




Mothers' Perceived Susceptibility and Severity of Maternal Behavior in Stunting Prevention

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Abstract

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BACKGROUND: Nutritional problem is still a significant public health issue worldwide, and Indonesia is not exempted. Stunting is the failure of a child to grow to the proper height of their age due to unbalance nutritional intake (more calories and less protein) when they are still in the womb, baby, and toddlers. The mother's lack of awareness about the susceptibility and severity of the stunting is the contributing factor.

AIM: Purpose of this study is to investigate mothers' perceived susceptibility and severity toward stunting and their association with mothers' behavior to prevent stunting.

METHODS: It is a quantitative study using an analytical observation design with a cross-sectional approach. This population is 120 mothers with under 5 years of children in East Surabaya Health Center, Indonesia. They were all taken as research samples. The independent variables are perceived susceptibility and severity of stunting, whereas stunting prevention is the dependent variable. The Likert scale is used to develop a questionnaire as a data collection tool. The logistic regression test was carried out to identify mothers' perceived susceptibility and severity level to protect their children from stunting.

RESULTS: The study found that mothers generally have a good perception of the susceptibility and severity of stunting. The logistic regression test shows that the value of significant = 0.000 for the susceptible variable and significant = 0.003 for the severity factor.

CONCLUSION: The study concluded that the strong association between mothers' perception of susceptibility and severity of stunting affects their stunting prevention behavior.

SUGGESTION: The study advises mothers to improve their awareness of the danger of stunting and take necessary action to prevent it. Health promotion efforts should focus on empowering and enhancing the participation of mothers to take pre-emptive steps to prevent stunting.

Introduction

Stunting has recently become a primary public health concern around the world. The World Health Organization (WHO) defines stunting as children's impaired growth and development due to poor nutrition, repeated infection, and inadequate psychosocial stimulation. Children are stunted if their height-for-age is more than two standard deviations below the WHO Child Growth Standards median [1], [2], [3]. Stunted children are vulnerable to obstruct physical growth, higher mortality and morbidity rates, and other long-term implications such as poor cognitive and motor development, poor academic performance, economic productivity, and reduced physical and neurodevelopmental capacity [4], [5], [6]. Therefore, some researchers label it stunting syndrome [7].

Stunting is a serious problem in developing countries. The UNICEF, World Bank, and the WHO predict that 150.2 million (22.2%) children worldwide suffered from stunting. In Eastern and Southern Africa,

such as Ethiopia, Madagascar, Mozambique, Somalia, and the United Republic of Tanzania, approximately 2 million children (age 5–59 months) suffer from acute malnutrition and stunted [8]. The prevalence of stunting in the Asia Pacific region in 2020, the highest burden of stunting is among the children in the Oceania region (41.4%), followed by South Asia (30.7%), Southeast Asia (27.4%), and the lowest in Australia and New Zealand (2.3%) [9]. The WHO compiles the stunting rate in Southeast Asia countries; Bangladesh (30.2%), Brunei (12.7%), Cambodia (29.9%), Laos (30.2%), Malaysia (20.9%), Myanmar (25.2%), Philippines (28.7%), Singapore (2.8%), Thailand (12.3%), Timor-Leste (48.8%), Vietnam (22.3%), and Indonesia (31.8%) [10]. The figures above place Indonesia as the second country with the highest prevalence of stunting after East Timor. However, the national strategy to accelerate stunting eradication commits to reducing the prevalence by 2.7% each year, reaching 14% in 2024 [11].

The WHO claims that malnutrition, prolonged infection, and poor psychosocial stimulation are

the main causalities of stunting. Studies worldwide summarize that malnutrition leading to low birth weight is the primary trigger of stunting, especially among poor households [12], [13], [14], [15]. Being low-income families make mothers unable to feed themselves nutritious food during pregnancy and provide a healthy or balanced diet for their children within their first 2 years. Mother is the key person within the family to ensure adequate food and nutrition for their toddlers. Therefore, a mother's behavior to nutritious food intake during pregnancy, after birth (breastfeeding and complementary foods for toddlers), and a balanced diet for children under 5 years are vital to preventing stunting.

In general, researches focus on the direct causalities of stunting (i.e., malnutrition and infection) than the confounding determinants as underlying factors. Some studies revealed various determinants of stunting, such as mother's knowledge, education of mothers, economic status of the households, breastfeeding pattern, and demographic and environmental factors [12], [13], [16], [17]. Preventing stunting is not only the provision of nutrition and a balanced diet but also the drivers of practices such as mothers' awareness of the susceptibility and severity of stunting. The susceptibility and severity components of the Health Belief Model (HBM) determine the individual either takes or does not act against a particular health issue encountered [18]. The HBM applies to health promotion programs to prevent illness or diseases [19]. Our knowledge is lacking about the association between mothers' perception of the susceptibility and severity of stunting. Furthermore, the way these perceptions become the underlying stunting prevention behavior. Therefore, the study investigates mothers' perceived susceptibility and severity toward stunting and their association with stunting prevention. The study will promote the awareness of mothers or the community about the risk and consequences of stunting to the children's growth and development (i.e., health, physical, and psychosocial). It assists the health promotion program planners in developing health education and promotion about stunting.

Methods

The study adopted the quantitative design using an analytical observational design with a cross-sectional approach. The study was conducted in East Surabaya Public Health Centre, Surabaya, Indonesia.

The population of study is 120 mothers with under 5 year children and they were all chosen as the participants using total sampling procedure. The data comprises to demographic information, perceived susceptibility, and severity about stunting.

The variables are the perceived susceptibility, severity of mothers toward stunting prevention. Due to unavailability of standard instrument to assess association between perceived susceptibility and severity of stunting, the researchers developed questionnaires at a three-point Likert scale. The Pearson product-moment correlation test concludes that all questions are valid ($r > 0.2732$). Meanwhile, the Cronbach's alpha test (0.97) shows that all questions are reliable to use. The logistic regression test calculates the association between the perceived susceptibility and severity of stunting and the mothers' behavior toward stunting prevention. The researchers provided a plain language statement and informed consent for the respondents.

The Research Ethics Committee of Poltekkes Kemenkes Surabaya (Health Polytechnics of Surabaya) granted the Ethical Clearance Certificate No. K/670/KEPK-Poltekkes_sby/V/2021 on October 5, 2021.

Results

Demographic information of mothers at East Surabaya Community Health Center (CHC)

Table 1 shows the sociodemographic information of the respondents. Table 2 describes the sociodemographic information of the respondents. Most mothers graduate from senior high school, 59 (44%) and primary school, 42 (38.5%). There are no mothers who attended tertiary education level. They are self-employed or work in small businesses. They earn approximately USD 100–150 a month. The majority of the mothers have three to four children in their family.

Table 1: Sociodemographic information of respondents

Respondent characteristics (n = 120)	n (%)
Education	
Elementary education (primary and junior high school)	61 (55.96)
Senior high school	59 (44.04)
Tertiary education (diploma, bachelor, and above)	0
Employment	
Unemployed	10 (9.17)
Civil servant	11 (10.09)
Private sector employee	14 (12.84)
Entrepreneur	61 (45.87)
Farmer	24 (22.03)
Monthly income (US dollar)	
<100	10 (9.17)
100–150	107 (88.07)
>150	3 (2.76)
Number of children	
1–2	42 (35)
3–4	74 (62)
>4	4 (3)

Mothers' perceived susceptibility and severity of stunting

Table 2 explains the mothers' perceived susceptibility to stunting refers to their awareness that their children are potentially at risk of getting stunted. The majority of the mothers believe that their children

Table 2: Mother's perceived susceptibility of stunting

Susceptibility perceptions (n = 120)	n (%)
Growth impairment	
Unlikely	4 (3.4)
Likely	112 (93)
Highly likely	4 (3.4)
Poor development growth	
Unlikely	5 (4)
Likely	12 (10)
Highly likely	103 (85.8)
Poor academic performance	
Unlikely	3 (2.5)
Likely	32 (26.7)
Highly likely	85 (70.8)

are likely (93%) to suffer from growth impairment. They also believe that children are at a high risk of poor development growth (85.8%) and poor academic achievement (70.8%).

Table 3 highlights the perceived severity of stunting regards the awareness about the degree of risk being stunted. The majority of the mothers have an average belief that their children's severity of growth impairment. They have a medium and strong belief that their children may suffer from development growth and poor academic performance.

Table 3: Mother's perceived severity of stunting

Severity perception (n = 120)	n (%)
Growth impairment	
Unlikely	4 (3.4)
Likely	112 (93)
Highly likely	4 (4)
Poor development growth	
Unlikely	42 (35)
Likely	58 (48)
Highly likely	30 (25)
Poor academic performance	
Unlikely	13 (10.0)
Likely	67 (55.8)
Highly likely	40 (33.3)

Mothers' perceived susceptibility and severity of stunting prevention

Table 4 describes the regression logistic test of perceived susceptibility of stunting prevention concludes that p-value (significant) < 0.05 is 0.000. The perception of the severity of stunting and the prevention behavior of mothers, the p-value (significant) < 0.05 is 0.03. It concludes that both perceived susceptibility and severity of stunting significantly influence mothers' awareness with under 5 years of children to prevent stunting.

Table 4: Logistic regression test of perceived susceptibility and severity of stunting prevention

Variable	B	OR Exp (B)	Significance
Perceived susceptibility	4.42	83.44	0.000
Perceived severity	3.34	28.23	0.003

OR: Odds ratio.

Discussion

Health behavior relies on underlying factors for optimum performance. The factors will guide the individual to take an action to maintain good health and

prevent potential health problems. Stunting is a serious health problem, and the consequences are alarming to the health of the young generation [1]. Stunting is more or less dependent on the awareness level of supporting agents such as parents, especially mothers. The study aims to define mothers' perception of the incidence of stunting and its severity on physical growth, social development, and academic performance. It reveals that the mothers are aware of their children's risk of getting stunted and the severity of its risks. They believe their children are likely to experience a problem with their physical growth (93%), highly likely distraction from social development (86%), and academic achievement (71%). Regarding the severity of the risk of stunting, the mothers likely perceived that stunting is a serious health problem in the three aspects assessed.

The contributing factors of stunting include poverty (i.e., malnutrition), education of the mother, geography (i.e., rural, urban, high/lowland), [7], [20], [21], [22], [23]. The mother's perception is significantly associated with their behavior to prevent the occurrence of stunting. Parents, especially mothers, are the key persons to anticipate the incidence of stunting [16], [24]. Besides providing nutritious foods (especially 1000 days after conception until 2 years), the mothers' knowledge and perception of stunting determine behavior to protect their children from stunting. Mothers' behavior (knowledge, attitude, and perception) contributes to whether or not prevention action is taken place. The incidence and prevention of stunting rely on how knowledge and perception of mothers of the potential risks of stunting and its implication for their children's physical growth, social development, and academic performance. Poor knowledge and misperception of stunting are barriers to avoiding stunting. The HBM argues that change of behavior from an unhealthy to a healthy lifestyle depends on individual's awareness of the vulnerability of getting sick and how they perceive the severity of illness implication to their overall well-being and health [18].

Some studies found that mothers with limited knowledge of stunting lead to misperception of stunting. Consequently, their ability to detect and prevent stunting is inadequate due to a lack of knowledge and awareness of the risk of stunting and its consequences [25]. For example, stunting and wasting in rural Punjab were caused by the poor understanding of mothers about health and nutrition [26]. It exacerbates when misperception of stunting combines with poverty and the community's culture and social values. Mothers frequently underrate stunting and confirm it as a natural process. They believe that children will grow and develop naturally when their time arrives. A study by Helmyati *et al.* found that parents tend to misperceive stunting. They refuse nutritional problems, lack of education, and knowledge of dietary patterns are not the determinants of stunting. They assume that delay in physical growth, for example, is a normal process and occurs among children at the same age [27].

Furthermore, parents in Kilifi County on the Kenyan Coast believe that moderate undernutrition is not considered a health problem [28]. The misperception of undernutrition may risk children getting stunted. For example, a systematic review by Suhardin revealed that stunting has no association with nutrition, rather than a gift from the creator and genetic or hereditary factors [29].

Conclusion

Mothers are key persons in stunting prevention. Their perception of the susceptibility and severity of stunting substantially influences the stunting prevention behavior. The study highlights that mother have sufficient awareness about the risk and the severity of stunting to their children's physical growth, social development, and academic performance. The study suggests that mothers need to maintain and improve such awareness by providing nutritious foods for their children and actively assessing their children's growth and development.

Study limitation

Regardless its contribution, the study bears some limitations. The number of sample is small that poorly represented the population of the city where the study conducted. Standard instrument to assess the perceived susceptibility and severity of stunting is unavailable. There is no indication that the mothers have stunted children involved in the study.

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