



Evaluation of the Effect of Sociocultural Factors on the Children Stature in Langkat Regency, Indonesia

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Abstract

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BACKGROUND: Stunting is a chronic malnutrition due to insufficient nutrition for a long period of time. This condition results the child to not having a proper body height in his age and raises risks for short and long term. North Sumatra, Indonesia, is one area with frequent number of stunting incidences, especially in the regency of Langkat. Socioculture is one of the factors that are closely related to stunting since it is related to the care method of infants and children, including the fulfillment of food and family nutrition. Therefore, failing to provide these supports will cause stunting to emerge.

AIM: This study was aimed to investigate the relationship between sociocultural factors and babies and toddler with stunting, particularly in Langkat Regency, Indonesia.

METHODS: This study is a descriptive correlation using survey to determine the sociocultural relationship of the community to the incidence of stunting in Langkat district, especially the Secanggang subdistrict. Using total sampling method, 136 family/parents that have babies/children were chosen. Data were collected through questionnaires, which consisted of demographic data, sociocultural data, and health status. Furthermore, data analysis was performed using Chi-square statistical test, while multivariate test analysis was conducted through logistic regression.

RESULTS: This research discovers and confirms that social-cultural factors have a significant effect as the cause of stunting.

CONCLUSION: The sociocultural factors which were related to stunting are environmental sanitation, parents educational background, family income, and mother's knowledge. Therefore, further and comprehensive study on sociocultural is needed to be performed to overcome stunting in community.

Introduction

The growth and development started from infancy level is an important issue and is a concern of the government. Adequacy and fulfillment of nutritional needs are compulsory to achieve an optimum growth and development for physical, psychomotor, psychological, mental, and social development. The higher the risk factors for malnutrition, the greater the chance that nutritional disorders will occur [1], [2]. One result of nutritional disorders that are currently developing is stunting. Stunting illustrates chronic nutritional status during the child's growth and development since early life [3], [4]. Indonesia is one of the 117 countries in the world that has high nutritional problems in infants; namely, stunting, wasting, and overweight, reported in the 2014 Global Nutrition Country Nutrition Report Indonesia Profile [5]. In particular, stunting is the biggest problem, with an incidence of up to 37.2% [6], [7]. One area with a high incidence of stunting in North Sumatra is Langkat district with a stunting prevalence reaching of 55.48%.

Stunting (short stature) is an indication of a lack of nutritional intake, both in quantity and quality since the

infant period, even in the womb [8], [9], [10]. This condition causes the child to have a body height that tends to be short in his age 8. In addition to being short, stunting also has other effects on toddlers, both short-term and long-term impacts. Short-term effects can relate to the hamper of development, cognitive decline in immune function, and easier to be affected by the disease compared to other children in general [11], [12]. On the other hand, long-term effects can take up to adulthood, such as increasing the risk of degenerative diseases such as diabetes mellitus, coronary heart disease, hypertension, and obesity [13], [14]. Determining stunting in children was done by means of measurement. Height measurements by age were performed on children over 2 years old. Moreover, anthropometry is a measure of the body, whereas nutritional anthropometry is a type of measurement of some body shapes and body composition according to age and nutritional level, which is used to determine protein and energy imbalances. In addition, anthropometry is used to measure height and weight growth to assess nutritional adequacy [15], [16], [17], [18].

One factor that influences health status, including the fulfillment of family nutrition, is the culture of society [19]. Culture is a characteristic that

will influence behavior and habits. Moreover, cultural values are concepts about something that is in the mind of most of the people who are considered valuable, and important in life, so that it can function as a guide that gives direction and orientation to the lives of the citizens [20], [21], [22], [23], [24], [25]. Cases of illness and infant death due to cultural perceptions that do not support the achievement of good conditions are still commonly found in various places in Indonesia, including in communities in the Secanggang subdistrict, Langkat Regency, North Sumatra, Indonesia. Socioculture is a scientific effort to understand cultural events/statements which are generally unique and carried out as a tradition in people's lives. The socioculture of the community needs to be studied and analyzed to help the understanding and perception of the community in meeting their health-related needs [26], [27].

Basic sociocultural importance is to foster and questioning people's sensitivity to cultural values, to broaden views on humanitarian and cultural issues, and to develop an understanding of criticism about the ways humans express their experiences in the world in works of art [28], [29]. Social and cultural aspects greatly affect the life patterns of humanity, including health care for infants and children. The health status of a child is determined by the family through care taken in meeting food needs [30], [31]. Furthermore, children with poor health status, poor nutrition, and stunting associated with care are carried out starting from pregnancy and childbirth [19], [32]. Early and exclusive breastfeeding is the beginning of fulfilling good nutrition for babies. The willingness of mother and family to meet the nutritional adequacy of children is a major factor to prevent stunting [19], [32]. In the era of globalization with various changes that are so extreme recently, it requires a great attention of community to the sociocultural aspects. Therefore, maternal and child health is categorized as a focus of government achievement in the health sector [33].

The high number of morbidity and mortality rate for mothers and children is inseparable from social, cultural, and environmental factors in the surrounding community [19], [32], [33], [34]. Cases of illness and infant mortality as well as achievements in nutritional status are indicators to determine success in assessing the health status of infants and children in an area in Indonesia. Intervention performed by government to deal with stunting was to launch a national action plan program for handling stunting in August 2017, with an emphasis on convergence activities at the national, regional, and village levels to prioritize intervention activities for specific and sensitive nutrition in the first 1000 days of life to age of 6 years old. Government programs will run smoothly if carried out by involving the community, so it is necessary to do a preliminary assessment and how everyday social culture is associated with stunting.

Factors that affect health in terms of sociocultural aspects are varied. First, socioeconomic

includes employment, income, and housing conditions. Low socioeconomic conditions are more likely to lead to rapid disease transmission, poor nutrition, and dense housing. Second, low education and knowledge affect the level of awareness of health and prevention of disease [31]. Women with high levels of education tend to focus more on the health of their families. Unhealthy living behaviors such as defecation in open channels or soil, eating without washing hands, bathing at times, alcoholics, and smokers can affect health status [35], [36]. Furthermore, bad environmental irritation, a dense and slum environment, and a house without good ventilation will affect the growth and development of children [37], [38], [39]. In addition, cultural behavioral factors including traditions that exist in society such as cultural views regarding pregnancy, birth, illness, and death in each region differ according to the beliefs and customs that are adhered could lead to the community health status.

Methods

This is a quantitative study with a descriptive correlation design, using questionnaire consisting of demographic data, infant/child health status, and sociocultural community as the research instrument. The socioculture of the community is seen from the family aspect by examining the socioeconomic, education, and attitude toward health and environmental sanitation.

The population in this study were all babies and toddlers in the Langkat district, especially the working area of the Secanggang Public Health Center, Secanggang district. As many as, 136 babies and toddlers were categorized as samples using total sampling method.

The baby's health status related to stunting was checked with measuring their height by age. Stunting describes a chronic undernutrition status during a child's growth and development since early life. This situation is presented with a height score for age (height/age) <2 standard deviation based on growth [16]. Stunting (short stature) is an indication of a lack of nutritional intake, both in quantity and in a quality that are not fulfilled since infancy, even in the womb. This condition causes children to have a short stature at their age.

The statistical method used was a univariate and bivariate analysis using the Chi-square statistical test, with significant indicator determination ($p < 0.05$). Moreover, multivariate analysis was carried out through logistic regression tests to measure the factors that most influence the incidence of stunting.

Results

In general, results of the study found a social cultural relationship between the community and the stunting incident. Associated sociocultural factors are categorized to be environmental sanitation, parents educational background, family income, and mother's knowledge of stunting. In detail, all statistical results obtained were described in tables.

The sociocultural level is determined by examining several things according to predetermined indicators (Table 1), including socioeconomy, education, and attitude toward health and environmental sanitation. Socioculture that affects stunting includes environmental sanitation, father's and mother's education, family income, and maternal knowledge about stunting. The program to improve community health status will not run smoothly as intended if it does not assess environmental and cultural factors of the surrounding community and involve the community in the program [12], [19].

Discussion

The research results are consistent with the concept that explains that factors which cause stunting are poor parenting practices (Table 2), including lack of maternal knowledge about health and nutrition before, during, and after pregnancy [40], [41]. Some facts and information show that 60% of children aged 0–6 months do not get exclusive breast milk, even though breast milk is the perfect food source for babies. Moreover, it can shape endurance and the development of the immunological system. The people, especially mothers, in general say that children older than 1 year are not given various complementary foods, with the reason that the child does not want to eat. Therefore, family or mothers should start introducing additional food when toddlers are over 6 months old. Besides functioning to introduce new types of food to babies, it can also meet the nutritional needs of the baby's body that is not obtained by breast milk. The role and knowledge of the mother about breastfeeding are very crucial in fulfilling the nutrition of babies in accordance with their needs. The success of a nursing mother is determined by the success of the 1st time to decide on giving breastfeed from birth [32].

At present, health services including antenatal care services (health services for mothers during pregnancy), postnatal care, and early quality learning are still limited. This condition affects family knowledge about health and the lack of information received related to the fulfillment of nutrition and stunting problems in children [42], [43], [44]. In fact, almost 25% of children/babies are having stunting condition (Table 3). The

Table 1: Descriptive statistics of characteristics and socioculture of respondents (n = 136)

Variable	Frequency	
	Numbers	Percentage
Mother's age		
At risk <20 years old and >35 years old	52	38.2
Not at risk/20–35 years old	12	32.43
Number of children		
Primigravida	26	19.1
1–2	74	54.4
>2	36	26.5
Father's educational background		
Elementary	13	9.6
Junior high school	40	29.4
Senior high school	65	47.8
Higher education	18	13.2
Mother's educational background		
Elementary	37	27.2
Junior high school	48	35.3
Senior high school	41	30.1
Higher education	10	7.4
Father's occupation		
Entrepreneur	39	28.7
Civil servant	31	22.8
Farmer	48	35.3
Fisherman	18	13.2
Mother's occupation		
Housewives	68	50
Entrepreneur	30	22.1
Civil servant	26	19.1
Farmer	11	8.1
Fisherman	1	0.7
Income		
Rp. 3,400,000	100	73.5
<Rp. 3,400,000	36	26.5
Religion		
Islam	112	82.4
Christian	24	17.6

availability of health services in the community can help in improving the health status of children, especially in detecting the occurrence of stunting and improving the achievement of immunization services. Lack of family access to nutritious food is related to the problem of stunting. The family's economic condition is still on less average while the price of nutritious food in Indonesia is still relatively expensive. Many people in the Langkat district of Secanggang subdistrict are categorized as underprivileged/below the minimum wage (minimum wage), making it impossible to meet the nutritional needs of infants and children (Table 4). The existence of a culture of food abstinence in families such as children should not eat fish and eggs, because it is feared that it will cause itching and intestinal worms in children resulting in the child will be deficient in protein and cause chronic malnutrition in children and eventually stunting [45], [46].

Table 2: Socioculture level of respondents

Socioculture Level	Frequency	Percentage
Good	17	12
Moderate	36	26
Less	83	61
Total	136	100

Sanitation, dirty environment, and lack of access to clean water are related to stunting (Table 5). Many people still employ wells as a source of water in the household. Inadequate well water conditions, water looks dirty and brown, and housing conditions are poorly ventilated, and some families keep livestock close to their homes. In fact, there are some family members who still behave in unhealthy life such as becoming active smokers and often close to children

and babies when smoking so that other family members are exposed to the pollution. Consequently, this condition will affect the growth and development of children with unhealthy environments [44], [45].

Table 3: Children/babies health status

Health status	Frequency	Percentage
Stunting	30	22.1
Not stunting	106	77.9
Total	136	100

This is in line with research which shows that health, growth, and development status of infants/children will be determined by environmental and sanitary conditions in their families [47]. Education and family knowledge, especially mothers about stunting, could be related to the incidence of stunting. A mother who has good knowledge about nutrition will try to meet the child's nutritional needs to the optimum level. Furthermore, mothers will try to make a variety of foods to meet the nutritional needs of children so that the nutritional needs of elements can be fulfilled.

Table 4: Analysis of relationship between risk factor with stunting (n = 136)

Variable	Stunting	No stunting	p-value
Age of mother			
Risk age	14 (26.9)	38 (73.1)	0.388
Productive age	16 (19)	68 (81)	
Gender of children			
Male	10 (17.5)	47 (82.5)	0.388
Female	20 (25.3)	59 (82.5)	
Number of child			
>2 children	16 (44.4)	20 (55.6)	0.000
≤2 children	14 (14.1)	85 (85.9)	
Environment sanitation			
Good	6 (7.7)	72 (92.3)	0.000
Worst	24 (41.4)	34 (58.6)	
Father's educational level			
Higher education	15 (18.1)	68 (81.9)	0.233
Low education	15 (28.3)	38 (71.1)	
Mother's educational level			
Higher education	1 (2)	50 (80)	0.000
Low education	29 (34.1)	56 (65.9)	
Income according to minimum wage			
Rp. 3,400,000	10 (10)	60 (60)	0.000
<Rp. 3,400,000	20 (55.6)	16 (44.4)	

Parents, especially mothers as child caregivers, will be influenced by their education and knowledge about health. This is consistent with the theory which states that knowledge can improve emotional control, increase client independence, self-esteem, endurance, and can help clients to adapt to problems or illnesses which, in turn, can improve health status. The program to improve public health status will not operate smoothly in accordance with the objectives if it does not examine the environmental and sociocultural factors of the surrounding community and involve the community in the program. In addition, human behavior is influenced by the environment, both the physical and the sociocultural environment. Relating to behavioral factors that can affect the health status of the community, especially mothers and infants, are inseparable from the culture and habits of the family and the daily environmental condition of the community. This is in line with the opinion that stated the indirect cause of maternal and newborn deaths is due to community conditions such as education, socioeconomic, and culture [15], [34].

Table 5: Risk factors for stunting by logistic regression

Variable	Odds ratio	95% CI	p-value
Environment sanitation	65.56	8.51–504.93	0.000
Father's educational level	0.17	0.30–0.95	0.044
Mother's educational level	129.23	8.01–208.35	0.000
Income according to minimum wage	8.84	1.70–45.90	0.011
Mother's knowledge about stunting	0.08	0.00–0.82	0.033

Conclusion

The results of data analysis show that social culture of society in Langkat Regency, North Sumatra, Indonesia, is significantly related to the incidence of stunting in children, especially social culture on environmental sanitation factors, parents educational background, family income, and mother's knowledge of stunting. This finding is expected to give insight into every related party to give more attention toward the stunting issue, to avoid similar problem to happen in the future. As it is discussed, many factors are involved, which means that it is not a simple problem to be solved.

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Ethical clearance

In addition, this research has been approved by Ethical Committee of Nursery Faculty, Universitas Sumatera Utara, Indonesia, with ethical clearance number of 1826/IV/SP/2019.

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