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Original Research Article

Baby led weaning versus traditional weaning: a comparative study to assess its impact on eating habits among infants and children

R. Hanitha[1]*, Rekha Palani[2], Suriya Deva[3]

[1]Department of Community Medicine, Madha Medical College and Research Institute, Kovur, Chennai, Tamil Nadu, India
[2]Department of Community Medicine, Bhaarath Medical College and Hospital, Selaiyur, Chennai, Tamil Nadu, India
[3]Department of Community Medicine, Srinivasan Medical College and Hospital, Dhanalakshmi Srinivasan University, Trichy, Tamil Nadu, India

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***Correspondence:**
Dr. R. Hanitha,
E-mail: haniravi794@yahoo.com

ABSTRACT

Background: UNICEF article on early childhood development suggests, major physical and social-emotional development happens in age group of 6 months to 3 years. This study was done to compare the impact of traditional weaning and baby led weaning on the overall well-being and social-emotional development of toddlers.
Methods: This is a comparative cross-sectional study conducted at Paediatric OP unit of tertiary care hospital in Tamil Nadu for a period of 1 year. Parents of toddler aged 6 months to 2 years were selected randomly using simple random sampling method.
Results: The mean weight of the participants was 11.6±2.6 kg and the mean height was 83.2±9.2 cm. 48% of mothers who followed traditional method and 56% of the mothers who followed baby led weaning were not satisfied with child growth.
Conclusions: Timely introduction of appropriate feeding practice is essential in reducing the growing under 5 mortality rate.

Keywords: Baby led weaning, Infant and young child feeding, Traditional weaning

INTRODUCTION

The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of age, and complementary breastfeeding at least until the second year of age. The introduction of complementary foods, according to WHO should be safe, adequate and well timed. It should be started when exclusive breastfeeding can no longer provide enough nutrients and energy for the infant's growth and development.[1]Weaning is defined as the process of gradual replacement of breast milk with alternate sources of nutrition, it takes lot of effort and patience from the caregiver to implement an appropriate weaning practice.[2] Weaning is associated with the development of food preferences, eating behaviour and body weight in childhood, adolescence and adulthood apart from being a great deal of rapid change for the child.[3] India, being a country of tradition and culture has a traditional weaning practice in place which is now replaced by other method like baby led weaning. Baby led weaning is self-feeding from six months of age, which has a better satiety-responsiveness but carries risk of Micronutrient deficiency. Infant on Baby led weaning shares family food and mealtimes, which is a great opportunity for both parents and infant to create adequate emotional bonding. In baby led weaning milk is offered

only on demand until they self-wean.[4] Traditional weaning on the other hand is force feeding infants with pureed infant foods, it has poor satiety response and is rich in micronutrients. In Traditional weaning method it is important that the environment is free of any distraction like TV or toys, parents should sit face to face with the baby to have eye contact in order to improve feeding via this method. In any feeding method it is to be kept in mind that key nutrition needs are met from the beginning, hence baby should be offered variety of foods and flavours.[5] Based on UNICEF article on early childhood development, major physical and social- emotional development happens in age group of 6 months to 3 years hence it is important to understand the weaning practices which aids in development of a child.[6] NFHS 5 survey suggests that only 16.3% of toddlers in India receive adequate diet. Food is essential for overall physical and mental development; it becomes important that there is adequate knowledge about weaning practices which intern plays an important role in intake of nutrition.[7] This study was done to compare the impact of traditional weaning and baby led weaning on the overall well-being and social-emotional development of toddlers.

METHODS

This is a comparative cross-sectional study which was conducted at Paediatric OP unit of Tertiary care hospital in Tamil Nadu for a period of 1 year from November 2020 to November 2021. Parents of toddler aged 6 months to 2 years were selected randomly using simple random sampling method. Parents were initially grouped as those who followed traditional weaning and those who followed baby led weaning by asking them a direct open-ended question, until we got a sample of 50 in each group, hence the total parents of toddlers included in the study was 100. Toddlers aged 6 months to 2 years with congenital anatomical malformations (e.g. cleft lip, cleft palate), metabolic disorders and lactose intolerance were excluded from the study. A validated standardized questionnaire, comprising of 2 parts was used in this study, first part is the general information of toddler like anthropometric measurements, second part is Nutri step screening tool. This questionnaire had questions related to eating habit of the child and each of the question was categorized as yes, no and sometimes. Data entry was done in an excel sheet and analysis was done using SPSS, Frequencies were represented in percentages, chi square test was used to find the association between the two feeding patterns and eating habits.

RESULTS

Among the 100 participants 10.1% aged between 6 to 12 months, 12.1% aged 1 to 1 and half years, 9.5% aged 1 and half years to 2 years and nearly 18.6% aged more than 2 years as shown in Table 1. The mean weight of the participants was 11.6±2.6 kg and the mean height was 83.2±9.2 cm (Table 1).

Table 1: Sociodemographic data and factors influencing feeding method; maternal and child.

Variables	Feeding pattern		Total
	Traditional weaning (N)	Baby led weaning (N)	
Child's gender			
Male	17	24	41
Female	33	26	59
Child age			
6-12 months	16	4	20
1 to 1 and half years	12	12	24
1 and half years to 2yrs	9	10	19
>2 years	13	24	37
Child weight			
Weight less than normal (z score < -2)	9	6	15
Normal (z score -2 to 2)	33	38	71
weight more than normal (z score >2)	8	6	14
Child height			
Height less than normal (z score <-2)	12	8	20
Normal (z score -2 to 2)	28	30	58
Height more than normal (Z score >2)	10	12	22
Breast feeding			
Yes	19	17	36
No	31	33	64
Maternal education			
Literate	29	37	66
Illiterate	21	13	34

24.6% of mothers felt that their child is of normal weight, whereas 17.1% felt the child should weigh more and 8.5% felt the child should weigh less. Only 10% of the child were hungry at meal time and 64% of the parents allowed their child to eat up to their preferences with regards to quantity of food. 82% of the mothers reported eating problems like choking and gagging episodes while feeding their children. 67% of the children are comfortable with outside food and among them 29.6% have the habit of drinking flavoured juices. 46% of the children eat fruits and vegetables and 13% of them drink milk on a regular basis. Chi square analysis was done to find the association between the two types of feeding pattern baby led weaning and traditional weaning on eating habits and nutrition. There was a statistically significant association between traditional method and frequency of food habits consumption like meals and

snacks in general, fruits and vegetables, fish and poultry (Table 2).

Table 2: Chi square test showing association between method of feeding and habit of eating fruits and vegetables among study participants; p value 0.03*.

	Consumption of fruits and vegetables		
Feeding method	**Yes**	**No**	**Sometimes**
Traditional method	28	19	3
Baby led weaning	18	21	11
Total	46	40	14

Type of feeding patterns and consumption of outside food also had a statistically significant association and maximum number of children in traditional method of feeding were comfortable with outside food. Association between feeding pattern and eating problem suggested that nearly 44 children had eating problem with traditional method of feeding. Frequency of consumption of food like vegetables, fruit, fish, poultry and milk products on somewhat regular basis was almost equal in both the patterns of feeding (Table 3).

Table 3: Chi square test showing association between feeding method and deciding the type and quantity of food.

	Letting the child decide type and quantity of food		
Feeding method	**Yes**	**No**	**Sometimes**
Traditional method	4	17	29
Baby led weaning	19	24	7
Total	23	41	36

It was found that children who were fed through traditional method was indulged in other activities while eating like playing, watching TV etc. This study also analysed whether mothers following either type of feeding method were satisfied towards child growth and development as mentioned earlier in the study, 48% of mothers who followed traditional method and 56% of the mothers who followed baby led weaning were not satisfied with child growth. Maximum number of children who were fed through baby led weaning were given opportunity to explore the food and decide the quantity of food consumption compared to traditional feeding.

DISCUSSION

A systematic review done by D'Auria et al, which critically examined the current evidence regarding the baby led weaning method shows that in a small survey there was no difference in occurrence of choking between BLW and traditional weaning groups.[3] The review also add the results of a study where 199 BLW infants were included, 30% of them experienced at least single episode of choking while consuming solids like apple. This higher rate cannot be excluded as it was mainly due to the inability of the parents to distinguish choking from gagging. Similarly, in an observational study done by Brown et al, which includes 1151 infants, assessing the risk of choking and gagging, where the study results shown that at least on episode of choking had occurred in 11.9% of the strict BLW group, in 15,5% of the loose BLW group and in 11.6% of the traditional weaning group, without significant differences among groups.

A cross sectional study done by Vyas et al, assessing the trends in weaning practices among infants and toddlers in a hilly terrain of a newly formed State of India, including 500 mothers with children less than 3 years of age have shown that most of the children (52%) were started weaning after the age of 6 months in whom undernourishment was observed (79.34%) and it was statically significant.[4] However, in our study 48% of mothers who followed traditional method and 56% of the mothers who followed baby led weaning were not satisfied with child growth. In our study, we found out that 46% of the children eats fruits and vegetables. 82% of the mothers reported eating problems like choking and gagging episodes while feeding their children. Similarly, a study done by Kahraman et al, have found that majority of the mothers irrespective of the feeding method experience anxiety while converting to complementary feeding and the mothers who bestow BLW where mostly concerned about the aspiration and choking and the mothers who applied both traditional weaning and baby led weaning were the most concerned about the reduced weight gain of the babies.[6]

In a study done by Morison et al, a cross-sectional study of dietary intake and feeding behaviour in 51 age-matched and sex-matched infants (n=25 BLW, 26 TSF) 6-8.[7]

months of age, there was a considerable difference seen in breast feeding and formula feeding between full BLW and traditional spoon-feeding groups, there were significantly higher mothers applying BLW who are currently breast feeding than the mothers giving traditional spoon-feeding method (100% vs 42%; p<0.001). In this study, while comparing to women in the TSF group, mothers in the full BLW group exclusively breastfed their babies for approximately 8 weeks longer (p=0.003) and introduced solid foods 3 weeks later (p0.001). Compared to none in the TSF group, 44% of the entire BLW group exclusively breastfed their child for the first six months. Whereas, in our study frequency of consumption of food like vegetables, fruit, fish, poultry and milk products on somewhat regular basis was almost equal in both the patterns of feeding.

A prospective study done by Arvind et al, assessing the weaning practices in children between 6 months to 2 years including 300 children shows that around 92.8% of children were breastfed.[8] 99.3% of infants aged 6 to 11 months and 88.8% of those aged 12 months or older were

nursed exclusively. The proportions in the two groups differed significantly. By the age of six months, water had been introduced to 97-99% of the children in both groups, and semisolid food to 90-96%. In these areas, there was no discernible difference between the groups.

The study has certain limitations that should be considered. It did not account for potential biases in parental reporting regarding feeding practices, which might influence the data collected through questionnaires. The cross-sectional design of the research limits its ability to establish causation between feeding methods and eating habits. Moreover, the study had limited number of study participants which may not be the representation of the broader population, and the study excluded children with congenital conditions, reducing its generalizability to diverse child populations.

CONCLUSION

Infant and young child feeding practice especially in children aged 0-23 months is important in improving the overall nutrition and wellbeing later in life. Timely introduction of appropriate feeding practice is essential in reducing the growing under 5 mortality rates.[8] It is also evident from the previous studies that sociodemographic factors like maternal age, housing condition and education played a vital role in deciding about the type of feeding method. It is important that adequate knowledge is provided to the mother about feeding methods and importance of nutrition provided during post-natal and vaccination visit. Health programs like ICDS in India have focused on catering the health needs of preschool children, whereas malnutrition has already set in before the age of 3. According to the fifth round of NFHS (2019-21) only nine states showed a decrease in the number of stunted children, ten states showed a decrease in wasting, and six states showed a decrease in underweight children. It is hence more effective to start early and more emphasis on nutrition and feeding methods have to be made in early developmental age.

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