



Literature Study: Relationship of Low Birth Weight and Exclusive Breastfeeding on Stunting

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Abstract. Stunting is a condition where the toddler's height is less than normal based on age and gender. The purpose of this study was to review previous studies regarding the relationship between low birth weight and exclusive breastfeeding with the incidence of stunting in children under five. The method used in this research is Systematic Literature Review. Initial search results found 804 articles. A total of 705 articles from Google Scholar and 99 articles from ProQuest. After removing as many as 6 duplicate articles, then the articles were selected based on the title, so that 535 articles were issued and the remaining 263 articles. Furthermore, 250 articles were issued because the abstract did not match the topic. Furthermore, there were 12 full papers remaining and analyzed using JBI Cross Sectional. Based on the results of the literature review, it can be said that LBW and exclusive breastfeeding are related to the incidence of stunting in toddlers. Toddlers who have low birth weight will be at risk of stunting 5 times greater than toddlers who have normal birth weight. In addition to LBW, exclusive breastfeeding is also a contributor to stunting. Toddlers who experience stunting, namely they do not get exclusive breastfeeding by 75%.

Keywords: LBW · exclusive breastfeeding · stunting

1 Introduction

Stunting or dwarfism is a state of a person's height is below normal according to age and gender. There are several factors that cause stunting such as lack of nutrition in mothers during pregnancy which can cause babies to experience low birth weight (LBW) [1]. In addition, breast milk is the best nutrition for infants 0–6 months in the early life. The problem of short toddlers can describe chronic nutritional problems [2]. At an early age, the incidence of malnutrition can cause an increase in infant mortality and can also make children sick easily and children's growth can be stunted as adults [3]. Toddlers aged 24–59 months can be categorized as susceptible to nutritional disorders, even though at that age children are in a very optimal growth period [4].

There are around 200 million cases of stunting in the world. On the other hand, the incidence of stunting in children under five in Indonesia in 2015 was around 36.4%.

This means that around 8.8 million children have age-appropriate nutritional problems with below normal weight [5]. Stunting Incidence Of the number of children under five in Indonesia, 27.7% are stunted [6]. In 2019, the incidence of stunting in all countries fell to 27.67%. Even though the prevalence is decreasing, stunting still exceeds 20% in Indonesia, making it a serious problem [7].

Infant birth weight is the weight of the baby when it was first weighed. The baby's birth weight is an indicator of the health of newborn. Infant birth weight can be influenced by the nutritional status of the mother during pregnancy as measured by height, body mass index during pregnancy, maternal weight gain during pregnancy, and hemoglobin levels. Exclusive breastfeeding is the best nutrition given to babies from the age of 0–6 months. Breast milk is also very rich in nutrients that are good for babies so that it can protect babies from being susceptible to disease, as well as help brain and physical development in babies.

Several survey results prove that knowledge of maternal nutrition, exclusive breastfeeding practices, and birth weight have an effect on the rate of stunting cases at the age of 6–24 months [8]. The first need needed by a newborn is breast milk given by the mother [9]. Exclusive breastfeeding is recommended for infants up to 6 months of age without additional feeding. Furthermore, 15% of infants with low birth weight aged 6–24 months experienced stunting [10]. Exclusive breastfeeding helps prevent developmental delays in children [11]. Researchers concluded that there are still children who suffer from stunting because they do not get exclusive breastfeeding and suffer from low birth weight.

2 Method

In this study the author uses the literature review method which is a design in research using secondary data and aims to conclude from the results study certain [12]. This study was conducted to determine the relationship between LBW and exclusive breastfeeding with the incidence of stunting in toddlers where the approach used a Systematic Literature Review (SLR). In this study, the protocol and evaluation of the Systematic Literature Review (SLR) will use the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) method to select research articles that have been found [13].

The search database used is using Google scholar and ProQuest. As for the newness of the data, search for research articles within the last 10 years. The search for articles in this SLR uses keywords equipped with Boolean Logic (AND and OR) and refers to a Subject Heading called Medical Subject Heading (MeSH). MeSH was developed by the National Library of Medicine (NLM) which is used to classify bibliography indicating topics/key publications. Furthermore, the keywords used in the search term/search order are Indonesian: “LBW OR low birth weight AND exclusive breastfeeding OR exclusive breastfeeding AND stunting OR stunting”. English: “Low birth weight AND exclusive breastfeeding AND Stunting OR dwarfism AND toddler OR baby 0–60 month OR baby 0–5 years”. “LBW OR low birth weight AND exclusive breastfeeding OR exclusive breastfeeding AND stunting OR stunting”. English: “Low birth weight AND exclusive breastfeeding AND Stunting OR dwarfism AND toddler OR baby 0–60 month OR baby 0–5 years”. “LBW OR low birth weight AND exclusive breastfeeding OR exclusive

breastfeeding AND stunting OR stunting”. English: “Low birth weight AND exclusive breastfeeding AND Stunting OR dwarfism AND toddler OR baby 0–60 month OR baby 0–5 years”.

The following is the determination of inclusion criteria in the assessment of articles:

2.1 Inclusion Criteria

Inclusion criteria are characteristics that can meet the criteria of the subject expected by the researcher. The inclusion criteria included several criteria, namely: National and international journal articles related to the incidence of LBW and exclusive breastfeeding with stunting in toddlers, Journals reviewed within a period of 10 years (2011–2020). Using Indonesian and English articles. Included in the category of articles or research journals (research articles). Journal articles can be accessed in full (free full text), and the method used is a cross sectional method.

2.2 Exclusion Criteria

Exclusion criteria are characteristics of objects that meet the selection criteria but are not included in the article search. Exclusion criteria for studies in the body of a journal article are incomplete (it is said to be complete if there are abstracts, background, methods, results, discussions, and conclusions).

2.3 Stages of Article Search

Based on the results of article searches through the Google Scholar and Proquest databases and using keywords that have been adapted to MeSH. Researchers get 804 articles. A total of 705 articles from Google Scholar and 99 articles from Proquest. After removing as many as 6 duplicate articles, then the remaining articles were selected by title, so that 535 articles were issued and the remaining 263 articles. Furthermore, 250 articles were issued because the abstracts did not match the research topic, namely the relationship between LBW and exclusive breastfeeding on the incidence of stunting. Furthermore, the remaining 13 articles, whose full papers were analyzed using the JBI Cross Sectional, left 12 articles ready for review.

3 Results

The quality assessment of the 12 articles ($n = 12$) was carried out with a JBI assessment consisting of various questions for knowing research quality. Every criteria given one of the categories “yes”, “no”, “unclear”, or “not applicable. If a criterion is worth “yes”, then it is given a score of one point, while if a criterion is worth other than “yes”, then it is given a score of zero points. Each score is then added up. If a study has at least a 50% “yes” score, then the study meets the critical criteria appraisal used in the process of literature to be reviewed, to the assessment process at The Joanna Briggs Institute (JBI).

From the results of the analysis of articles that meet the criteria, there are 14 articles on the topic of the relationship between LBW and exclusive breastfeeding with the incidence of stunting in toddlers. All articles used cross sectional design study. Based on the identification of articles with the number of respondents ranging from 50 to 24,529 respondents. The following are the results of a summary of the literature study search.

Of the twelve (12) articles that have been reviewed, there are seven (7) articles that discuss LBW on the incidence of stunting in toddlers. According to article B1 55 (47%) of 117 respondents between children with a history of LBW birth experience stunting. The remaining 53% of respondents did not have a history of LBW and did not suffer from stunting. Furthermore, the review of articles with code B2 shows that babies who are considered small at birth are more prone to severe stunting than babies born with large sizes. Furthermore, the article with code B4 says that male toddlers tend to suffer from stunting more than female toddlers.

The article with code B6 explains that 44.4% of the overall respondents who have a history of LBW suffer from stunting. Meanwhile, 9.7% of respondents who did not have a history of LBW experienced stunting. Then the article with code B9 describes the high prevalence of stunting (35.8%), underweight (20.5%), and wasting (17.2%) in children. Furthermore, from the article with code B10 it explains that from the number of whole 62.2% of respondents experienced stunting which can be categorized as high. Another finding based on the article with the code B12 explained that as many as 75% of children who experienced stunting also experienced low birth weight.

Among the 12 articles that have been reviewed, there are 7 articles that discuss the relationship between exclusive breastfeeding and the incidence of stunting in toddlers which are stated in codes B5, B6, B7, B8, B10, B11, B12. There are as many as 5 articles which say that there is a relationship between exclusive breastfeeding and the incidence of stunting. The results of the article with code B5 show that of the total number of respondents 60.9% suffer from stunting because they do not get exclusive breastfeeding. Furthermore, the article with code B6 states that of the 72 total samples, 35 (48.6%) respondents who did not receive exclusive breastfeeding were stunted. Then the article with code B7 explained that 50% of the total respondents were stunted because they did not get exclusive breastfeeding. The results of the review of articles with code B8 said that of the 37 respondents, 5% of them experienced stunting due to not getting exclusive breastfeeding. Furthermore, the results of the research in the article with code B10 stated that out of a total of 74 respondents, 68.8% who experienced stunting were not given exclusive breastfeeding for 6 months.

Meanwhile, other findings indicate that there is no relationship between exclusive breastfeeding and the occurrence of stunting. This is stated in the article with the codes B11 and B12. In the article with code B11, it states that respondents who are not stunted and are not get exclusive breastfeeding has value percentage which are not much different, namely 68.9% and 75.85%. Furthermore, in the article with code B12 it is explained that 66% of respondents do not experience stunting and do not get exclusive breastfeeding.

4 Discussion

4.1 LBW with Stunting Incidence in Toddlers

LBW is associated with stunting in children under five, which is in line with the results of the study which explained that respondents with a history of LBW contributed 6% to stunting. LBW is a newborn baby weighing less than 2500 g [14]. The causes of LBW include anemia in pregnant women and KEK in pregnancy, this can be due to lack of nutrition during pregnancy [15]. Babies with a history of low birth weight in the womb have the potential to experience slow fetal growth and do not develop according to their age. The same thing is also supported by other journals which say that compared to respondents with normal birth weight, respondents whose birth weight is less or below normal will risky 5 times more likely to suffer from stunting.

Furthermore, the results of the study explained that the incidence of LBW was closely related to morbidity, mortality and lack of nutritional status such as stunting or short toddlers. LBW can be the cause of significant health problems overall in terms of long and short period [16]. The results of this study stated that respondents who were stunted came from respondents who experienced LBW. Meanwhile, respondents with normal birth weight did not experience stunting. Children with a history of low birth weight will be more at risk of stunting than children who have normal birth weight because there is a lack of nutrition to complete the body's needs, if this happens for a long time it can lead to stunting [17]. LBW is a health problem in developing countries. The effects of LBW include asphyxia, premature birth, hypothermia, jaundice, anemia, and death. And long-term effects can lead to susceptibility to non-communicable diseases such as heart disease coroner, Hypertension, diabetes, and decreased IQ [18]. Another impact of babies who experience LBW is that it can increase the risk of death in infants, so it is necessary to do prevention since in the womb [19].

4.2 Exclusive Breastfeeding Associated with Stunting Incidents in Toddlers

The statement that has been explained is in line with research which results from 15 toddlers who do not get exclusive breastfeeding, 13 toddlers suffer from stunting [20]. Breast milk is the best food for newborn. Colostrum is the best first breast milk because contains fat, protein that serves to maintain the baby's immune system so that it is resistant to disease. Out of all toddlers who did not receive exclusive breastfeeding, 15 (75%) suffered from stunting [21]. Exclusive breastfeeding was related to the developmental delay of children aged 2 to 5 years [22]. Compared to children who are exclusive breast-fed, babies who are not getting exclusive breastfeeding for 6 months will have a 4 times higher risk of developmental delay. Toddlers who experience low birth weight or LBW have 4 times the risk of experiencing stunting [23].

Education Exclusive breastfeeding for mothers is often given during pregnancy with notify the mother at the time of examination and class for pregnant women. Often found in the field on average, newborns are not given breast milk, so they are replaced with formula milk. Giving formula milk which may not be easily digested by the baby and especially if it is not made according to the dose and the bottle is not kept clean will cause diarrhea and make the baby's stomach hurt and can cause the baby's growth and

development to be disrupted. In some cases, when the milk is out, the mother chooses to throw the milk away because it is considered dirty. Low exclusive breastfeeding can lead to stunting in toddlers which affects the child's future. To keep balance nutrition in children can be done by optimal breastfeeding. Therefore, during the growth period of the baby, the mother continues to give exclusive breastfeeding starting from the age of 0–6 months because breastfeeding is very necessary for fulfilling nutrition for the baby.

5 Conclusion

There is a relationship between Low Birth Weight (LBW) and the incidence of stunting. Toddlers with low birth weight have greater risk of stunting than toddlers with normal birth weight. Apart from LBW, exclusive breastfeeding also contributes to the occurrence of stunting in toddlers.

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