

## Mother's Knowledge, Diet and Nutritional Status in Stunted Toddlers (Literature Review)

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**ABSTRACT:** Childhood is an important age for physical growth. The growth of children under the age of five is so fast that they need to eat foods that are in line with their needs. The purpose of this study was to examine maternal knowledge and the relationship between nutrition and nutritional status in young children. This research is a literature review with a descriptive research method and library research where this research tries to explain the real things, which are happening now or in the past. This article examines maternal knowledge and the relationship between diet and nutritional status in child stunting. Based on studies from many previous studies, it is known that the level of knowledge of mothers about nutrition is effective in supporting the nutrition of their children. It is assumed that mothers who have good knowledge about food choose the right food for themselves and their children.

**KEYWORDS:** Knowledge, Diet, Nutritional Status, Stunting, Toddlers

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### I. INTRODUCTION

Toddlerhood is an important age for physical growth. The growth of toddlers is so rapid that they require nutritional intake according to their needs. More than 200 million children under 5 years old in developing countries do not achieve their development or growth. A child's cognitive and physical development is influenced by the 1000 days of life, from conception to two years [1]. Unfortunately, this critical window period is underestimated especially in lower middle income countries which bear the greatest burden of child malnutrition with high rates of morbidity and mortality [2]. Toddlers who experience malnutrition in the first two years of life will experience delays in physical and mental growth. This problem cannot be corrected as the child gets older and this will affect the child for the rest of his life. Therefore, improving community nutrition which is focused on improving the nutrition of infants and toddlers is a start in improving the level of public health. On the other hand, malnutrition in children under five will result in the emergence of other health problems, and ultimately will have an impact on decreasing the level of public health [3]. Toddlers who experience this condition are at risk of experiencing short stature (dwarfism). In the 2018 Nutritional Status Tracking data, for the last three years, stunting was the highest rate compared to other nutritional problems such as malnutrition and obesity [4]. A mother's lack of knowledge about child nutrition, eating disorders, and eating habits can affect child nutrition [5]. Child growth is caused by the growth of various parts of the body, especially the central nervous system. Development occurs throughout life, with many stages. One of them is that childhood takes place between the ages of 1-3 years, when children's development occurs rapidly and is a golden period for children [6].

Millennium development goals (MDGs) reduced by half the proportion of children suffering from malnutrition in 1990, namely 35.5% to 18% in 2015, while the proportion of malnourished children in 2008 was still high, namely 28.7%, so that Indonesia still need to work hard to achieve the MDGs indicators [7]. The World Health Organization (WHO) estimates that 54% of the causes of death of infants and toddlers are based on poor nutritional conditions. According to the world bank in 2002 around 47% of Indian children were malnourished. Childhood malnutrition is the most common cause of malnutrition in infants and children from birth to three years of age. About 30 percent of Indian children are born underweight and this generally does not change as they grow [8]. Risesdas 2007, 2010, 2013 shows that Indonesia still has a problem of malnutrition. The trend in the prevalence of wasting in children was from 13.6% to 13.3% and decreased by 12.1%. Meanwhile, the prevalence of stunting in children under five is 36.8%, 35.6%, 37.2%. The prevalence of underweight is 18.4%, 17.9% and 19.6% respectively [9].

The global problem of fighting malnutrition needs to be complemented by sustained and integrated efforts against infectious diseases and with critical nutrition management such as promoting optimal breastfeeding practices, increasing maternal nutritional knowledge, encouraging micronutrient supplementation and better access to clean water and sanitation services. Malnutrition in children under the age of five is a major public health problem, especially in developing countries, including Pakistan. Our study

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identified more than half of children (54%) as having some form of malnutrition. Of the total number of malnourished children observed, 55.5% experienced stunting [10].

Factors that influence include: mother's knowledge, attitudes and behavior. Knowledge represents the extent of the basics used by a mother to care for her toddler from the womb, health services, and food supplies at home [11]. Agdepa's research shows that if the knowledge, attitudes and behavior of mothers/caregivers increase, the nutritional status of children will improve. To overcome malnutrition in children under five, there have been positive changes in maternal nutritional knowledge and health behavior [12]. Children benefit more when the mother is the primary caregiver. Improving nutritional knowledge Another study shows that ensuring mothers have good knowledge about the right foods for their children is very important in improving their children's nutritional status [13].

Maternal knowledge regarding nutrition influences the mother's attitudes and behavior in choosing the type of food her child eats [14]. A well-informed mother's diet will influence her baby's eating habits. Mothers who are very consistent in their diet give their babies healthy and nutritious food. You can give them healthy food at once and feed them without thinking that it is good for their growth and development. Your own problem or not With undernutrition and overnutrition previous studies have shown an important relationship between maternal knowledge and the child's nutritional status. The more you know about food, the better off you will be. The better she will be able to provide her baby with healthy and nutritious food [15].

There is a direct focus on malnutrition and malnutrition as causes of malnutrition in young children. So that stunting can occur depends on the food received in the form of food, namely the type of food, the frequency of food. Food is the main foundation for preventing various diseases [4]. In a systematic review conducted on food-related interventions among preschool children, the key variable was to determine the factors influencing school children's eating behavior. Research concludes that caregivers' nutritional knowledge, especially mothers' nutritional knowledge, has a significant influence on children's eating behavior, therefore caregivers/mothers play an important role in encouraging or preventing certain eating behaviors [16]. A further epidemiological study showed poor transition to complementary foods stemming from a lack of maternal nutritional knowledge and was responsible for the high prevalence of stunting in children 12–35 months [2]. Research in this area continues to dig deeper into the complex relationship between maternal knowledge about nutrition and/or health and maternal education in producing child health. Most studies have found a strong association between education and child nutritional outcomes after controlling for other confounders [17].

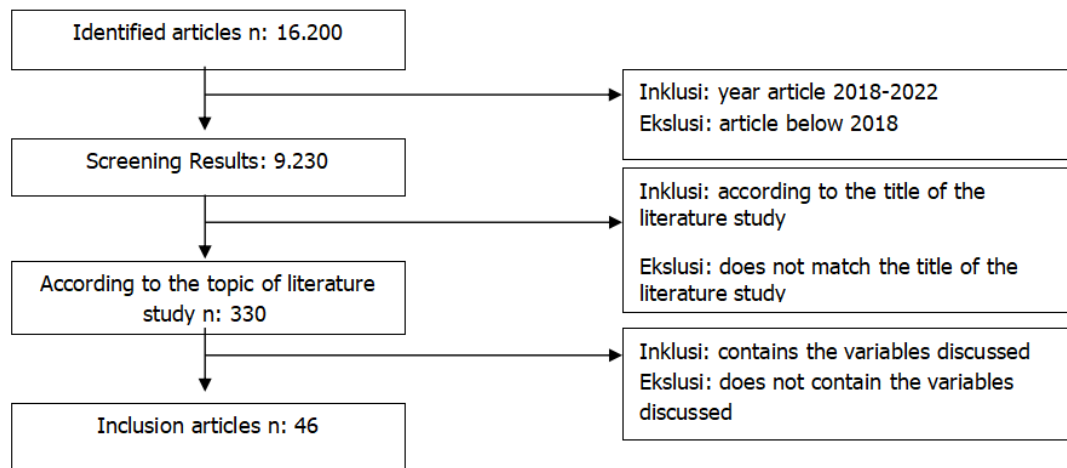
Many previous studies on stunting have studied the nutritional content of stunted toddlers, and there are still relatively few studies on stunting that have studied social aspects, especially those related to knowledge and mothers' perceptions of the incidence of stunting. The aim of this research is to analyze maternal knowledge and the relationship between eating patterns and nutritional status in stunted toddlers.

## **II. MATERIAL AND METHODS**

This research is qualitative research using descriptive analysis techniques with library research where this research attempts to describe existing phenomena, which are taking place currently or in the past. This article highlights maternal knowledge and the relationship between diet and nutritional status in stunted toddlers. In the research procedure there are 4 stages carried out, namely: (1) data collection; (2) data processing; (3) data analysis; and (4) results. Literature study data collection is carried out by searching the database. The data sought must of course be in accordance with the literature study topic. In collecting data, researchers looked for relevant articles regarding the nutritional content of stunted toddlers, and there is still relatively little research on stunting that examines it from social aspects, especially those related to knowledge and mothers' perceptions about the incidence of stunting. The keywords used were "mother's knowledge and the relationship between eating patterns and nutritional status in stunted toddlers" so that 16,200 articles were obtained from search results from Google Scholar.

At the data processing stage, the data that has been obtained is then organized and then processed by re-checking the data that has been obtained, especially in the aspects of completeness, clarity and harmony between each data. The results of the 16,200 articles obtained were then carried out for identification, screening and eligibility through inclusion and exclusion criteria to obtain 30 relevant articles according to the research topic. The process of selecting articles in this literature review research was carried out in four stages as can be seen in Figure 1.

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**Figure. 1** Flowchart of Literary Data Processing

This literature study research uses qualitative analysis techniques which are carried out by describing the results of obtaining relevant literature study data according to the research topic.

### III. RESULT AND DISCUSSIONS AGE STYLE

Stunting is a major health problem in children under 5 years in many low- and middle-income countries around the world. Toddlers who experience stunting have the potential to experience other nutritional problems, namely wasting. Stunting in children under 5 years of age can cause impaired physical development and have long-term effects on cognitive development, educational performance and economic productivity in adulthood and maternal reproductive outcomes [18]. There is global agreement on the critical window from conception to the first 2 years of life (0–23 months) during which 70% of stunting occurs. This linear growth deficit continues to worsen until the age of five due to ongoing exposure to modifiable adverse environmental factors related to feeding, infection, and psychosocial care [19]. Persistent decreased linear growth observed in the first 5 years of life may cause irreversible physical and neurocognitive damage accompanying stunted growth and pose a major threat to human development.

#### A. Mother's Knowledge About the Nutritional Status of Stunted Toddlers

Many studies show that a mother's level of knowledge about nutrition has a positive effect on her child's nutrition. It is believed that mothers with good nutritional knowledge choose the right food for themselves and their children. Noorma Yuneta said that the mother's knowledge about food is related to the mother's nutritional status, eating habits and there is a relationship between the child's knowledge about food [3]. In another study by Limoy, it was found that mothers' nutritional attitude and knowledge scores were positively related to their children's eating pattern scores [8]. A mother's education level influences her child's eating habits. Children of highly educated mothers had higher scores on good diet. Children of educated mothers prefer water, rice, bread, vegetables, fruit, meat, fish, chicken, eggs, and dairy products more than children of uneducated or less educated mothers. The study found that mothers with low nutritional knowledge ate more cheese and eggs than mothers with low nutritional knowledge [20].

According to Satyasari's research, the percentage of awareness of good nutrition and the role of possums in mothers who are physically active is higher than in mothers who are hospitalized at the health center. Researchers found that Poscom and Posandu could influence changes in maternal nutritional knowledge positively by providing health education in the form of counseling [7]. In line with this, Forh's research, where survey results showed that 61.5% of mothers interviewed had average nutritional knowledge, more than a quarter (32.7%) also had high nutritional knowledge and only 13 (5.8%) have low nutritional knowledge [2]. Apart from that, other overseas researchers by Indrapal found that malnutrition is still an important public health problem in India and is observed to be associated with low socio-economic status, illiterate mothers, low birth weight and dietary diversity. Improving maternal socioeconomic status and literacy can help in improving maternal nutrition during pregnancy and thus low birth weight. In addition, increasing maternal knowledge about IYCF practices will help in improving children's nutritional status [21].

According to Setianisa's research, the level of knowledge is closely related to the level of education. Maternal education is one of the indirect factors that determines maternal food intake. Highly educated people will be able to apply their nutritional knowledge to food choices and planning. Using family income to determine healthy food choices in the hope that consumption will improve safety. Child Nutrition and Community Education Parents can help increase their children's nutritional intake for growth and

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development according to their age [22,23]. These results are in line with research by Susilowati and Puspasari which also states the same thing, namely that there is a significant relationship between the level of maternal knowledge and the nutritional status of toddlers [24,25]. Apart from that, according to research by Anjela, it was concluded that there was a relationship between maternal knowledge in providing nutrition and the malnutrition status of toddler-aged children [26].

According to Scaglioni, there is a significant relationship between maternal education level and healthy eating behavior in young children and adolescents. Based on field observations and interviews with respondents, mothers with a higher level of education provide a greater variety of food and nutrition for their babies and toddlers and have greater knowledge about how to prepare and serve food for their children compared to mothers with lower education. Most mothers in the housewife category are more interested in chatting with their environment in their free time rather than spending less time related to the nutritional status of their babies and toddlers [27].

The results of research by Aripin regarding the role and knowledge of mothers regarding the nutritional status of feeding infants and toddlers are consistent with other research which found a significant relationship between maternal nutritional knowledge and stunting [28]. This is also in accordance with research conducted by Fadare in the Nigerian cultural context that having more children is positively related to the level of stunting in young children. The more children, especially children under five, individual mothers usually tend to increase competition within the household for childcare resources so that a child does not receive adequate nutritional care [29]. This means that delaying the age of first birth by a mother is positively associated with better child nutritional outcomes. Therefore, it is hoped that mothers will increase their knowledge through health education and seeking information from the mass media regarding the processing and serving of adequate nutritious food for their children.

Knowledge of micronutrient-rich foods, owning a refrigerator, keeping poultry, and a father's high level of education all determine household consumption of micronutrient-rich foods. A study by Bammann shows that nutritional knowledge increases household demand for micronutrient-rich foods in Indonesia, and parental education has been shown to increase household consumption of micronutrient-rich foods [30]. Having a refrigerator can give households regular access to some perishable foods, such as fruits and vegetables, meat, and dairy products, which are rich in micronutrients. Puspasari & Andriani's study shows that the majority of mothers who have children have good knowledge about good nutrition with the nutritional status of toddlers being normal (81.8%) and those who have less knowledge about the nutritional status of toddlers being abnormal (92.9%) [25]. This research is in line with Herlina's research which found a significant relationship between the mother's education level and her child's nutritional status. The survey also revealed that the majority of toddlers were malnourished and their mothers were illiterate (50%) [31].

Yulia Verditia's research results show that maternal knowledge influences nutritional problems [32]. Ramdhani's research shows something similar: mother's knowledge about speech and mother's lack of knowledge about speech. Lack of knowledge about stunting may be due to age and education factors [33]. For example, Purnama's research in Sidrap found that mother's knowledge influences children's activities. Mothers' knowledge can help improve their children's nutritional status. Little is known about the influence of motherhood on the attitudes and behavior of mothers who provide nutritious food to their children [34]. Fauzia and Fitriyani in their research in Kute Panang District, Central Aceh Regency also added that maternal knowledge and attitudes were related to the incidence of stunting [35].

### **B. Eating Patterns with the Nutritional Status of Stunting Toddlers**

Nutritional status is an indicator that describes health conditions that are influenced by the intake and benefits of nutrition in the body due to the use, absorption and consumption of food. Several factors become nutritional problems if not handled properly, such as parenting style, diet, mother's education, mother's job. Diet plays an important role in the growth process because food contains nutrients [36]. Therefore, according to Syafitriya Ningsih, a poor diet will have an impact on growth and development. The parenting patterns commonly used in families are democratic, authoritarian, permissive and neglectful parenting patterns; the parenting style is flexible to be used in the family [37]. The current study assessed maternal nutritional knowledge regarding breast milk, weaning diet, macro/micronutrients & diet during illness.

Batool's research results showed that only (17%) mothers had sufficient nutritional knowledge, while (40%) showed moderate nutritional knowledge and poor nutritional knowledge was assessed in 43% of mothers. The researchers of this study also observed that the majority of malnourished children (34/54) were with mothers whose nutritional knowledge was considered poor. Our findings are in line with research results that reveal the same picture that mothers with inadequate nutritional knowledge produce malnourished children. In this study, researchers also observed that despite poor/average nutritional knowledge, most mothers knew the benefits of breastfeeding and they were accustomed to breastfeeding their children [10].

Knowledge of nutrition and eating patterns according to research from Korea by Eun Young Song shows significant differences according to education level ( $p < 0.05$ ) and family structure ( $p < 0.05$ ). The energy intake of subjects aged 6 - 24 months and over 25 months was lower than that for Koreans. The intake of carbohydrates, protein and fat in subjects aged 6 - 24 months and over 25 months did not show significant differences according to the level of nutritional knowledge or dietary attitudes. Ca intake of subjects aged 12 months and over showed significant differences according to the level of nutritional knowledge ( $p < 0.05$ ).

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Thiamin intake of subjects aged 6 - 11 months and subjects aged more than 12 months showed significant differences according to the level of dietary attitudes ( $p < 0.05$ ). There was a small positive correlation between education level and nutritional knowledge as well as between dietary attitudes. Nutritional knowledge shows a positive correlation with eating attitudes. There is a positive correlation between nutritional knowledge and levels of Ca, Riboflavin, and Vit C [38]. This is in line with Afrinis' research which shows that mothers are malnourished and their children eat poorly. Especially those who have a history of infectious diseases and poor nutrition. Maternal knowledge, infectious diseases and diet are related to children's nutritional status [15].

Based on data obtained by Carmen's research, mothers as respondents experienced changes in their level of knowledge about balanced nutrition. Mothers know in general about balanced nutrition, types and sources of nutrition, nutrition for babies and nutritional deficiencies. Mother's knowledge about balanced nutrition is one aspect in selecting and providing basic necessities for the family. Parents' nutritional knowledge about food ingredients will influence the dishes served in the family. With adequate knowledge, mothers will provide good food for the family, especially children under five. So it is hoped that nutrition for children will be adequate according to their needs. Lack of knowledge about nutrition will influence the emergence of nutritional problems; The effect on the emergence of nutritional problems will interfere with children's growth and development [39]. In line with this, from the results of the official and Sambo research, it can be concluded that there is a relationship between mothers' knowledge about toddlers' eating patterns and the nutritional status of toddlers. It is recommended that mothers pay attention to their toddler's diet to improve the nutritional status of their toddlers [40,41].

The eating behavior of toddlers is influenced by the mother's education, which in its implementation is the preparation of toddler food such as introducing other foods, how to prepare food, how to feed, calming the child when giving complementary foods, prohibiting the child from eating certain foods, not getting the child used to eating on time [42,43]. Poor parenting patterns for toddlers are one of the factors causing problems with the nutritional status of toddlers in providing food and knowledge about types of food according to the age and needs of toddlers. Research conducted by Suharmanto states that mothers give children the freedom to eat what the toddler wants; some mothers force toddlers when giving food [44]. Food is also a factor causing stunting. The condition of these children is caused by poor nutrition, such as a lack of protein and fat in the diet, which results in a high rate of slowing of leg length [45,46].

## IV. CONCLUSION

Many studies show that a mother's level of knowledge about nutrition has a positive effect on her child's nutrition. It is believed that mothers with good nutritional knowledge choose the right food for themselves and their children. Noorma Yuneta said that the mother's knowledge about food is related to the mother's nutritional status, eating habits and there is a relationship between the child's knowledge about food. With adequate knowledge, mothers will provide good food for the family, especially children under five. So it is hoped that nutrition for children will be adequate according to their needs. Lack of knowledge about nutrition will influence the emergence of nutritional problems; The impact on the emergence of nutritional problems will disrupt the growth and development of children. Considering the continuous nutritional problems of toddlers, it is necessary to make efforts to increase the knowledge and eating patterns of toddlers with the nutritional status of toddlers and toddlers with poor nutritional status. Efforts are made to improve the nutritional status of toddlers by providing nutritious food.

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