META-ANALYSIS: POVERTY, PSYCHOLOGY, GENDER EQUALITY: BARRIERS AND SOLUTIONS IN STUNTING PREVENTION

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Abstract

Introduction: Stunting is a chronic nutritional problem caused by multi-factors, including one of them is the poverty factor that affects the mother's psychology during pregnancy. However, the risk factors for stunting from maternal psychological factors until now have not been widely researched and found specific interventions.
Objectives: The purpose of this study is to analyze obstacles and solutions in stunting prevention based on poverty, psychological, and gender risk factors.
Method: The data collection technique used by researchers to get published articles is to use data bases from *google scholar, publish or ferish, mendeley, google book*, *PubMed.*
Result: The results of the research obtained explain that stunting can be triggered by the psychological condition of the mother during Hamill. The trigger for the emergence of psychological problems in pregnant women is the inability of the family (husband) to meet bio, psycho, social, and spiritual needs. Family economic factors are one of the main problems causing psychological problems of pregnant women, including the problem of gender violence.
Conclusion: based on the results of analysis of several studies in the form of journals, it was found that psychological factors / depression affect the baby's growth and development.

Keywords: *Stunting, poverty, psychology*

INTRODUCTION

Stunting is a condition of failure to thrive in children under five caused by chronic malnutrition so that children are too short for their age (WHO Child Growth Standards, 2009), [2]. The problem of stunting is a problem that requires serious handling, because the impact of stunting is very complex. Based on the results of the study, it shows that the impact of stunting includes: health, social, economic, educational, and psychosocial. The impact on health is; Children have decreased intellectual abilities (*intelligence quotient)*, inaccuracy in storing objects, verbal and nonverbal delays, and delays in thinking [3], Risk of degenerative diseases, having low body resistance which results in easy exposure to infectious diseases [4], and can lead to obesity in adulthood [5]. Social impact, namely low quality human resources, unable to compete and productive according to their age [6]. Economic impacts include low income when working, a person

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with a height of six feet or 1.82 m earns an average salary over a 30-year career of about $ 166,000 higher than someone with a height of five feet five inches or 1.55 m [7].

The impact of education, children will experience delays in completing school for almost a year [8], [9], [10]. While the impact on psychosocial, namely children easily anxious and prone to depression, low self-confidence, shows hyperactive behaviors that lead to behavior that is contrary to normal conditions [11], [12], [13]. These conditions if not resolved properly, will be born a low-quality, unproductive, low-competitive young generation, high mortality and morbidity rates, and can even occur *lost generation*.

There are several supporting factors that influence the occurrence of stunting. From the results of research on the determinants of stunting in Indonesia, among others; poverty associated with purchasing power and consumption of nutrition, environmental sanitation (provision of MCK and clean water), infectious diseases, and the level of community affordability to health services as well as culture or customs related to people's beliefs about certain foods that should not be consumed by pregnant women [14], (Buddhist & Nugraheni, 2018), including maternal psychological factors during pregnancy and during breastfeeding.

Based on the results of research that stress experienced by parents (mothers) can increase the risk of stunting, which is by 40% (95% CI 1.06,1.85) [16]. The number of pregnant women who experience psychological problems / depression as many as 10-25% of women. Psychological problems in pregnant women are caused by unmet bio, psycho, social, economic, and spiritual needs. If action is not taken properly, it will cause widespread problems related to the next generation.

METHOD:

This study uses a meta-analysis approach, which is a technique to combine and review two or more similar studies, so that a combination of quantitative data is obtained. Furthermore, retrospective analysis and observational analysis were carried out with the aim of recapitulating all research findings without re-experimenting. The data analyzed in this study is an interpretation of stunting cases in Indonesia, and its prevention by analyzing obstacles in the form of poverty, psychological, and gender equality, and caring for solutions.

Data collection of primary study articles using several data bases, namely *google scholar, publish or ferish, mendeley, google book*, *PubMed, Sciendirect* published. Research included in the meta-analysis is only published in journals with *a peer-reviewed* selection system, published in Indonesian and English, can be accessed *in full text*, *open access*, and not only display abstracts. The keywords used in the search were "stunting, poverty, psychological, and gender equality".

The process of determining the journal taken in this study goes through several stages, starting from formulating problems, collecting data sources, analyzing data, proving the truth of the data with the results of the analysis, and concluding the research. Of the 35 journals used as research references, there are 10 journals that are analyzed and then used as comparisons and considerations in making conclusions and solutions to problems found in research.

RESULTS AND DISCUSSION

1. Stunting and Poverty

The cause of stunting is multifactorial, namely direct and indirect factors. For the causative factor is directly related to inadequate nutrient intake that occurs during the period of 1000 HPK (*golden period*), i.e. from the start Pre-conception, conception, and post-conception phases [14]. In the preconception phase, this is related to the health condition of the prospective mother before

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marriage. For the conception phase influenced by the nutrients consumed by pregnant women, whether fulfilled nutritional needs or not. Post-conception is influenced by the adequacy of nutrients consumed by toddlers and their mothers. While indirect causative factors be infectious diseases, poor environmental sanitation, poverty (socioeconomic) and the level of community affordability to health services, culture or customs, the level of education of mothers, the knowledge of mothers and young women about nutrition [17], [18].

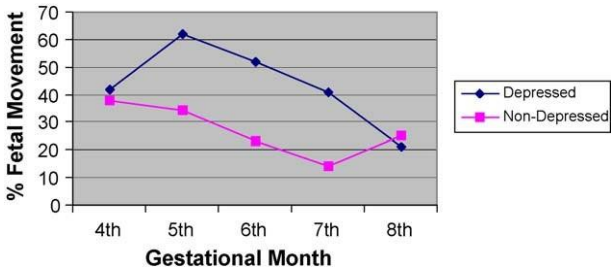
The level of consumption is influenced by the economic status of the people. This will affect the problem of stunting. If the level of consumption of nutritious food is low, the risk of stunting is great. Several studies show that stunting has a causal relationship with poverty. As the results of Damayanti's research at all (2020).[19]. This research is in line with the findings conducted by Fotso et al., (2012) stated that there is a strong relationship between poverty and the incidence of stunting [20]. This is because stunting is caused by lack of nutritional intake. Stunting usually occurs in low-income families. In addition, other studies show that high stunting, there is a relationship between low-income families and the incidence of stunting [21]. Likewise, the results of research from Worku (2018) that malnutrition and psychosocial factors are negatively related to the development outcomes of children living in poverty [22]. Where when income is fairly low will inhibit someone from consuming nutritious food. In general, stunting usually occurs in poor people, because low income affects the family's purchasing power for food that contains nutrients [23],[24]. Low-income families are 3.25 times more likely to have children with stunting.(poverty et al., 2022). In addition to having an impact on purchasing power, it also has an impact on less access to the fulfillment of health services.[26]

Poverty in Indonesia is caused by several factors, including low level of education, low speed of growth or labor productivity, low net wage level, uneven distribution of income, lack of employment compared to labor force growth, inflation rate, taxes and subsidies, low level of inadequate investment, insufficient allocation and quality of natural resources, lack of public facilities such as basic education, health, information, transportation, electricity, water, and housing, inadequate mastery and use of technical, level and type of education that is not suitable for work, low work ethics and worker positivity [27], [28].

The number of poor people in Indonesia in March 2023 will reach 25.90 million people. Compared to September 2022, the number of poor people decreased by 0.46 million people. Meanwhile, when compared to March 2022, the number of poor people decreased by 0.26 million people. The percentage of poor people in March 2023 was recorded at 9.36 percent, a decrease of 0.21 percentage points against September 2022 and a decrease of 0.18 percentage points against March 2022 [29]. Although the poverty rate in Indonesia is decreasing, it is still a threat to the Indonesian nation of an increase in stunting cases among people with low socioeconomic status.

2. Stunting and Psychology

The condition of pregnancy in women is a condition that is very vulnerable to psychological problems, especially depression. From several studies show that there are 10-25% of pregnant women who experience depression. Negative impacts due to depression on



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pregnant women include disruption of fetal development and neonatal outcomes, placental abnormalities, preeclampsia and spontaneous abortion, premature childbirth, bronchopulmonary dysplasia and intraventricular hemorrhage, low birth weight (<2500 g) and small according to gestational age (<10th percentile). As many as 20% of babies with low birth weight experience fetal growth retardation, which is the second leading cause of perinatal death [30]. Moreover The impact of depression and stress can affect disruption of the hypothalamic-pituitary-adrenal (HPA) axis, thus exerting physiological effects during intrauterine growth [30]. This mechanism affects fetal weight mediated by prenatal cortisol and norepinephrine levels. Below is a picture that shows the difference in fetal conditions in mothers who experience psychological problems.

Figure 1. Fetal activity of depressed and non-depressed mothers

Based on the results of the analysis showed that fetuses from depressed women were more active at 5, 6 and 7 months gestation. These data show that fetal activity is affected by prenatal depression from 5 months gestation.

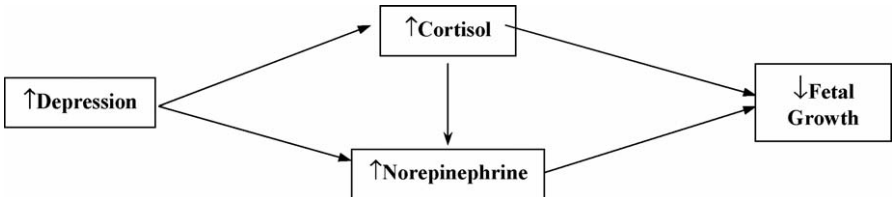

Figure 2. Model A hypothesis describing the expected relationship between maternal depression (and anxiety), cortisol, norepinephrine, and fetal growth rate.

Pathway analysis showed that the effect of prenatal depression on fetal weight estimates was mediated by prenatal cortisol and norepinephrine levels, with prenatal cortisol being a stronger variable (Diego et al., 2006)..... To estimate the clinical significance of these findings, we calculated the percentage of fetuses from mothers with high and low cortisol values whose estimated fetal weight was below or above the average gestational age respectively. This analysis revealed that a large number of mothers with high cortisol values (84%) had fetuses with an estimated below-average fetal weight.

Maternal pressure also has an impact on inadequate nutrition services. A depressed mother will experience fatigue, impaired concentration, and psychomotor decline, all of which can affect feeding practices. This if not intervened immediately, it will have an impact on the quality of parenting and increase psychological stress in children [31], [32], and may eventually worsen the child's health [33], [34].

The health impact experienced by babies due to poor care from mothers is the emergence of infectious diseases which are direct factors that cause stunting, such as diarrhea, respiratory infections, and other infectious diseases. This is in accordance with the results of research conducted in low- and middle-income countries (LMIC), namely in India and Vietnam using instruments *Self Reporting Questionnaire* (SRQ20) which serves to measure psychological stress on mothers. In his research shows that mothers who experience mental disorders can contribute to the problem of stunting in children [35], [36]. Different studies were conducted by Rahman et al. (2007), in their research showed the results that diarrhea cases are more experienced by infants with mothers who are depressed than mothers who are not depressed.

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In addition to the problem of poor parenting, there are also problems related to emotional mothers who experience depression towards their children, namely reduced levels of sensitivity and emotional harmony. In mothers with depression, the level of sensitivity is low which is characterized by apathy and withdrawal towards parenting and no interaction with their children, In Jamaica, Baker-Henningham et al (2003) in their research showed that there is a relationship between depressed mothers and the provision of child stimulation at home. The level of stimulation and interaction between mother and child affects the nutritional status of children. The less stimulation and interaction between mother and child, the nutritional status in infants is getting worse, and vice versa.

Interaction means showing attachment, compassion, and belonging, so that it will foster a sense of security and comfort for children. This will affect the level of growth and development in babies. Based on the results of research conducted in Chile, Venezuela shows that there is a relationship between babies who are malnourished with depressed mothers seen from the elements of attachment, affection, and belonging.

Based on the results of studies from several studies related to maternal psychological factors associated with stunting, it shows that maternal psychological factors are risk factors for causing stunting. The emergence of psychological problems experienced by housewives is caused by the unfulfillment of bio, psycho, social, and spiritual needs that will affect parenting and roles. Poverty is one of the causes of psychological problems. Therefore, to reduce the prevalence of stunting in Indonesia is by improving socioeconomic welfare, mental health, and food security for each household, as well as fostering commitment between couples to love each other, and love, so that there are no cases of gender violence in the household.

CONCLUSION

Psychological problems reduce the mother's ability to raise her child adequately, which in turn can have a negative impact on the child's growth and development. Possible causes of this are poor food hygiene or breastfeeding problems/cessation. The results showed that children of depressed mothers were less likely to complete immunizations and less successful in accessing public health services for themselves or for their babies.

Depression experienced by the mother can affect the nutritional status of the child including a less healthy lifestyle, poor psychosocial stimulation in the child, and reduced search for care for herself and the child. Rondo´ et al. found that women who were depressed had less intention to breastfeed their children than women who did not have depression. When weaning, women who experience stress and distress may be less successful in preparing food.

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