

THE INFLUENCE OF APPLYING THE BABY-LED WEANING (BLW) METHOD IN THE FEEDING OF COMPLEMENTARY FEEDING IN INFANTS

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ABSTRACT

Baby-Led Weaning is a method to introduce complementary foods to babies aged 6 months or older. Weaning or the introduction of complementary foods of breast milk can be a major role in the future growth and health of the baby. This research design uses the Literature Review method. The articles were obtained from keyword searches in the Google Scholar, Pubmed and Scient Direct databases with publications ranging from 2018-2022 in English. The results of the study which are in accordance with the inclusion state that the Baby-Led Weaning method is very influential in giving MP-ASI from an early age to infants. The results of the analysis of 5 journals found that the use of the baby Led Weaning method affects nutritional intake, oral motor development, and body weight, besides that it affects the duration of feeding and even affects the incidence of choking.

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INTRODUCTION

The method of giving complementary food for breast milk (MPASI) which is generally carried out by the community is by the mother feeding her baby, starting with food with a soft texture (Maelissa, 2020). The method of giving complementary food for breast milk (MPASI) which is generally carried out by the community is by the mother feeding her baby, starting with food with a soft texture (Andries E Arantes et al., 2018). Baby Led Weaning also teaches babies to eat on their own from the beginning of the introduction of complementary foods (Arias-Ramos et al., 2022). The BLW method besides having benefits in stimulating oral motor development.

This method introduces complementary foods to babies aged 6 months or more. because at that age the baby already has a chewing reflex with stronger digestion (Bialek-Dratwa et al., 2022). In giving baby food, it is necessary to pay attention to the timeliness of administration, frequency, type, amount of food ingredients, and method of preparation (Cameron et al., 2012). There is a habit of feeding babies that are not appropriate, including: feeding too early or too late, the food given is not enough and the frequency is not enough (Cameron et al., 2012). The three principles of BWL are that food is given to babies in whole form as finger food not thick gravy, babies can choose and hold their own food, starting with mouth contact then swallowing their own food not using a spoon or

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being fed. Then the baby eats with the family and immediately consumes family food (Costantini et al., 2018).

The report of the Scientific Advisory Committee on Nutrition (SACN), Feeding in the First Year of Life (SACN 2018) confirms existing UK recommendations that infants should be exclusively breastfed for about the first 6 months, and introduced to complementary foods (Białek-Dratwa et al., 2022). At around 6 months of age along with continued breastfeeding for at least the first year of life (Hidayatullah et al., 2021). This highlights the importance of introducing a wide variety of foods, including those containing iron, while limiting salt and sugar intake. Timing of cord clamping is recognized as an important factor in ensuring adequate iron storage (Higuera Vaca, 2021).

United Nation Journal of Community Service Ruwai Jurai 48 Children's Fund (UNICEF) and the World Health Organization (WHO) recommend exclusive breastfeeding for the first 6 months of life and continue with the introduction of complementary foods until the age of 2 years (Morison et al., 2016).

Early dietary adjustments can be pursued through Baby-Led Weaning (BLW) which is an alternative method of feeding that emphasizes the importance of babies feeding themselves from the beginning of the MPASI phase.

So many aspects of development can be developed in children if Baby Led Weaning is applied to children from the beginning of the MPASI phase. According to the 2019 World Health Organization (WHO) Guidelines in Indonesia, currently recommending delaying the introduction of solid food until the baby is six months old, babies who receive complementary foods before they are 6 months old will have a 17 times greater risk of experiencing diarrhea and 3 times greater the possibility of getting an upper respiratory infection (ARI) compared to babies who only get exclusive breastfeeding and get MP ASI on time.¹⁵ The survey results show that one of the causes of developmental disorders in infants and children aged 6-24 months in Indonesia is the low quality of MPASI (Poniedziałek et al., 2018).

From this, it is necessary to carry out an in-depth study to find out whether the application of the Baby-Led Weaning method in providing complementary feeding for ASI has a positive impact on the development of infants.

METHOD

The method used in this research is a literature review in the form of a narrative review. Writing is done by searching for articles with a combination of several keywords in the search database via Google Scholar, Pubmed and Scient Direct. The keywords used in the search were the Baby-Led Weaning Method, complementary foods for ASI.

Inclusion criteria for articles taken into the study: 1) 2018-2022 publication timeframe, 2) English-language articles, 3) Observational study design (cross-sectional, Quasy experiment and a randomized controlled study), 4) Research on the application of the Baby- Led Weaning (blw) in giving complementary food to infants. Exclusion criteria in

selecting articles: 1) All studies that did not meet the inclusion criteria were not included in the writing.

RESULTS AND DISCUSSION

The results of a review of the literature obtained in a database search using Digram Flow which corresponds to inclusion and exclusion are presented in Table 1. The results obtained from 5 (Maelissa, 2020), discussed the influence of the application of the Baby-Led Weaning method in providing complementary feeding to infants.

Table 1. Summary of Literature Search Results on the Application of the Baby-Led Weaning Method in Providing Complementary Food for Breast Milk in Babies

No.	Author	Year	Volume, Numbers	Title	Method (Design, Sample, Variable, Instrument, Analysis)	Research result
	(H. Rowan et al., 2018)	2018	Vol. 10	<i>Differences in dietary composition between infants introduced to complementary foods using Baby-led weaning and traditional spoon feeding</i>	D : Quasy eksperimen S : Seratus delapan puluh orang tua V : composition between infants introduced to complementary foods, Baby-led weaning and traditional spoon feeding I : kuesioner A : SPSS, versi 22 (IBM Corp. Armonk, NY, AS), mancova, Tes Bonferroni post-hoc	<i>Several significant differences were found between the frequency of foods eaten by different weaning and age groups: in the youngest age group, strict BLW infants were more likely to be exposed to vegetables (P = 0.000) and protein (P = 0.002) than traditionally weaned babies, whereas, at all age groups, the traditionally weaned group had the highest exposure to composite meals. However, no significant differences were found in reported exposure to iron-containing foods</i>

(Shaluhayah et al., 2020)	2021	Vol. 9	<p><i>Infant Feeding and Information Sources in Chilean Families Who Reported Baby-Led Weaning as a Complementary Feeding Method</i></p>	<p>D : cross-sectional S : 261 ibu dari anak usia <24 bulan V : Information Sources in Chilean Families, Baby-Led Weaning as a Complementary Feeding Method I : kuesioner A : Chi-square atau Fisher's</p>	<p><i>between weaning groups at any age Mothers had a median age of 28 years (IQR = 6 years), were Chilean (96.6%), re_p_orted being employed (68.2%) and 47.1% had more than 16 years of education. The majority (82.4%) of participants reported accessing information on BLW from social media, with 19% and 18% reporting having obtained information from health professionals and friends, respectively. Children were of average birth weight (91.9% between 2500 and 4000 g) and had been exclusively breastfed in the first 6 months of life (82.4%). During the practice of BLW, moth_ers reported that 78% of children experienced gagging, 28% choking and 3% suffocation. Additional information on characteristics of mothers and children is provided in Table 1. First food was given at a median age of 6.4 months (IQR = 0.7) and BLW began at a median</i></p>
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(Chelliah et al., 2022) 2021 Vol. 15

Comparison of food and nutrient intake in infants aged 6–12 months, following baby-led or traditional weaning: A cross-sectional study

D : cross-sectional
S : orang tua yang menyelesaikan survei online.
V : food and nutrient intake in infants aged 6–12 months, food and nutrient intake in infants aged 6–12 months
I : kuesioner
A : Data diekspor ke SPSS, versi 24.0,36, uji Shapiro-Wilk dan uji Kolmogorov-Smirnov

age of 6.9 months (IQR = 1.0). Infants were grouped according to age (6–8 months; TW [n = 36] and BLW [n = 24]) and (9–12 months; TW [n = 24] and BLW [n = 12]). BLW babies were more likely to be breast fed (p = 0.002), consumed a higher percentage of foods also consumed by their mother (p = 0.008) and were fed less purees (p < 0.001) at 6–8 months. TW babies were spoon fed more (p ≤ 0.001) at all ages. Amongst babies aged 6–8 months, total intake (from complementary food plus milk) of iron (p = 0.021), zinc (p = 0.048), iodine (p = 0.031), vitamin B12 (p = 0.002) and vitamin D (p = 0.042) and both vitamin B12 (p = 0.027) and vitamin D (p = 0.035) from complementary food alone was higher in babies following TW. Compared to TW, BLW babies aged 6–8 months had a higher percentage energy intake from fat (p = 0.043) and saturated fat (p = 0.026) from their milk. No differences in

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(Utami & Wanda, 2019)	2021 Vol. 25	aby-led complementary feeding: a randomized controlled study	<p>D : a randomized controlled study</p> <p>S : 280 bayi sehat berusia 5 - 6 bulan</p> <p>V : complementary feeding</p> <p>I : kuesioner</p> <p>A : SPSS 16.0, Chi-kuadrat tes</p>	<p><i>nutrient intake were observed amongst infants aged 9–12 months. Few differences were observed between groups in their number of exposures to specific food groups. Infants in the TSF were significantly currently heavier than those in the BLW group. Mean weight in kilogram of infants in the BLW group was 10.4 ± 0.9 compared with 11.1 ± 0.5 in the TSF group. There was no statistically significant difference in the iron intakes from complementary foods by the BLW (7.97 ± 1.37 mg/day) and TSF group (7.90 ± 1.68 mg/day) participants who completed the diet records. Hematologic parameters were similar at 12 months. The incidence of choking reported in the weekly interviews was not different between the groups.</i></p>
(Maelissa, 2020)	2021 Vol. 9	Baby-led weaning in Italy and potential implications for infant development	<p>D : cross-sectional</p> <p>S : 1.245 ibu dari bayi berusia 6-12 bulan</p>	<p><i>percentage of spoon-feeding, pureed food, and family food eaten by infants. Overall, mothers reported spoon-feeding very</i></p>

V : *Baby-led weaning in Italy, implications for infant development* often (mode: 100%) and their infants eating family meals very often (mode: 90%), whereas they reported pure feeding very rarely (mode: 10%). These three measures were correlated: percentage of time spent spoon-feeding with percentage of whole foods ($r = 0.556, p < .001, N = 1236$), spoon feeding with percentage of family feeding ($r = 0.464, p < .001, N = 1236$), and feeding puree with family feeding ($r = 0.491, p < .001, N = 1245$). The low scoop eating group" included 10% ($n = 125$) of the sample. "Low puree eating group" included 33.3% ($n = 415$) of the sample. "High family meal group" included 39.5% ($n = 492$) of the sample. A smaller percentage of participants simultaneously adhered to all three aspects of BLW, using low-level spoon feeding, low puree feeding and high level family feeding (6.91%, $n = 86$).

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The results obtained by the researcher after selecting from several journals using a Flow diagram, 5 journals were obtained that had compatibility with the application of the Baby-Led Weaning method in providing complementary feeding, MP-ASI is a transitional food from breast milk to family food. The provision of complementary food for breastfeeding has the aim of providing sufficient nutrients for the needs of infants or toddlers for optimal physical and psychomotor growth and development, in addition to educating infants to have good eating habits (Rahmawati et al., 2022).

The results of this study stated that overall, showed some significant differences in different food exposure groups over a 24 hours period for infants aged 6-12 months who were introduced to solid foods using BLW tight fitting, looser versions of BLW and traditional spoon feeding. Infants with strict BLW had higher exposure to vegetables and protein whereas infants who were traditionally weaned were more dependent on composite foods. BLW babies usually get chunky finger food and offer more vegetables. Traditionally weaned babies depend on commercial feeds so they are likely to get a lower intake of vegetables from the composition of commercial baby food. Most of the commenal food content is pureed. However, it should also be noted that babies who are weaned also need to get protein intake from milk. With the recommended intake of breast milk or formula milk, provide some of the baby's protein needs. Milk should remain the main part of the baby's diet during the first year which is 93% kcal. This means that complementary foods only need to provide 7% of total energy intake.

The results of this study stated that the practice of BLW is increasingly popular and clearly visible on social media, but only a few health professionals receive training on BLW, so the information obtained by mothers is mostly Most come from informal and potentially non-scientific sources. As health professionals begin to learn about BLW and how to apply the practice according to local dietary guidelines, families can change their information seeking practices. At a minimum, parents can be told, in a nonjudgmental way, that there is a lack of strong evidence and standard clinical guidelines with respect to BLW.

The introduction of complementary foods is considered a window of opportunity for the establishment of healthy eating habits from childhood to adulthood. Some BLW practices, that the first foods offered are fruits (46%) and vegetables (26%). The authors also identified several examples of non-age-appropriate foods, fluids, and additives being offered to infants according to feeding guidelines. For example, there was a high frequency of adding salt (32.0%), sugar (8.8%), honey (7.7%) or sweeteners to children's food during the first two years of life. This practice is against national and international guidelines because it is associated with poor diet. Consumption of salt, sugar, sweeteners and honey in children under 2 years of age has been linked to obesity and the risk of botulism (Zhao et al., 2021).

The results of this study stated that the characteristics of infant feeding and nutritional intake between infants who followed the Traditional Weaning (TW) or Baby Led Weaning (BLW) approach, found significant differences in the way infants were given eat (Chelliah et al., 2022). When looking at total daily intake, younger babies (6-8

months), babies with TW consume more iron, zinc, iodine, and vitamin D than BLW babies, whereas younger BLW babies consume more fat and fat saturated through breast milk than TW babies. As well as significantly higher intakes of vitamin B12 and vitamin D in younger TW infants. Younger TW babies have more exposure to iron-fortified baby cereals and commercially produced baby foods. Differences in nutrient intake and exposure to food groups disappear within 9-12 months.

The difference in estimates of iron intake at 6-8 months of age, in this study, could be a result of BLW babies eating smaller amounts because they are younger and self-feeding at a slower pace. Iron intake among infants is often problematic and more robust, so more targeted guidance/advice on iron-containing foods for all infants is needed. Older BLW babies are more often exposed to milk and protein-containing foods. Higher-than-recommended protein intake may be significant because higher protein intake can lead to weight gain over time.

The results of this study stated that a randomized control study showed that babies with BLW had lower body weight than babies with TSF (Traditional Spoon Feeding) at 12 months of age. Because when complementary foods are introduced using the TSF approach parents have more control and tend to encourage eating until they have consumed a certain amount of food. Whereas infants with BLW are more responsive to satiety (able to regulate food intake in relation to satiety) significantly less responsive to food regardless of hunger.

Better self-regulation of BLW infants is associated with a lower risk of obesity. Babies aged 6 months after BLW can eat enough for growth when they eat alone, the food offered by their parents will be low in energy. Despite not assessing the energy density of these foods only 2% of infants from the BLW group were underweight according to WHO growth charts. In this study, there was no difference in iron and anemia in infants with BLW and TSF. Infants with lower iron than some previous studies may be due to the fact that their study was small or cross-sectional and not a random sample. Mothers find BLW healthier, more comfortable and less stressful to introduce complementary foods to their babies. Evidence from observational studies suggests that BLW may make infants more susceptible to a reduced risk of overweight through increasing the response to satiety.

The results of this study stated that children who have a higher frequency of eating porridge will have slightly lower body weight than children who eat porridge rarely. Therefore, mothers perceive their children to be more in need of feeding, as they are born with low birth weight, and they are more likely to use puree feeding to ensure that their babies are consuming enough food. Similarly, in another study, mothers of lighter birth weight babies introduced solid foods earlier than mothers of heavier babies, because mothers perceived their babies to be hungrier.

Another thing that is also the reason is the mother's occupation and the time to return to work after giving birth are important factors for weaning, with the BLW approach considered to take longer or be more demanding (for example in terms of cleaning up after eating) than the PLW (parent led weaning) approach, so working

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mothers prefer to provide complementary foods with a spoon (PLW) and eat porridge. BLW mothers breastfeed their babies longer and are more likely to continue breastfeeding compared to non-BLW mothers. Mothers who follow the BLW approach generally introduce complementary foods later than mothers who do not BLW. Thus, the current data confirm that there is a positive association between the BLW approach and delaying the introduction of solid foods until around six months of age. It turned out that family feeding and spoon feeding (PLW) were associated with motor development, significantly family feeding was associated with the ability to sit and crawl earlier than children who were spoon fed. Of course, children are more prepared in their developmental stages and direct parents to choose the BLW approach in providing complementary foods.²⁰

CONCLUSION

Based on the results and discussion in the literature review, it was found that there were 5 articles indicating that there was an effect of the application of the baby-led weaning method in providing complementary feeding to infants. The effects found were the effect on nutritional intake, oral motor development, the effect on body weight, besides that it had an effect on the duration of breastfeeding and even had an effect on the incidence of choking. It is hoped that this literature review will become a source and library material for further research and will support continuing to apply the baby-led weaning method to babies who are ready to carry out the weaning stage to the fullest.

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