

Feeding Habits of Children up to 6 Months on Complementary Feeding and/or Early Weaning

Hábitos Alimentares de Crianças com Até 6 Meses em Alimentação Complementar e/ou Desmame Precoce

Andrea de Oliveira Albuquerque ¹

Katharine Bezerra Dantas ²

Marcela Ariadne Braga Gomes Tomé ³

Juliana dos Santos Aire ⁴

Fabiane do Amaral Gubert ⁵

Mariana Cavalcante Martins ⁶

¹Nurse. PhD student in Medical-Surgical Sciences at the Federal University of Ceará (UFC). CE, Brazil. E-mail: dea-albuquerque@hotmail.com. Corresponding author

²Nurse. Specialist in Family and Community Health from the Integrated Health Residency Program of the School of Public Health of Ceará. CE, Brazil. E-mail: katharinesantas@yahoo.com.br.

³Nurse. PhD student by the Nursing Post Graduate Program at the Federal University of Ceará (UFC). CE, Brazil. E-mail: marcelaariadne@gmail.com.

⁴Nurse. MSc in Nursing by the Federal University of Ceará (UFC). CE, Brazil. E-mail: julianaaires@yahoo.com.br.

⁵Nurse. Adjunct Professor of the Nursing Department of the Federal University of Ceará (UFC). CE, Brazil. E-mail: fabianegubert@hotmail.com.

⁶Nurse. Adjunct Professor of the Nursing Department of the Federal University of Ceará (UFC). CE, Brazil. E-mail: maranaenfermagem@hotmail.com.

Abstract

This study aimed to describe the feeding habits of children aged 0 to 6 months. This is a character study of a retrospective documentary, with a quantitative approach, consisting of 63 records of children from 0 to 6 months served in the Family Development Center, on the outskirts of Fortaleza, Ceará, met January 2013 to January 2014. It was found that the exclusive breastfeeding in children under one month (46.8%), with use of milk as main food (93.5%); followed by use of food calorie (70.4%), like the porridge (61.2%) was registered a rate of 48.3% to children weaned. The early introduction of milk and food calorie culminated in a higher prevalence of early weaning.

Keywords: Supplementary Feeding; Early Weaning; Child Health; Nursing.

Resumo

Este estudo objetivou descrever os hábitos alimentares de crianças na faixa etária de 0 a 6 meses. É um estudo de caráter documental, de cunho retrospectivo, com abordagem quantitativa, composta por 63 prontuários de crianças de 0 a 6 meses atendidos no Centro de Desenvolvimento Familiar, na periferia de Fortaleza, Ceará, atendidas de janeiro de 2013 a janeiro de 2014. Verificou-se a interrupção do Aleitamento Materno Exclusivo em crianças menores de um mês (46,8%), com uso de leite como principal alimento (93,5%); seguido por uso de alimentos hipercalóricos (70,4%), como o mingau (61,2%); foi registrado uma taxa de 48,3% de crianças desmamadas. A introdução precoce de leites e alimentos hipercalóricos culminaram em uma maior prevalência do desmame precoce.

Palavras-chave: Suplementação Alimentar; Desmame Precoce; Saúde da Criança; Enfermagem.

Introduction

Breastfeeding is the ideal food for the baby and should occur exclusively from birth to six months of life. Breastfeeding is considered an important child survival strategy by the United Nations Children's Fund (Unicef), the World Health Organization (WHO) and by child protective agencies⁽¹⁾.

In Brazil, already in 2009, due to the regulations of laws that guarantee protection to breastfeeding, the data of compliance to Exclusive Breastfeeding (EB) revolved around 51.2%⁽²⁾. In Ceará, the latest data showed that about 70% of the babies accompanied by the teams of the Family Health Program (FHP) are being fed only up to four months exclusively breastfed⁽³⁾.

On this low duration of exclusive breastfeeding, the Ministry of Health - MH⁽⁴⁾, presented some types of food that are introduced early, such as: water (13.8%), teas (15.3%) and other (17.8%), often within the first month of life, as well as a quarter of children between three and six months already consumed salted food (20.7%) and fruits (24.4%).

The early introduction of solids and semi-solids, as the pastas, is one of the main contributors in the problem of risk of overweight in childhood⁽⁵⁻⁶⁾, because it is related to early consumption of foods with few and, like sweets and sugary drinks⁽⁷⁾.

During the consultations of childcare in the Family Development Center (CEDEFAM) in Fortaleza-Ceará was observed the predominance of mixed breastfeeding (breastfeeding and other types of milk) or high amounts of milk and/or pastes, among other foods not recommended, even after weaning in the age group of 0 to 6 months.

In this way, the study becomes relevant to the extent that will describe what foods are being consumed by children in the age group of zero to six months which directly influence the duration of breastfeeding, thus helping to support the clinical practice of the professional nurse, providing the proper management on the early introduction of these nutrients in order to promote health and prevent obesity-related comorbidities.

Front of the exposed, this study aimed to describe the feeding habits of children aged 0 to 6 months that started the complementary feeding/or early weaning.

Method

It was a documentary study, retrospective nature, with a quantitative approach, held in the nursing care of the Family Development Center (CEDEFAM), located in the city of Fortaleza, used as a practice field for the undergraduate degree in nursing from the Federal University of Ceará (UFC) and childcare queries reference, given an average 10 children a day.

The total of medical records of children admitted from January 2013 to January 2014, stipulated period for collection, is 250. The sample was composed of 63 records of children from 0 to 6 months served in CEDEFAM chosen for this research as the following inclusion criteria: children in supplementary feeding or withdrawal; and as exclusion criteria: children whose first childcare consultation was equal to or greater than three months, due to the absence of data on the period of the interruption of exclusive breastfeeding, have incomplete or unreadable data.

The data were collected by the researcher guided by a semi-structured form composed of closed and open questions, such as: mother-related data (name, age), socioeconomic variables (education, occupation, stay civil); child-related data (name, age), eating habits child employees (EB until age, type of food introduced after interruption of EB, age of first introduction of milks, what type of milk was introduced, the first paste/age cereal and space for detailed description of this food by age), which were answered after consulting the charts. It should be noted that prior to the start of data collection, the form was tested in relation to the understanding and relevance, in medical records of patients who have similar profile to the population of the study.

The descriptive statistics of all variables using the statistical package Statistical Package for the Social Sciences (SPSS 16.0 version). After statistical analysis results were compared, especially with the recommendations proposed by

the Ministry of Health in 2013, that guides how the ten steps for healthy eating and child health care institutions⁽⁸⁾.

The study was conducted in accordance with Resolution No. 466/12 of the National Commission of Ethics in Research (CONEP), which features about research involving humans, in which the patient records that met the inclusion criteria were selected for the study, by signing the term of faithful depositary by institution. The project was approved under the opinion No. 480,724 by the Research Ethics Committee of the Federal University of Ceará (CEP/UFC).

Results

Participated in this study records of 63 children served in the CEDEFAM in childcare consultation, these 43.5% (n = 27) are female and 56.4% (n = 35) male.

In relation to the EB, most, with 42.9% (n = 27), did not reach one month exclusive breastfeeding; or never ingested breast milk. In the range of one to four months, 54% (n = 34) interruption of exclusive breastfeeding, with 29.0% (n = 18) halted two months, decreasing progressively, reaching 1.6% (n = 1) at four months (Table 1).

Table 1. Description of the period of exclusive breastfeeding and infant feeding insertion period of children from 0 to 6 months served in CEDEFAM. Fortaleza, CE, Brazil, 2014.

	Less than 1 Month		1 to 4 Months		5 to 6 Months		Did Not Use	
	FREQ	%	FREQ	%	FREQ	%	FREQ	%
EB	27	42.9	34	54	0	0	2	3.2
Family meal/Pope	0	0	10	15.9	12	19	41	65.1
Tea/juice	3	4.8	10	15.9	10	15.9	40	63.5
Fruit/vitamin	0	0	3	4.8	4	6.3	56	88.9
Pasta/cereal (porridge)	3	4.8	26	41.3	8	12.7	26	41.3
Infant formula	5	7.9	25	39.7	2	3.2	31	49.2
Full milk powder	0	0	17	27	1	1.6	45	71.4

Source: survey data.

In time, the feeds that were introduced early, have milk as the main food .79 .3% (n = 50), including milk and whole milk formulas, followed by the pastes/porridges with 58.7% (n = 37). To a lesser extent, fruits and vitamins with just 11.1% (n = 7).

Still on Table 1, detects that the introduction of milk occurs predominantly among one to four months 66% (n = 42); It should be noted that a percentage of 25.8% (n = 16) use the milk along with the paste/porridge, not shown in the table.

The use of infant formula was the most prevalent among the three categories in the choice of first milk being introduced with 51.6% (n = 32), however, the average duration of use is a month and a half. Of the 32 children who their first infant milk formulas were 53.1% (n = 17) changed to integral milk (94.11% integral milk powder and liquid milk integral 5.8%).

The pasta/cereal (porridge) was the most prevalent in the period studied, with 58.7% (n = 37), being the largest introduction period between one and four months, 41.2% (n = 26) (table 1). Of the paste we can list cited the use of Oats with 2.6% (n = 1), Maizena® with 10.5% (n = 4), Neston® with 10.5% (n = 4), Cremogema® with 18.4% (n = 7), Arrozina® with 34.2% (n = 13) and the Mucilon® being the most cited cereal with 76.3% (n = 29).

Table 2. Relation of proportion of major food groups used (infant formula, Milk and pasta/cereal) for children from 0 to 6 months served in CEDEFAM. Fortaleza, CE, Brazil, 2014.

Period	Method	Suitable		Inappropriate		Did Not Use	
		N	%	N	%	N	%
Less than 1 Month	Milk formula	1	1.5	3	4.7	49	77.7
	Whole milk	0	0	13	20.6	50	79.3
	Porridge	0	0	3	4.7	60	95.2
1 to 4 Months	Milk formula	2	3.1	20	31.7	41	65
	Whole milk	0	0	1	1.5	62	98.4
	Porridge	0	0	24	38.9	34	53.9
5 to 6 Months	Milk formula	0	0	1	1.5	62	98.4
	Whole milk	4	6.3	25	39.6	34	53.9
	Porridge	0	0	7	11.1	53	84.1

Source: survey data.

Of the 37 mothers who offered porridge to children, all, 100% offered inappropriately (Table 2) because according to the MH, the proportion of milk or porridge offered along by the sum of the quantity of milk (in grams), the amount of sugar or other additives (in grams), if you use, the volume of water (milliliters). Taking into account the number of times administered during the day whereas a tablespoon is eight grams a shallow dessert spoon to five grams and a measure of infant formula contains approximately 4.5 grams and that the recommended values follows a proportion of 1 dessert spoon for 100 ml of boiled water per meal⁽⁸⁾.

It was a result of 27 grams as maximum solids used in preparation and 4.5 grams as minimum amount of solids used in the preparation, analyzed from the size of the spoon used and number of times per meal. As for the volume, has the maximum value of 210 ml and 50 ml minimum. These larger or smaller values than recommended by MS, leading to a nutrition and little nutritional hydroxyglutarate, in case of high volumes and high concentrations or small volumes and large concentrations, or in the case of low-calorie diets very diluted for the age. As for the number of times, one has the maximum of eight times a day and at least two times a day, in which 89.4% corresponded to that range from eight to two times a day.

The whole milk appears in highest percentage in the category inappropriate, from 5 to 6 months with 39.6% (n = 25), followed by porridge with 38.9% (n = 24) introduced in the age group of 1 to 4 months (Table 2).

Table 3. Comparison of maternal variables with the proportion of milk and porridge used in children served in CEDEFAM second Chi-square test. Fortaleza, CE, Brazil, 2014.

	Milk Proportion						P-value	Proportion Porridge				Total	
	Do not use		Inappropriate		Suitable			Do not use		Inappropriate			
	N	%	N	%	N	%		N	%	N	%		
Age													
Less than 19	0	0	5	7.9	1	1.6	0.573	1	1.6	5	7.9	0.402	6
Greater than 19	4	6.3	50	79.4	3	4.8		22	34.9	35	55.6		57
Education													
0 to 9 years	0	0	16	25.4	0	0	0.361	2	3.2	14	22.2	0.034	16
9 to 12 years	4	6.3	39	61.9	4	6.3		21	33.3	26	41.3		46
Occupation													
Maid	1	1.6	35	55.6	2	3.2	0.388	16	25.4	22	34.9	0.295	38
Unemployed /housewife	3	4.8	20	31.7	2	3.2		7	11.1	18	28.6		25
Marital status													
Single	1	1.6	23	36.5	2	3.2	0.896	5	7.9	21	33.3	0.018	26
Married/ Stable Union	3	4.8	30	47.6	2	3.2		18	28.6	17	27		35
Divorced	0	0	2	3.2	0	0		0	0	2	3.2		2
Total	4	6.3	55	87.3	4	6.3		-	23	36.5	40		63.5

Source: survey data.

In relation to statistical tests relating to maternal variables and proportion of milk (table 3), note that the variables age, education, occupation and marital status did not show significance with regard to the p-value Chi-square test, because the values observed were proportional to the number of people in each category. For example, it was observed in the sample more women aged greater than 19 years, about 90.5% (n = 57) of the sample, soon it is expected that, by the statistical analysis, there was a higher proportion of inadequate milk related to this category (n = 50).

Thus, it was observed that there was a higher incidence of inadequate ratio of milk among women with schooling between nine and twelve years, 61.9% (n = 39), with regard to the elementary and high school.

Were also observed that, 55.6% (n = 35) of the women who administered the milk in inappropriate proportions were employed and 47.6% (n = 30) were married or had a stable union.

Can be described the correlation of maternal variables with the paste ratio, so that the education of nine and twelve years, with regard to the elementary and secondary education, and marital status showed influence the proportion of paste according to the test qui-square, with value, respectively, $p = 0.034$ and $p = 0.018$, i.e. 41.3% (n = 26) of women who administered inappropriate paste proportions had elementary and high school and 33.3% (n = 21) were single. Other variables, such as age and occupation, we have that the tests did not show statistical significance as the p-value Chi-square test, because the observed values were proportional to the number of people in each category.

It can be observed, as the erroneous paste proportion, though, the same categories related to erroneous proportion of milk, as the age of 19 years (55.6%) and employment (34.9%), also mistakenly introduced the pastes. In the category of appropriate proportion of pasta, it was observed that none of the mothers introduced appropriately.

In addition to the inappropriate proportions, it was also found the use of sugar in preparing the porridge in 44.7% (n = 17) of cases. The use of water was referenced in only 64.5% (n = 40) on the total amount of 63 children who consume some food during this period.

Discussion

The results corroborate with earlier studies, resuming worrying data. Given that, for example, meets the literature is the percentage of children who have not reached a month of exclusive breastfeeding (46.8%), which resembles the last search found of the MH⁽²⁾ held in 2009, in which brings that about 40% of children in the Northeast were not being fed exclusively with breast milk to 30 days of life behind only the Southern region.

For better understanding of foods that were cited, one can outline them in two categories: with high energy density (fresh and salt porridge, family meal and pastes/cereal (porridge) these being the most prevalent in the present research; and low energy density, characterized as tea, milk, juices, fruits and vitamins.

It is known that the early introduction of other foods influences directly on the intake of

breast milk. Children tend to adjust food intake according to your energy density, that is, the more calorie foods are introduced, the lower the success of breastfeeding⁽⁹⁾. The fact that they stopped early the EB shows that the introduction of other foods led to weaning in 48.3% of the population studied.

In order to justify the reasons for the supplementary feed led to the early weaning in this population, can be pointed out that in 70.4% of cases were introduced more than one type of hyper caloric meal, enriched with sugar and industrialized, taking into view that the recommendation is to avoid very frequent feeds in breastfed children since the more food it consumes, the less milk is ingested. Soon, is suggested that three meals a day to the breastfed, the exceeding values here pointed⁽⁴⁾.

About early food introduction, the milks, which corroborates with the data described by MH, with a value of 87.25% 8. In another study⁽¹⁰⁾, still he adds that the early introduction of cow's milk,

which occurs in 4.8% of the population studied, is a risk factor for allergic, nutritional problems and promotes early weaning, in addition to representing a 30% of cases of preventable Type 1 Diabetes Mellitus⁽¹¹⁾.

Points out the existence of change of infant formula to another category of milk, justified by the high prices of these infant formulas, suitable for age, leading to a preference for other processed foods, such as milk and pasta/cereal flour based⁽¹⁰⁻¹²⁾.

The use of cereal/paste (porridge) appears mainly between two and three months. When comparing to other studies⁽⁸⁻¹¹⁻¹³⁾, in which the intake of this item appears the four months and may point out a trend of early introduction of this item. The manufacturers recommend minimal use after 12 months of life, which highlights an inappropriate behavior towards the early introduction of pastes for population, which introduced this item primarily between one and four months.

In addition, not only the use of cereal/paste (porridge), but the amount and frequency ingested for age are worrying factors, given the fact that a high proportion of sugar and added to breast milk increase around 1.5 times more the energy density of the diet⁽⁸⁾. Excessive weight gain in infants and the use of artificial milk formulas are often elements present in breastfeeding ineffective⁽¹⁴⁾.

On comparison of maternal data related to early introduction and in inappropriate proportions of milk and pasta, in literature that increased education and maternal age 20 to 35 years, are related to an increased exclusive breastfeeding⁽²⁾, contrary to the data observed in this research, they bring that 79.4% (n = 50) were larger than 19 years and 61.9% (n = 39) had elementary and high school, it can be justified by the membership of the women to the labour market n = 35 (55.6%).

The absence of the companion was a precipitating factor of early introduction of foods, having featured the introduction of paste inappropriately, observed by statistical significance level of 5%, as well as found in the literature⁽¹⁵⁾.

The last data to be quoted is the water intake. You can suggest an underreporting of

intake of water, being reported in just 40 records. This is proposed after examining studies conducted by MH that show a high sensitivity to maternal child seat, since if there's even the early use of water, by erroneous concepts about the milk, as for example, the presence of Headquarters by the salty content of milk maternal⁽⁸⁾.

Can be seen on the results that early weaning was influenced by several factors, among them are the maternal education, lack of companion and return to work before the age of six months, with other studies and contrary to the recommendations of MH.

Conclusion

In front of a panorama in which there is an early introduction of foods, needed to understand, primarily, what are the characteristics of diet introduced. So, was composed to master step of the nursing process, research. From this stage, it was possible to trace other points of the nursing process, to understand, on upcoming studies, for example, the impact of this diet on growth and child development.

Front of the objective, it was found that in relation to feeding habits for an early introduction of milk and food calorie, being the most prevalent pastes, occurring even before a month. These becoming more worrisome by your erroneous and preparation for your nutritional content, compared to EB. And, as a result of this inadequate feeding, children weaned early.

The conclusions of this research correspond to local realities, however, may contribute to the reflection in other similar situations, since it used common methodology to other studies. And enables continuity of nursing process in the studied population improving the caution.

Such reflections may provide appropriate guidance on the early introduction of this type of food, and encourage the professional investigating any type of food early, since it is the nurse's role tracking and identification changes in the growth and development of children, and the appropriate food and nutrition are essential requirements to which these occur properly.

References

1. Mariani NC. Breastfeeding manual. 3ª ed. São Paulo: Federação Brasileira das Associações de Ginecologia e Obstetrícia (FEBRASGO); 2015.
2. Ministry of Health (BR). II Prevalence of breastfeeding research in Brazilian State capitals and the Federal District. 1º Edition. Series c. Department of Programmatic and strategic Actions. Brasília, DF, 2009.
3. Government of the State of Ceará. Seminar encourages breastfeeding to reduce infant mortality rate [Internet]. 2013 [access in 2013 Oct 20]. Available from: <http://www.ceara.gov.br>.
4. Ministry of Health (BR). Child health: breastfeeding and Complementary Feeding. Notebooks of the basic attention-in paragraph 23. Series a. Brasília, DF, 2015.
5. Wang J, Wu Y, Xiong G, Chao T, Jin Q, Liu R, Yang X. Introduction of complementary feeding before 4 months of age increases the risk of childhood overweight or obesity: A meta-analysis of prospective cohort studies. *Nutrition Research* [Internet]. 2016 [access in 2013 Sep 10]; 36(8):759-770. Available from: <https://www.sciencedirect.com/science/article/pii/S0271531716000567>.
6. Barrera CM, Perrine CG, Li R, Scanlon, KS. Age at introduction to solid foods and child obesity at 6 years. *Childhood Obesity* [Internet]. 2016 [access in 2013 Sep 10]; 12(3):188-192. Available from: <https://www.liebertpub.com/doi/abs/10.1089/chi.2016.0021>.
7. American Dietetic Association. Evidence Analysis Library: Evidence-based pediatric weight management nutrition practice guideline [Internet]. [access in 2013 Sep 10]. Available from: <http://www.andevidencelibrary.com/>.
8. Ministry of Health (BR). Ten steps to a healthy diet-food guide for children under two years old: a guide for the health professional in the basic attention. Brasília, DF, 2013.
9. Oliveira JM, Castro IRRD, Venancio SI, Saldiva SRDM. Evaluation of supplementary feeding for the first two years of life: proposed indicators and instrument. *Cadernos de Saúde Pública*. 2015; 31(2): 377-394.
10. Melo CS, Gonçalves RM. Breastfeeding versus bottle-feeding. *Estudos*. 2014; 41:7-14.
11. Oliveira CM, Santos TC, Melo IM, Aguiar DT, Netto JJM. Promotion of breastfeeding: educational intervention within the family health Strategy. *Enfermagem Revista*. 2017; 20(2):99-108.
12. Saldan PC, Venancio SI, Saldiva SRDM, Vieira DG, Mello DF. Milk consumption in children under one year of age and variables associated with the consumption of breast milk. *Rev. paul. Pediatr* 2017; 35(4):407-414.
13. Vargas VS, Soares MCF. Characteristics of precocious complementary feeding in children from a city in southern Brazil. *Nutrire: rev. Soc. Bras. Alim*. 2012; 37(3):269-280.
14. Nascimento LF, Brito CP, Petriz BA. Health promotion as a tool of intervention in childhood obesity. *Jornal Brasileiro de Ciência da Saúde*. 2015; 1(1).
15. Seibel BL, Falceto OG, Hollist CSI, Springer P, Fernandes CLC, Koller SH. Social support network and family functioning: longitudinal study about families in social vulnerability. *Pensando famílias* 2017; 21(1):120-136.