



Complementary Feeding; Pros and Cons

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Abstract

Breastfeeding provides ideal food till 6 months of age. At the age of 6-23 surplus nutrition are also required which are accomplished by complementary feeding. As the growth proceeds, there is difficulty in meeting the nutritional requirement of the infants. For this purpose, complementary foods are in practice now a days. Complementary food consists of large number of micronutrients which include iron, phosphorus, zinc, calcium, magnesium and vitamin B6. The use of complementary foods in the developed countries is higher than the developing countries because in developing countries complementary feeding is a challenge for good nutrition. In developing countries homemade foods are used to meet the need as the commercial fortified products are out of budget. Although complementary food provides initial growth and development supplement, but it also includes some adverse effects including overweight, hyperlipidemia etc. Despite of all pros and cons complementary foods serve as versatile function in nourishment and should be used along breastfeeding at proper time.

Keywords: Breast Feeding; Complementary Feeding; Nutrition; Macro Nutrients; Micro Nutrients

Background

Complementary feeding (CF) is the process of giving young children foods other than the mother's milk. Young children are provided with other food items at the stage when mother's milk is not able to meet the nutritional needs of the baby. So, infants require some other food items with breast milk [1].

CF starts at the age of six months to 24 months. When a baby is born, he is dependent on maternal milk. After six months he requires some solid and liquid food as well as breast milk.

For the proper growth and development of infants, CF is very important. When the complementary foods are given late to the infants, there could be deficiencies of Vitamin A, Vitamin K and other important micro molecules [2]. CF also effect the mental growth and behavior of children. Hence it is necessary to protect the child from certain deficiencies and improve health status of infants. It is highly recommended that during the first six months of children's life, they should only be given mother's milk. After that they should be given other food items. CF should be a timely process. Food should be given to children at proper time and great care should

be taken to avoid any contamination in the food that is given to the infants [3].

If we look at the history of CF, it is indicated that in ancient times, there was a custom to give the infants colostrum after the week or month of the delivery. During Greek civilization, nurses were advised to give breast milk to infants for the first six months and then the other foods. In the sixteenth century there were some writers who condemn the tradition of giving food during the first six months [4]. The complementary foods which were given to children include a liquid food of oatmeal and some other grains boiled in water. In 1921, it was finally concluded that for the proper growth and development of children, CF should be started after six months of delivery. This also provide children resistance against certain infections [5].

As it was stated earlier, there should be proper timing of CF. although when a child is four months old, he can tolerate other food items, but it is necessary to give it after six months. If food is given earlier, it can cause certain pathologies such as allergies. On the other hand, if CF is delayed, this will be harmful for the child as the mother milk alone is not enough to meet the needs of the

children. Malnutrition is the major problem of children. There are many children who have stunted growth [6]. This is primarily due to the inappropriate feeding practices during early stages of child's life. In order to provide energy and other nutrients, child's diet should contain some complementary foods. These are required because even with the proper breast feeding, there was increase mortality rate of young children. This could be reduce through CF. Mostly, stunted growth occurs during the first two years of infant's life. This is the stage when a child needs high level of nutrients. So, CF is the way to protect the child from malnourishment [7].

At the start, children should be given 2-3 meals per day. This should be gradually increased. Then, children should be given 4-5 meals per day.

Hence, it is stated that CF is very essential for proper growth of infants. But these foods should be given in proper quantity at appropriate time [8].

Advantages and disadvantages

Advantages and disadvantages of complementary feeding is very much depend upon timing of introduction of complementary food to infants. If it is started at right time, then advantages can be seen otherwise disadvantages can be seen but it is often observed that either complementary foods are given too early or too late.

Advantages

- From the age of a half year, a newborn child's requirement for liveliness and supplements begins to develop that is given by special sources that is complementary feeding which fulfils need of the vitality and supplement of babies [9]. On the off chance that integral nourishment's are not presented at this age or in the event that they are given improperly, a newborn child's development may fluctuate. In numerous nations, the time of integral nourishing from 6 - 23 months is the season of pinnacle occurrence of development floundering, micronutrient insufficiencies and irresistible diseases.
- A dynamic increment in the recurrence of unfavorably susceptible sickness and nourishment hypersensitivity, particularly among youngsters in the western world has been found .allergy for egg, shellfish, nuts are frequently observed among children resistance to sustenance may be managed/guided by an early and standard work to nourishment proteins among a «basic window» which would open at 4 months of age and shut down at a half year [10]. In study demonstrated that the presentation of oat before 5 and a half long stretches of age, angle before

9 months and egg before 11 months, when contrasted with later presentations, lessens the danger of asthma, unfavorably susceptible rhinitis and atopic refinement at 5 years old.

- Previous observational investigations appeared to propose that gluten presentation somewhere in the range of 4 and a half year of age could lessen the danger of coeliac infection. All the more particularly, ESPGHAN 2008 proposals recommended to stay away from both early presentation (< 17 weeks) and late presentation (> 26 weeks) of gluten, It was additionally suggested that it can present at any age yet should present gradually .while the baby still having mother milk [11].
- Complementary feeding is expected to give vitality and basic supplements required for proceeded with development and improvement. The supplements in suggested common nourishments supplement those in special solid foods, thus the name. Supplement implies they go well together, each have a task to carry out [12].
- The prescribed nourishing practices guarantee that child gets all the important supplements, including those that are at some point missing for some, indulges (iron, zinc and vitamin A) [13]. In opposition to mainstream work on, presenting nourishment like meat, eggs and liver in the beginning periods of corresponding supporting is prescribed, in light of the fact that these nourishments are great sources of these supplements.

Disadvantages

- Some observational examinations proposed that an early presentation of complementary nourishment may expand the danger of overweight, with a lower chance for bosom bolstered instead of equation sustained newborn children yet there is no proof that presentation of integral nourishment affects the danger of creating chubbiness , type 2 diabetes, coronary disease ,hypertension and so on [14].
- Fruit juices (100% natural product), organic product drinks, vegetable juices and other sweetened refreshments (soda pops, sweetened water with or without fragrances, sweetened moment tea) are characterized as EPL (Energy Providing Liquids). There is no nutritious advantage in managing EPLs to babies in their first long stretches of life: an over the top utilization of sweetened refreshments and the resulting increment in caloric admission is related with youth stoutness [15]. AAP proposes that newborn children < a half year of age ought not drink natural product juices and for babies starting weaning, until one year of age, entire, pureed or homogenized organic product is suggested.
- The early presentation (in the initial 4 months) of dairy animals products, products of the soil squeeze likewise appears to show an expanded danger of creating T1DM

autoantibodies, yet inquire about details in this regard are few [16].

- Evidence proposes that newborn children who eat strong or fluid nourishments (other than maternal resource) before a half year of age demonstrate a higher danger of irresistible infections and higher death rates contrasted and babies who proceed with elite breastfeeding [13]. Early CF has additionally been related with the improvement of a few pathologies, for example, celiac ailment and hypersensitivities [17].
- In studies its presented that, delays in presenting complementary nourishment can likewise be adverse on the grounds that they are basic to the improvement of engine abilities amid later earliest stages; what's more, maternal milk is unequipped for satisfying a newborn child's iron, zinc and vitamin A necessities after the sixth month of life [18]. The danger of creating iron lack within the initial 2 years of life is high since kids may have insufficient body stores of iron at birth. The fast development and advancement amid outset can result in deficient iron stores due to the exhaustion of neonatal iron holds by the sixth month of life combined with low iron utilization because of awful nourishing practices, for example, the late presentation of creature foods or expending nourishment with a high phytate content [19].
- The information accessible investigations recommend that, somewhere in the range of 6 and two years of age, a protein admission of over 15% of aggregate vitality can lead, in a few subjects, to early adiposity bounce back marvels, along these lines supporting the improvement of future corpulence. As needs be, an overabundance protein would animate the discharge of insulin and IGF1, dependable both for adipogenesis and the separation of adipocyte [20]. By the by, the connection between protein admission amid weaning and later danger of hypertension and cardiovascular malady, is as yet vague.
- A youthful child's immune system isn't appropriately created during childbirth and this implies it will probably get contaminations which can be presented through nourishments and drink. Correlative strong nourishment and even water contain loads of nasties like microscopic organisms and parasites which breastmilk does not. Despite the fact that youngsters and grown-ups can generally eat and drink these things without stressing over contaminations, babies can't [21]. They have not built up the antibodies and insusceptible capacities important to keep the microorganisms expended in sustenance causing a genuine infection. Introducing solids early likewise implies acquainting you infant with irresistible living beings which cause diarrhea.
- When integral nourishments are presented, breastmilk is supplanted. Studies have demonstrated that early presentation of integral nourishments neither improves development nor

the nutritious status of babies [22]. Since breastfed newborn children self-control their admissions to meet their vitality needs, there might be no favorable position to presenting different nourishment previously a half year. Most correlative nourishments, particularly commercial nourishments, don't have the nutritious thickness nor the bioavailability that human drain has.

Result and Discussion

CF is commonly initiated before the international (WHO) and national organizations re-recommendation. The result might be a response to previous recommendations that CF is required in early months of life. CF is very important for 6th to 9th month of child because maternal milk is not satisfactory for child growth. When baby blubber, mothers suppose that it's a signal that baby is still famished so, they alternatively give the some solid and liquid food that basically unhealthy for children [23]. Mothers start to give CF on suggestion from professionals. These suggestions basically not accurate for all the time.

Complementary feeding is likely to give energy and basic supplements required for basic growth and development. CF that is given to child must be prescribed. The prescribed nourishing practices assure that child gets all the important supplements, including those that are missing at some point (iron, zinc and vitamin A) [24]. The usage of solid food and soft drinks that are injurious to health can cause health problems in children (such as diarrhea and colic). These beverages have a high fructose and sorbitol content that create many health problems in children.

Complementary feeding also has some disadvantages like that cause a dangerous disease. If complementary feeding is given to child too early, that cause the overweight of child. Overweight itself a danger for child health. Energy providing liquids (fruits juices, vegetable fruits, soda pops and organic products drinks) is beneficial for human but are not so beneficial for babies in their early life as it provides only minimal amount of nutrients and they dislocate other food sources that can give nutrition [25]. It was proposed by evidence that if the babies eat dairy products and sturdy or fluid nourishments in their early life (in the initial 4 months) causes more danger of some infections and also increases their death rates [26].

When we are talk about integral nourishment, breast milk is replacing. But this integral nourishment does not provide proper nutrition and development to child. So complementary feeding is very necessary for child. From this review paper we conclude

that infants need high energy density food but intake of this energy providing food is less [27]. Due to this many health problems are produced in the body. So, with the breast milk complementary feeding also plays a major role in the growth and development of child and also to provide essential nutrients and vitamins that are very important for the survival of children and their fitness.

Conclusion

CF is essential for infants as it fulfills the infant's essential requirement of vitamins, minerals etc. but it has certain disadvantages too. Proper time for introduction of CF to infant is also very much important because too early or too late complementary feeding cause health hazards to infants like food allergies, diarrhea etc.

Suggestions

According to the studies being carried out the suggestions made that; the use of complementary food should must be available to infants at the proper time to ensure proper growth according to the requirement. The use of CF should highly be based upon age. This study recommends that the strengthening power of the community is based upon the nutrition values and feeding practices including the arrangement of nutrition education to the caregivers for the betterment of child and the special emphasis should be on the nutritional requirement from available food.

Bibliography

1. Agostoni, C., *et al.* "Complementary feeding: a commentary by the ESPGHAN Committee on Nutrition". *Journal of Pediatric Gastroenterology and Nutrition* 46 (2016): 99-110.
2. Alvisi P., *et al.* "Recommendations on complementary feeding for healthy, full-term infants". *Italian Journal of Pediatrics* 41 (2015): 36.
3. Cortés Moreno A and AL Avilés Flores. "Factores demográficos, crianza e historia de salud: vinculación con la nutrición y el desarrollo infantil". *Universitas Psychologica* 10 (2017).
4. de la Federación and DO NORMA. "Oficial Mexicana NOM-174-SSA1-1998, Para el manejo integral de la obesidad". *Rev méd IMSS* 38 (2015): 397-403.
5. De Onis M., *et al.* "Prevalence and trends of stunting among pre-school children, 1990-2020". *Public Health Nutrition* 15 (2018): 142-148.
6. Emmett PM and LR Jones. "Diet and growth in infancy: relationship to socioeconomic background and to health and development in the Avon Longitudinal Study of Parents and Children". *Nutrition Reviews* 72 (2015): 483-506.
7. Flores-Huerta S., *et al.* "Feeding practices and nutritional status of Mexican children affiliated to the Medical Insurance for a New Generation". *Salud Pública De México* 54 (2015): s20-s27.
8. Flores-Huerta S., *et al.* "Alimentación complementaria en los niños mayores de seis meses de edad. Bases técnicas". *Boletín médico del Hospital Infantil de México* 63 (2016): 129-144.
9. Grote V., *et al.* "Do complementary feeding practices predict the later risk of obesity?" *Current Opinion in Clinical Nutrition and Metabolic Care* 15 (2017): 293-297.
10. Jimenez-cruz A., *et al.* "Infant feeding practices and obesity amongst low-income families in Mexico". *Obesity Reviews* 11 (2018): 393.
11. Kimani-Murage EW., *et al.* "Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya". *BMC Public Health* 11 (2018): 396.
12. Kimiywe J and Chege. "Determinants of Complementary Feeding and Nutrition Status of Children 6-23 Months in Vi-higa County, Kenya". *BAOJ* 3 (2017): 032.
13. Kitui J., *et al.* "Factors influencing place of delivery for women in Kenya: an analysis of the Kenya demographic and health survey, 2008/2009". *BMC Pregnancy and Childbirth* 13 (2018): 40.
14. Kulwa K., *et al.* "Poor nutrition and health persist across seasons among infants and young children in rural Tanzania". in 2nd International conference on Nutrition and Growth (2017).
15. la Cruz-Góngora D., *et al.* "Nutritional causes of anemia in Mexican children under 5 years: Results from the 2006 National Health and Nutrition Survey". *Salud pública de México* 54 (2016): 108-115.
16. Lutter CK. "Macrolevel approaches to improve the availability of complementary foods". *Food and Nutrition Bulletin* 2016. 24(1): 83-103.
17. Monterrosa EC., *et al.* "Constructing maternal knowledge frameworks. How mothers conceptualize complementary feeding". *Appetite* 2015. 59(2): 377-384.

18. Organization A. The State of Food and Agriculture, 2006: Food Aid for Food Security? Food and Agriculture Org (2017).
19. Organization WH. Global tuberculosis control: WHO report 2010. World Health Organization (2015).
20. Organization WH. and UNICEF, Estrategia mundial para la alimentación del lactante y del niño pequeño. (2017).
21. Pantoja-Mendoza IY, *et al.* "Review of complementary feeding practices in Mexican children". *Nutrition Hospitalaria* 31 (2018).
22. Pardío-López J. "Alimentación complementaria del niño de seis a 12 meses de edad". *Acta Pediátrica de México* 33 (2015): 80-88.
23. Pérez GL, *et al.* "Factores de riesgo relacionados con enfermedades alérgicas en la Ciudad de México". *Revista Alergia de Mexico* 57 (2016).
24. Posch M and Bauer. "Adaptive two stage designs and the conditional error function". *Journal of Mathematical Methods in Biosciences* 41 (2015): 689-696.
25. Vartanian, *et al.* "Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis". *American Journal of Public Health* 97 (2015): 667-675.
26. Wutich A and C McCarty. "Social networks and infant feeding in Oaxaca, Mexico". *Maternal and Child Nutrition* 4 (2018): 121-135.
27. KDHS. Kenya Demographic and Health Survey (2017).

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