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Complementary Feeding with Genesis Stunting in Children: A Systematic Review

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ABSTRAC
Introduction: Stunting is a problem of chronic malnutrition caused by insufficient nutrition in a long time due to feeding that is not in accordance with nutritional needs. One of the problems in feeding infants is the cessation of breastfeeding breastmilk and insufficient complementary feeding. The purpose study literature review is to identify the complementary feeding with the incidence of stunting in children.
Method: The authors conducted a relevant literature review in various data using the keywords "complementary feeding, stunting, child". Data based on SCOPUS, Science Direct, Proquest, Pubmed and Scholar.The criteria consisted of full text published in criteria were five years limit journal (2013-2018) use article using English.
Result: The Results as much as 2.090 articles found, and selected 15 article that suitable with criteria. On the process of the analysis of the articles showed that timely complementary foods, frequency of food and drinks, diversity of foods and drinks associated with the incidence of stunting. in the study of the dietary patterns of all children using the 24-hour recall food questionnaire. Interventions focusing on optimal nutrition during the complementary feeding stage, exclusive breastfeeding, and the use of deworming tablets. Good complementary feeding potential to improve children's nutritional status and can prevent stunting in children after 0-59 month.
Conclusion: stunting is influenced by the accuracy of complementary feeding, exclusive breastfeeding for 6 months, frequency of eating and drinking, diversity of iron and vitamin A-rich foods and regular administration of worm medicine

Keywords*: Children; Complementary Feeding; Stunting*

Introduction

Stunting is defined as a height that is more than two standard deviations below the World Health Organization (WHO) child growth standard median(World Health Organization, 2013). Stunting is at issue in public health compilation of the prevalence of stunting in children greater than 40% (Kementrian Kesehatan RI, 2016). Stunting is caused by poor nutrition and recurrent infectious diseases during the first 1000 days of life and will be irreversible (Geberselassie *et al.*, 2018). Bad effects caused by stunting children, in the short term are disruption of brain development, intelligence, impaired physical growth, and body metabolic disorders, and long-term decline in cognitive abilities and learning achievement, decreased immunity so easily sick, and high risk for the emergence of disease diabetes, obesity, disability at the end of old age (Keino *et al.*, 2014).

Stunting is caused by various factors such as parental status, socio-demography, economy, cultural and environmental practice and health (Gelano, Birhan and Mekonnen, 2015). Low parental education, family size and lag interval, lack of sanitation, recurrent infections, not being given breast milk, low food intake, and poor feeding practices are considered the main determinants of stunting (Semali, Mmbaga and Leyna., 2015). Among all risk factors, the practice of feeding has the most direct impact on stunting. especially in appropriate interventions to modify feeding practices have proven effective (Black *et al.*, 2013).

Poor food intake is the cause of malnutrition (Aguayo *et al.*, 2018). The age of children 6-23 months is a period of growth which is a period of high risk in growth in children because the fulfillment of nutrition cannot be fulfilled through giving breast milk alone, but children are not ready to consume family food. Provision of complementary feeding refers to the introduction of nutritious solid foods in accordance with developments other than breast milk(Panjwani and Heidkamp, 2017). Knowledge of parents or caregivers about the practice of providing complementary breast milk right (for example, offering a variety of nutritious solid foods, safe and developmental food preparation, frequency of appropriate feeding, continuous breastfeeding) is an effective strategy in increase children's intake (Dewey, 2016).

Stunting occurs at many low and medium income countries during the period of complementary feeding (6-23 months), the trasisi 500 days from the granting of

exclusive breast milk then consume a wide variety of food family meals while breastfeeding.During the period of complementary feeding of breast milk, children consume small (World Health Organization, 2013). Therefore, ensuring adequate complementary foods and feeding for children aged 6-23 months is crucial to achieving the global targets to reduce 40% of toddlers are hampered from around 171 million in 2010 be 100 million in the year 2012(A. Wang *et al.*, 2017). The study in this systematic review is interested in examining the "how food companions can affect the incidence of stunting in children?".

Method

This systematic review was reported in accordance with the PRISMA (Preferred Reporting Items for Systematic reviews) Statement.

1. Data Sources and Searches

Databased searched from Scopus, Science Direct, Proquest, Pubmed and Scholarprovide studies related to complementary feeding genesis stunting from from 2013 to 2019.

2. Study Selection

Literature review are conducted using complementary feeding, stunting, and childkeywords. The selection of articles is determined by the following inclusion criteria were full text published, articles published between to 2013-2019, articles published in English, age limit for children 0-59 months, articles focusing on Complementary Feeding and stunting.

3. Data extraction and quality assessment

All citations retrieves from electronic databases were imported to Mendeley Program. Two reviewers (BU, SNK) independently analyzed the titles and abstracts of every studies retrieved from the literature search to identify potentially eligible studies. The fulltext of the remaining studies was obtain for further examination. The last review conducted by a first reviewer (TPD).

Data of included studies were independently extracted by the same two reviewers by including first author's name, year of publication, study design, sample size, general characteristics of participants, research measurement tool and the main outcome of interest.

A descriptive analysis was done of the data obtained from the reviewed papers to include the complementray feeding with incident of stunting. Our hypothesis was that stunting were independent of complementary feeding in the 15 article

Result

As many as 2,090 articles were found, the results came from five database: 295 articles in scopus, 287 articles in Science Direct, 687 articles in Proquest, 275 articles in Pubmed and 549 articles in Scholar. The result of article selection according to the inclusion criteria of 15 articles, then given the serial number and done article analysis to facilitate the review process. There are several kinds of inclusion criteria in this study, namely the age of children 0-23 months, 0-59 months, 6-23 months, and 6-59 months and all use 24-hour questionnaires and food recall. This study used a cross sectional study, quasi experimental study, Prospective cohort study, and randomized controlled trial.

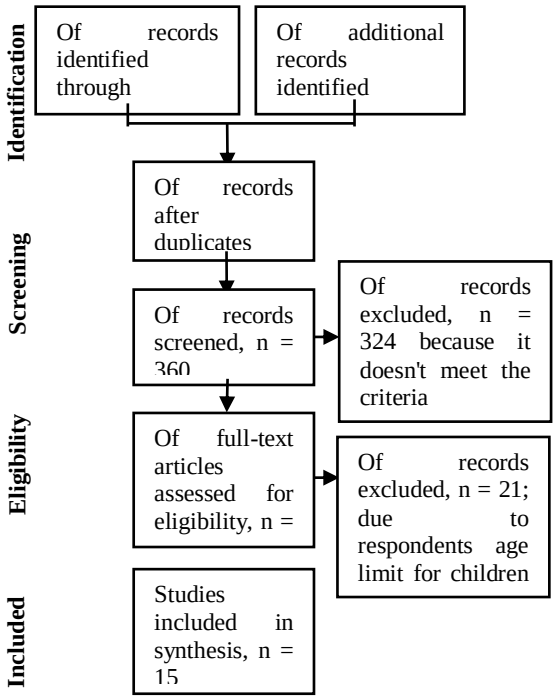

Figure 1: Paper selection step

Characteristics of participantin this systematic review of 15 studies that all the population is older, with a varied sample of 120-74.548 age of the respondents named the mother and children aged 0-59 months.research carried out in various parts of the world including Asia, Middle East, Europe, Australia, and the Americas.

In this systematic reviews of 15 articles in the review time feeding of companion.Diet feeding management timely and adequate escorts on children aged 6 months and above where breast-feeding exclusively is not enough to meet the nutritional needs of the child but the socio-economic situation affecting diversity in food, so that 44.5% 44.5% of the diversity of complementary foods do not meet the WHO recommended minimum food diversity (MDD) 17.8% overall rate of dwarfing exists in poor countries in China's West. MDD inadequate found dealing positively with stunting on childhood (Fadare *et al.*, 2018). Stunting affects food diversity, children who only consume foods rich in mikronutriet are more likely to experience stunting, on appeal of the child who consumed foods rich in vitamin A and mikronutreat are experiencing a reduction in the incidence of stunting (Krasevec, Kumapley and Frongillo, 2017). Consume animal food source (ASF) such as eggs, meat and dairy 12.6% can inhibit the occurrence of child stunting(Harding and Webb, 2019).

In india, did not reach the minimum dietary diversity and adequate minimum diet were significantly related to the occurrence of stunting and wasting. The existence of wasting and stunting needs a more integrated interventions. That is, a program that aims to prevent (among low birth weight) Low Birth Weight and Poor infant and young child feeding (IYCF) bad to prevent stunting should be linked more effectively with actions aimed at the management of the wasting (District, 2018).

Complementary feeding on children aged 6-23 months of 42.3% in babies given solid foods susui, semi-solid, or software given 2 times, 46.6% of the children in the age of 9-23 month susui given solid food 3 times a day, of which 23.5 not in susui in ages 6-23 month provided food from 4 times and 15.6% of infants who were given formula milk.The frequency of eating the minimum associated with the nutritional status of the child (Bwenge *et al.*, 2019). Less than half (40%) Kids 6-23 months (n = 174) has achieved a satisfactory feeding practices (frequency of eating food diversity and minimum minimum).The level of wasting (n = 180), dwarfing (n = 180) and underweight (n = 343) each is 10%, 22.2% and 9.3% (Kubuga, Hong and Song, 2019).

Discussion

As a result of this systematic review, the analysis showed that feeding the right companion, food diversity, and frequency of food and drinks influenced the incidence of

stunting in 15 reviewed journals. Although the diet of children is influenced by maternal socio-economic(Fadare *et al.*, 2018). Lower diversity in the Media Group in the Middle of the Group's appeal. Diet is also influenced by the age of the child. Ages 6-11 months consuming animal foods, food sources in the zero group are associated with a higher chance of being inhibited. Lack of difference in food recognition at age (Harding and Webb, 2019). Stunting is also influenced by exclusive breastfeeding which is less than 6 months old, and does not give exclusive breastfeeding (Demilew, 2019).

The provision of complementary food is not adequately affected by the reading and writing skills of formal education of mothers who are given literacy in the process of important information inadequate child feeding and protection of malnourished children (Kubuga, Hong and Song, 2019). Knowledge of micronutrient-rich foods and parental education has a relationship with micronutrient food consumption(Krasevec, Kumapley and Frongillo, 2017). In Ethiopia, stunting, thin and thin / fat rivals were 40%, 19.8%, 11.6%, and 2.7% respectively. The prevalence of malnutrition is very high. Therefore, health professionals and health education officers must provide nutritional counseling about the frequency and diversity of food, environmental and personal hygiene by giving emphasis to mothers who do not have formal education(J. Wang *et al.*, 2017). Mother's knowledge is influenced by the level of education of mothers in providing appropriate complementary breastfeeding foods that are appropriate for the variety of foods that children need to prevent stunting.

Feeding poor babies and children (IYCF) is very bad in malnourished children. In feeding practices related to waste and stunting, many children in developing countries become stunted during infancy because of improper weaning practices and poor diet so that feeding from a friend is not exactly related to malnutrition and stunting(Bwenge *et al.*, 2019). Fulfillment of nutrition in children during the stage of exclusive breastfeeding, supplementary food, and the use of worm tablets has the potential to substantially reduce the incidence of stunting (Ock, D and D, 2019). So that in preventing stunting not only fulfills the provision of various additional foods. However, it is necessary to provide iron and vitamin A-rich foods as well as an increase in exclusive breastfeeding (Aguayo *et al.*, 2017). According to research in Chile the recommended breastfeeding adherence is 11.8-97.9% and the practice of supplementary

feeding is 9.7 - 90.3% (Kinjo *et al.*, 2018). Compliance can improve nutrition in children so that it can prevent the occurrence of stunting.

Conclusions

In this review, stunting is influenced by the accuracy of complementary feeding, exclusive breastfeeding for 6 months, frequency of eating and drinking, diversity of iron and vitamin A-rich foods and regular administration of worm medicine, but not only diet but stunting are also influenced by socio-economic, parental education, family size and environmental cleanliness. So that it is necessary to provide counseling routinely about fulfilling nutrition for children so that it can prevent the occurrence of stunting.

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