	22	66.7
4.	At risk of excessive body weight	0	0
Body height compared with the age			
1.	Very short	11	33.3
2.	Short	22	66.7
3.	Normal	0	0
4.	Tall	0	0
Body weight compared with body height			
1.	Badly nourished	1	3
2.	Malnourished	6	18.2
3.	Good nourished	26	78.8
4.	At risk of overnourished	0	0
5.	Overnourished	0	0
6.	Obesity	0	0

The need for energy and macronutrients, such as protein, fat and carbohydrates, is obtained from food consumed daily, their staple foods, animal side dishes, vegetable side dishes and vitamins and minerals from vegetables and fruits. Classification of energy intake and macronutrients protein, fat and carbohydrates can be seen in the table 3.

Table 3. Classification of energy and macronutrients intake based on the needs according to Gibson (2005)[22]

Classification	Energy		Protein		Fat		Carbohydrate	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Serious deficit	20	60.61	4	12.12	13	39.39	29	87.88
Medium deficit	5	15.15	1	3.03	2	6.06	1	3.03
Mild deficit	3	9.09	0	0.00	5	15.15	0	0.00
Normal	4	12.12	5	15.15	9	27.27	3	9.09
Excessive	1	3.03	23	69.70	4	12.12	0	0.00

If viewed from the results of the classification of the energy and macronutrient intakes of the respondents, it was found that the intake of respondents had not yet reached the normal category and the composition of the food composition of the respondents was still not balanced. In this study, 60.61% respondents showed a severe category of deficit energy intake. Then 69.7% respondents' was in the excess category of protein intake. Furthermore, the respondent's fat intake showed a weight deficit of 39.39%, but 27.27% of the respondent's fat intake had met the needs. Meanwhile, the majority of respondents' carbohydrate intake showed a severe deficit of 87.88%. In this case, the category of energy and macronutrient intake refers to Gibson's (2005)[22] classification, consists of severe deficit (<70%), moderate deficit (70-79%), mild deficit (80-89%), normal (90-119%) and excess (≥120%).

DISCUSSION

According to the Secretary of Ngawonggo Village, providing complementary food and understanding its benefits for toddlers is crucial in addressing stunting. It is also important to highlight the age range of stunted children as specified in Permenkes RI No. 2 of 2020,[23-24] which pertains to child anthropometry standards. In Ngawonggo Village, the term used for stunting is "midget," referring to individuals who are small or short. This condition has been present for a long time, affecting both males and females. Stunting in the village is commonly believed to be inherited from the father rather than the mother, with a higher prevalence among males. Historically, little effort or treatment was given to children experiencing stunting, as it was considered a result of heredity by the local community.

The socio-economic status of individuals affected by stunting in Ngawonggo Village does not solely depend on low-income families, as there are also affluent families facing this issue. In cases where pregnant women experience hypertension, the risk of low birth weight (LBW) becomes a contributing factor to stunting among toddlers in economically privileged families. For instance, there were two cases in Ngawonggo Village where pregnant women at 9 months gestation (approximately 37-38 weeks) suffered from hypertension during pregnancy, resulting in babies weighing less than 2 kg (1.7 kg) with a body length of 42 cm.

A majority of children in Ngawonggo Village exhibit poor appetite when it comes to consuming staple foods and vegetables. They often prefer snacks such as biscuits, wafers, and milk as their daily meals. Many children refuse to eat vegetables as a side dish, which may be influenced by cultural factors and their parents' eating habits. According to the community, the growth of children in Ngawonggo Village is perceived to be without any significant issues.

Both pregnant women and their husbands in Ngawonggo Village adhere to dietary taboos, often influenced by ancient beliefs and mystical associations. These taboos are commonly followed when the pregnant woman's family lives with grandparents or parents who still uphold these traditional practices. Some of the food taboos include: pregnant women avoiding fish consumption, husbands refraining from smoking to prevent their children from getting sore eyes, pregnant women avoiding pineapple, durian, and ice (as it is believed to cause excessive growth or colds in babies), and postpartum mothers avoiding brothy foods and opting for dry foods to aid in the quick healing of delivery wounds. In cases of cesarean section deliveries, there is a belief that it can hinder smooth breastfeeding. Nursing mothers are advised against consuming chili or spicy foods as they may cause stomachaches in their children. Additionally, nursing mothers are often cautioned against drinking excessive water as it is believed to lead to colds in infants. Hot foods are also discouraged for nursing mothers, as they may cause the child to vomit or spit up. Furthermore, parents, particularly mothers, impose food taboos on children, such as avoiding ice consumption and limiting snack intake.

The primary cause of stunting in Ngawonggo Village is heredity, and there seems to be no direct correlation between food intake and stunting since there is no shortage of food for pregnant women in the village. However, another significant factor contributing to stunting is the issue of cleanliness and sanitation. Some households in

the village are situated near the river and practice open defecation, which negatively affects both health and environmental hygiene. The river water, which is used for bathing, washing, and as a toilet, is also utilized for other activities such as food preparation, including washing bran and vegetables. On the other hand, well water and the PAMSIMAS program are commonly used for drinking and cooking. Community awareness regarding sanitation and hygiene is still low, partly influenced by persistent habits of defecating in the river.

According to an interview with the village head in Dilem Village, stunting refers to a condition where a child's height does not correspond to their age, locally referred to as "kuntet." Stunting in Dilem Village is primarily attributed to inadequate parenting practices, as well as factors such as infectious diseases (premature birth, heart disease, and cataracts) and hereditary traits. In the past, there were cases where twins went undetected during pregnancy and were only discovered upon delivery. These cases exhibited signs of stunting, but due to fear of public exposure, adequate treatment was not provided. However, with the involvement of cadres and village midwives conducting door-to-door visits, the stunting rate has significantly decreased. The visits involve collecting data and identifying cases of stunting using measurements and scales, accompanied by the village midwife. The number of children monitored dropped from approximately 200 to 49. Public health centers have implemented programs that provide additional food for children whose weight does not increase, along with the provision of milk, essential items, vegetables, and assistance.

In Dilem Village, pregnant women have various eating taboos, including some who lose their appetite because they believe they shouldn't eat once the baby is born, while others have cravings and want to eat everything. The wife of the village head, for example, restricts her diet to only fruit until six months of pregnancy. Some pregnant women avoid consuming shrimp. However, these dietary restrictions can lead to babies being born with low birth weight. To address nutritional deficiencies, turtle eggs from Kalimantan are sometimes consumed. As for children, there are restrictions on certain foods due to allergies, excessive sweetness, spiciness, or sourness. However, for the most part, there are no significant dietary restrictions. It's worth mentioning that some breastfeeding mothers consume Javanese herbal medicine, which can occasionally cause diarrhea in their babies. Additionally, the habit of using cellphones while breastfeeding can impact the quality of feeding.

Several factors contribute to stunting in Dilem Village, including inadequate toddler care, working mothers, reliance on grandmothers or younger siblings to care for toddlers, premature birth, infectious diseases, low birth weight, heart disease, and cataracts. Stunting can also be attributed to a family history of stunting or mental illness. Some children who experienced stunting were raised by others. Factors such as inadequate care, lack of breast milk, and being born at a low weight (1.9 ounces) have contributed to stunting, although improvements have been observed. Previously, children in the village frequently suffered from severe to critical diarrhea. Many children are entrusted to the care of others, and exclusive breastfeeding rates among the 49 families are not at 100%, with some relying on pacifiers. Although initial breastfeeding has been initiated, there are cases where control is challenging for babies born outside the village. Other factors contributing to stunting include mothers leaving for work, birth via caesarian section, insufficient breast milk production, lack of support from husbands and family members, inadequate maternal intake, and busy schedules. In some cases, starch water is used as a substitute for breast milk. Complementary food, such as staple foods and porridge, is introduced to the 49 children after the age of six months.

It is crucial for cadres and village midwives to provide guidance and support. Families need comprehensive direction, and all aspects must collaborate and work together to address this issue.

Regarding food taboos, pregnant women have received guidance on consuming a healthy diet specifically for pregnancy. However, there are still many villagers who adhere to certain food beliefs. Some pregnant women avoid consuming Moringa due to its strong smell and the belief that it possesses magical powers. Pineapple is also avoided as it is thought to cause miscarriages. There is a belief that fruits such as pears can result in a larger fetus, making delivery more challenging. Fat is considered to be unsuitable for consumption as it is believed to cause spots on the baby. Furthermore, husbands or men in the community are prohibited from wearing a sarong around their necks (turban), slaughtering or killing animals, and hammering nails during their wife's pregnancy. Children are not allowed to consume only snacks as there is a fear that they might consume excessive snacks, resulting in a perceived bitter taste.

In this village, infants, particularly those under six months old, are often fed porridge made with bananas, coconut meat, water, and gelatin, especially at one month old.In this village, there is a lack of immunization or vaccine uptake among babies due to concerns about potential side effects on infants. An incident occurred where a mother visited the midwife's house at night because her child's temperature remained elevated for twenty-four hours, despite being informed that vaccines could cause a temporary increase in body temperature. However, some villagers still struggle to comprehend this information, possibly due to maternal anxiety impairing clear thinking. This issue can be attributed to the educational level of the community, as most individuals in the village have only completed elementary school, and the income level tends to be in the middle to lower range. The population of this village is predominantly Madurese (approximately 80%). As a result, vaccine coverage in this area is the lowest in the district, mainly due to fears of potential harm and concerns about the vaccines containing

haram (forbidden) ingredients. Misleading information disseminated through social media platforms like Youtube and chat groups contributes to these misconceptions.

CONCLUSION

In conclusion, the findings indicate concerning trends in the dietary intake of toddlers. The data reveals a severe deficit in energy intake, with 60.61% falling into this category. Surprisingly, a majority of respondents had excessive protein intake, reaching 69.7%. However, the fat intake of the respondents showed a deficit of 39.39%, although 27.27% of them managed to meet the recommended fat intake. Furthermore, a significant 87.88% of respondents demonstrated a severe deficit in carbohydrate intake, highlighting potential nutritional concerns. The study also uncovered various food taboos prevalent among the respondents. For instance, there is a belief that consuming kelotok fish leads to itching and toothache, while bananas are associated with back pain. Additionally, it is believed that the consumption of pineapple can cause increased body heat and an elevated risk of miscarriage. Notably, pineapple and fish are also believed to hinder the healing process of wounds. Lastly, respondents expressed concerns about the potential risk of miscarriage associated with the consumption of katuk leaves and durian.

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