COMPLEMENTARY FEEDING PRACTICES TO CHILDREN DURING THEIR FIRST YEAR OF LIFE

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This study aimed to investigate complementary feeding practices during children's first year of life in Botucatu, SP, Brazil. Practices were described according to the age range and the breastfeeding (BF) practice. Data were collected during a multi-vaccination campaign through the interview of 1,238 individuals who accompanied children younger than one year old being vaccinated. Differences associated with the BF situation were identified by the chi-square test and Fisher's exact test. The early introduction of complementary food was observed, which led to the low frequency of exclusive breastfeeding (36.9% <4 months). Children younger than 4 months old consumed tea (30.7%); children between 4 and 6 months old consumed fruits (54.1%), soups (39.9%) and home-made food (19.2%). Juice was offered only to 15.2% of children younger than 4 months old who were completed weaned, 60% of the children was offered water. Data show that the consistence of the food consumed was inappropriate: children between 6 and 8 months old were offered the family's regular food (48.8%) and children older than 8 months (71.6%) were offered soup. Therefore, interventions focused on complementary feeding are justified on the city.

DESCRIPTORS: breast feeding; Milk, human; supplementary feeding

PRÁCTICAS DE ALIMENTACIÓN COMPLEMENTARIA EN NIÑOS DENTRO DEL PRIMER AÑO DE VIDA

El objetivo fue estudiar las prácticas de alimentación complementaria en el primer año de vida de niños en la región de Botucatu, SP, las cuales fueron descritas según el grupo etáreo y las prácticas de lactancia materna (LM). Fueron entrevistados 1238 acompañantes de niños menores de 1 año vacunados en la Campaña de Vacunación Múltiple. Diferencias asociadas con la situación de LM fueron identificadas a través del test Chi-cuadrado y el test exacto de Fisher. La introducción de alimentos conplementarios fue precoz, lo que produjo una baja frecuencia en la lactancia materna exclusiva (36,9% en < 4 meses). Niños menores de 4 años consumieron mates (30,7%), entre 4 y 6 meses consumieron frutas (54,1%), sopas (39,9%) y comida (19,2%). Los jugos fueron ofrecidos apenas en 15,2% de los niños menores de 4 meses quienes ya no lactaban, y, agua en 60,0% de los casos. Los datos muestran prevalencia en el consumo de preparaciones inadecuadas con relación a su consistencia: oferta de comida por parte de la familia en niños entre 6 y 8 meses (48,8%) y oferta de sopa a niños mayores de 8 meses (71,6%). Se sugiere que el municipio realice intervenciones enfocando la alimentación suplementaria.

DESCRIPTORES: lactancia materna; leche humana; alimentación complementaria

PRÁTICAS DE ALIMENTAÇÃO COMPLEMENTAR EM CRIANÇAS NO PRIMEIRO ANO DE VIDA

Objetivou-se estudar práticas de alimentação complementar no primeiro ano de vida em Botucatu, SP, descrevendo-as segundo faixa etária e presença do aleitamento materno (AM). Foram entrevistados 1.238 acompanhantes das crianças menores de 1 ano vacinadas em Campanha de Multivacinação. Diferenças associadas à situação do AM foram identificadas pelo teste qui-quadrado e teste exato de Fisher. A introdução de alimentos complementares foi precoce, levando à baixa freqüência de aleitamento materno exclusivo (36,9% em <4 meses). Crianças menores de 4 meses consumiram chás (30,7%), crianças entre 4 e 6 meses consumiram frutas (54,1%), sopas (39,9%) e comida (19,2%). Sucos foram oferecidos a apenas 15,2% das crianças menores de 4 meses com desmame completo, água a 60%. Os dados apontam consumo de preparações inadequadas pela consistência: oferta de comida da família a crianças entre 6 e 8 meses (48,8%) e oferta de sopa a crianças acima de 8 meses (71,6%). Justificam-se no município intervenções focadas na alimentação complementar.

DESCRITORES: aleitamento materno; leite humano; suplementação alimentar

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INTRODUCTION

In the light of current scientific knowledge, there is a consensus about human milk as being the only food product that is capable of adequately attending to all physiological peculiarities of infants' metabolism during the first six months of their lives[1].

Despite advances in breastfeeding rates in the last decade, the breastfeeding situation in Brazil remains far below WHO (World Health Organization) recommendations: exclusive breastfeeding until the sixth month of life and breastfeeding with complementary foods until the age of two or more[2]. In Botucatu/SP, the city where this study was carried out, a progressive increase in exclusive breastfeeding has been observed among children younger than 120 days, with prevalence levels of 19.1% in 1995, 22.6% in 1999 and 36.9% in 2004[3].

Complementary feeding is defined as feeding during the period in which, besides mother's milk, other foods or fluids are offered to the child[4]. As there is no specific term to designate the introduction of food products to children who are not breastfed, in this study, the term complementary feeding will be used independently of the child's breastfeeding situation.

The WHO recommends the offering of complementary foods from the age of six months onwards[1]. However, the current tendency, endorsed by the Brazilian Health Ministry, is to recommend the introduction of complementary foods at the age of six months[5].

In order to guarantee satisfaction of the child's nutritional needs, complementary foods must be: timely (introduction when energy and nutrient needs exceed what exclusive breastfeeding can offer); adequate (providing sufficient energy, proteins and micronutrients to satisfy the nutritional needs of a growing child); innocuous (hygienic preparation and storage, offered with clean hands and using clean utensils), offered with a technique, frequency and consistency that are adequate for the age, attending to the child's feelings of hunger and satiety[5].

At first, the food products offered to children must be prepared especially for them, in the form of pulps, vegetable mush, cereals or fruits. These are the so-called transition foods. From the age of eight months onwards, the same foods prepared for the family can be offered, provided that they are mashed, minced, chopped or cut in small pieces. The use of cups is recommended to offer water or other fluids, while semi-solid and solid foods should be given with a plate and spoon[4].

In view of the importance of complementary feeding for the child's growth and development, this research was proposed with the aim of studying complementary feeding practices in the first year of life in Botucatu-SP, describing their use according to age range and identifying differences associated with the presence of breastfeeding.

METHOD

Study Type and Data Collection

We carried out a cross-sectional study. Data were obtained during the 1st phase of the 2004 National Multivaccination Campaign in Botucatu-SP, a city of about 110,000 inhabitants, located in the Central-South of the state. We interviewed 1238 companions of children of less than one year old – 90.6% of the estimated number of children for this age range –, and obtained information about the consumption (yes, no) of food products during the day before the research. We asked about the consumption of water, teas, juices, fruits, (liquid or powder) milk, beans, meat, porridge, soup, mush and solid food.

We studied children of less than six months to assess the timely introduction or not of complementary foods, children at the age of six months because complementary foods should start in this age range, and children between six and ten months to follow the indicators recommended by the WHO[6]. The age range between eight and twelve months was studied because, at this age, it is indicated that children start to receive the same food prepared for their relatives[4-5].

Ethical procedures

This study was assessed and approved by the Research Ethics Committee at Botucatu Medical

School and complies with recommendations for research involving human beings.

Data analysis

Questionnaires were checked and coded and a database was created in Epi Info 6.0 software, using resources that only permitted the entry of data established in the coding. File consistency was checked by verifying associated questions in part of the questionnaires and correcting the identified errors.

In order to assess the relation between complementary food consumption and the presence or not of breastfeeding, the chi-square test was used with a 5% significance level. When the number of children in a specific category was lower than five, Fisher's Exact Test was performed, with the same 5% significance level.

RESULTS

Table 1 presents the consumption frequency of complementary foods according to the child's age range.

Table 1 – Consumption frequency of complementary foods in children of less than one year old. Botucatu, 2004

Food	Age									
	0 |- 4m (n= 410)		4 |- 6m (n= 198)		6 |- 7m (n= 84)		6 |- 10m (n= 391)		8 |- 12m (n= 437)	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
Porridge										
Yes	30	7,3	69	34,8	45	53,6	209	53,5	211	48,3
No	380	92,7	129	65,2	39	46,4	182	46,5	226	51,7
Soup										
Yes	10	2,4	79	39,9	58	69,0	295	75,4	313	71,6
No	398	97,1	117	59,1	25	29,8	96	24,6	121	27,7
Not Informed	2	0,5	2	1,0	1	1,2	-	-	3	0,7
Solid Food										
Yes	2	0,5	38	19,2	41	48,8	234	59,8	327	74,8
No	399	97,3	155	78,3	42	50,0	157	40,2	110	25,2
Not Informed	9	2,2	5	2,5	1	1,2	-	-	-	
Juice										
Yes	23	5,6	76	38,4	52	61,9	264	67,5	300	68,6
No	387	94,4	122	61,6	32	38,1	127	32,5	137	31,4
Fruit										
Yes	17	4,1	107	54,1	62	73,8	289	73,9	324	74,2
No	390	95,2	88	44,4	20	23,8	94	24,1	105	24,0
Not Informed	3	0,7	3	1,5	2	2,4	8	2,0	8	1,8
Tea										
Yes	126	30,7	52	26,3	23	27,4	103	26,3	86	19,7
No	270	65,9	141	71,2	59	70,2	281	71,9	341	78,0
Not Informed	14	3,4	5	2,5	2	2,4	7	1,8	10	2,3
Others										
Yes	13	3,2	41	20,7	42	50,0	235	60,1	290	66,4
No	390	95,1	143	72,2	37	44,0	138	35,3	132	30,2
Not Informed	7	1,7	14	7,1	5	6,0	18	4,6	15	3,4

Table 1 shows that 126 children of less than four months old (30.7%) received tea, while other food products were less consumed. Moreover, the proportion of children consuming the different food products we examined increases as age advances, except for tea, for which consumption prevalence decreases to 19.7% in children older than eight months, and porridge and soup, which are a bit less consumed in the age range from eight to twelve months in comparison with children between six and ten months.

Table 2 presents the proportion of children who consumed meat in soup or solid food and beans in solid food among those receiving salty food, per age range. Children of less than four months old were excluded, as few of them received these products.

Table 2 – Introduction of complementary foods with meat or beans in children between 4 months and one year old. Botucatu, 2004

Food	Age							
	4 |- 6m (n= 198)		6 |- 7m (n= 84)		6 |- 10m (n=391)		8 |- 12m (n= 437)	
	Nº	%	Nº	%	Nº	%	Nº	%
Soup/Meat								
Yes	52	65,8	46	79,3	248	84,1	284	90,7
No	27	34,2	12	20,7	45	15,2	24	7,7
Not informed	-	-	-	-	2	0,7	5	1,6
Total	79	100,0	58	100,0	295	100,0	313	100,0
Solid food/Meat								
Yes	19	50,0	25	61,0	161	68,8	251	76,8
No	19	50,0	16	39,0	70	29,9	74	22,6
Not informed	-	-	-	-	3	1,3	2	0,6
Total	38	100,0	41	100,0	234	100,0	327	100,0
Solid food/Meat								
Yes	33	86,8	35	85,4	209	89,3	303	92,7
No	5	13,2	6	14,6	24	10,3	24	7,3
Not informed	-	-	-	-	1	0,4	-	-
Total	**38**	**100,0**	**41**	**100,0**	**234**	**100,0**	**327**	**100,0**

The offering of complementary foods with meat and beans also increased as age advanced, except for a slight decrease in the offering of food with beans among six-month-olds in comparison with children between four and six months old.

Tables 3 to 5 show the relation between the presence of breastfeeding and complementary food consumption in different age ranges.

Table 3 – Relation between breastfeeding and complementary foods in children up to six months old. Botucatu, 2004

Breastfeeding	Age 0 |- 4m (n=410)				4 |- 6m (n=198)				6 |- 7m (n=84)			
	Yes		No		Yes		No		Yes		No	
Food	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
Porridge												
Yes	16	4,7	14	21,2	36	26,1	33	55	24	54,5	21	52,5
No	328	95,3	52	78,8	102	73,9	27	45	20	45,5	19	47,5
	α^2=22,40		p=0,0000		α^2=15,40		p=0,0000		α^2=0,04		p= 0,8510	
Soup												
Yes	8	2,3	2	3	53	38,7	26	44,1	31	70,5	27	69,3
No	334	97,7	64	97	84	61,3	33	55,9	13	29,5	12	30,7
	Fisher=0,6678				α^2=0,50		p=0,481		α^2=0,01		p=0,9034	
Solid Food												
Yes	0	0	2	3	25	18,5	13	22,4	16	36,4	25	64,1
No	336	100	63	97	110	81,5	45	77,6	28	63,6	14	35,9
	Fisher=0,0259				α^2=0,39		p=0,5326		α^2=6,36		p=0,0116	
Juice												
Yes	13	3,8	10	15,2	47	34,1	29	48,3	26	59,1	26	65
No	331	96,2	56	84,8	91	65,9	31	51,7	18	40,9	14	35
	α^2=11,37		p=0,0007		α^2=3,60		p=0,0576		α^2=0,31		p=0,5775	
Fruit												
Yes	12	3,5	5	7,6	70	51,1	37	63,8	32	74,4	30	76,9
No	329	96,5	61	92,4	67	48,9	21	36,2	11	25,6	9	23,1
	α^2=2,27		p=0,1315		α^2=2,65		p=0,1013		α^2=0,07		p=0,7919	
Tea												
Yes	96	28,9	30	46,8	30	21,9	22	36,7	9	21,4	14	35
No	236	71,1	34	53,2	107	78,1	38	63,3	33	78,6	26	65
	α^2=7,98		p=0,0047		α^2=4,68		p=0,0304		α^2=1,87		p=0,1714	
Water												
Yes	57	16,6	40	60,6	78	56,5	54	90	40	90,9	37	92,5
No	286	83,4	26	39,4	60	43,5	6	10	4	9,1	3	7,5
	α^2=59,20		p=0,0000		α^2=21,09		p=0,0000		α^2=0,07		p=0,7921	
Others												
Yes	11	3,2	2	3,2	25	19,4	16	29,1	20	48,8	22	57,9
No	329	96,8	61	96,8	104	80,6	39	70,9	21	51,2	16	42,1
	Fisher=1,0000				α^2=2,10		p=0,1473		α^2=0,66		p=0,4172	

The consumption frequency of any examined food or liquid was proportionally higher among children of less than six months old who were not breastfed. In the age range under four months old, not receiving breast milk was associated with a higher frequency of porridge consumption (p=0.0000), home-made food (Fisher = 0.0259), fruit juice (p= 0.0007), teas (p= 0.0047) and water (p=0.0000). We also found an association in the age range of four to six months between not being breastfed and greater consumption of some complementary foods, such as porridge (p= 0.0000), fruit juice (p= 0.0576), teas (p= 0.0304) and water (p=0.0000). Among six-month-olds, not being breastfed was only associated with a higher consumption frequency of home-made food (p= 0.0116).

Table 4 permits comparing differences in complementary food and liquid consumption according to breastfeeding in two age ranges: six to ten months and eight to twelve months.

Table 4 – Relation between breastfeeding and complementary foods in children between six months and one year old. Botucatu, 2004

Breastfeeding	Age 6 |- 10m (n= 391)				8 |- 12m (n= 437)			
	Yes		No		Yes		No	
Food	Nº	%	Nº	%	Nº	%	Nº	%
Porridge								
Yes	100	52,1	109	54,8	89	48,4	122	48,2
No	92	47,9	90	45,2	95	51,6	131	51,8
	α^2=0,28		p=0,5938		α^2=0,00		p=0,9755	
Soup								
Yes	150	78,1	145	72,9	142	77,6	171	68,1
No	42	21,9	54	27,1	41	22,4	80	31,9
	α^2=1,46		p=0,2269		α^2=4,72		p=0,0293	
Solid Food								
Yes	103	53,7	131	65,8	136	73,9	191	75,5
No	89	46,3	68	34,2	48	26,1	62	24,5
	α^2=6,04		p=0,0140		α^2=0,14		p=0,7069	
Juice								
Yes	126	65,6	138	69,4	134	72,8	166	65,6
No	66	34,4	61	30,6	50	27,2	87	34,4
	α^2=0,62		p=0,4320		α^2=2,58		p=0,1085	
Fruit								
Yes	144	76,6	145	74,3	141	77,9	183	73,8
No	44	23,4	50	25,7	40	22,1	65	26,2
	α^2=0,26		p=0,6110		α^2=0,96		p=0,3281	
Tea								
Yes	42	22,6	61	30,8	30	16,8	56	22,5
No	144	77,4	137	69,2	148	83,2	193	77,5
	α^2=3,31		p=0,0689		α^2=2,05		p=0,1522	
Water								
Yes	182	94,8	188	94,5	179	97,3	243	96
No	10	5,2	11	5,5	5	2,7	10	4
	α^2=0,02		p=0,8886		α^2=0,49		p=0,4837	
Others								
Yes	106	58,6	129	67,2	120	68,6	170	68,8
No	75	41,4	63	32,8	55	31,4	77	31,2
	α^2=2,97		p=0,0846		α^2=0,00		p=0,9556	

We observed some differences in complementary food consumption according to the presence of breastfeeding. In the age range between six and ten months, the absence of breastfeeding was associated with a higher frequency of children receiving home-made food (p= 0.0140). Breastfed children between eight and twelve months old, on the other hand, received significantly more soup (p= 0.0293).

Table 5 shows the presence of meat in soup preparations and meat or beans in homemade food according to breastfeeding in children between four and twelve months old.

Table 5 – Relation between breastfeeding and introduction of complementary foods with meat or beans in children between four months and one year old. Botucatu, 2004

Food	Soup with meat				Adult food whit meat				Adult food whit beans			
Age/Breastfeeding	Yes		No		Yes		No		Yes		No	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
4|-6m												
Breastfeeding												
Yes	32	61,5	21	77,8	11	57,9	14	73,7	22	66,7	3	60
No	20	38,5	6	22,2	8	42,1	5	26,3	11	33,3	2	40
	α^2=2,12		p=0,1451		α^2=1,05		p=0,3049		Fisher=1,0000			
6|-7m												
Breastfeeding												
Yes	23	50	8	66,7	8	32	8	50	11	31,4	5	83,3
No	23	50	4	33,3	17	68	8	50	24	68,6	1	16,7
	α^2=1,06		p=0,3026		α^2=1,33		p=0,2490		Fisher=0,0260			
6|-10m												
Breastfeeding												
Yes	121	48,8	27	60	67	41,6	33	47,1	91	43,5	11	45,8
No	127	51,2	18	40	94	58,4	37	52,9	118	56,5	13	54,2
	α^2=1,91		p=0,1664		α^2=0,61		p=0,4358		α^2=0,05		p=0,8302	
8|-12m												
Breastfeeding												
Yes	129	45,4	11	45,8	103	41	31	41,9	127	41,9	8	33,3
No	155	54,6	13	54,2	148	59	43	58,1	176	58,1	16	66,7
	α^2=0,00		p=0,9690		α^2=0,02		p=0,8954		α^2=0,68		p=0,4111	

Table 5 evidences an association between not being breastfed and greater consumption of home-made food with beans for children at the age of six months old only (Fisher = 0.0260).

Finally, we also examined the way liquids were offered to children of less than one year old, whether feeding bottles were used, in relation to breastfeeding. We found an association between not being breastfed and using rubber teats on feeding bottles to offer liquids across all age ranges (data not included in any Table).

DISCUSSION

First, we will consider some aspects related to the validity of this study. Selecting children participating in a Multivaccination Campaign revealed to be a good choice, because it allowed us to assess the feeding of 90.6% of children under one year old in the city, guaranteeing high populational representativeness. However, as this is a cross-sectional study, it is limited by the impossibility of identifying at what age the consumption of each food product started.

The results obtained in this research evidence the untimely and early introduction of complementary foods in child feeding in the city under study, leading to the interruption of exclusive breastfeeding as early as the first months of life. The same situation has been observed in other national studies[7-10], indicating that this is not a local problem.

A comparison between children of less than four months old in this study and children of the same age from a city in the Northeast of Brazil[9] shows that the situation is a bit better in Botucatu: lower prevalence levels of juice (8.4% and 5.6%), soup (5.3% and 2.4%) and home-made food (2.1% and 0.5%), despite similar tea consumption levels (31.8% and 30.7%).

Complementing breast milk with non-nutritive liquids like teas during the first six months of life is a long-established cultural practice in our means, but inadequate and unnecessary from a biological perspective, despite long and dry days. Moreover, this habit knowingly leads to decreased total milk consumption and can culminate in early weaning, besides raising morbidity and mortality risks[5]. In this study, we found that tea was present in feeding habits during the first year of life, with the highest consumption frequencies in children of less than four months old, where almost one third of children consumed it on the day before data collection.

In another study carried out in Botucatu in 2004, it was evidenced that the main motive the mothers alleged for the early introduction of teas in their children's feeding was considering that the child needed these fluids, that is, that they were necessary to satisfy the child's needs[11], suggesting lack of knowledge about the possible harmful effects for health of these foods in this stage of life.

As expected, the proportion of children in this study who consumed semi-solid, solid and liquid foods increased with age. The same occurred in São Carlos-SP and Feira de Santana-BA, where foods like fruits, mush and home-made food presented constantly increasing consumption prevalence rates[8-9].

After completing six months, the presence of complementary foods is desirable but, until the age of eight months, these should be prepared especially for the child and offered as porridge, vegetable mush, cereals or fruits[5]. As opposed to these recommendations, we found in this research that 48.8% of children at the age of six months (6|-7m) were already receiving the same home-made food prepared for the entire family, that is, an inadequate consistency that could impair the acceptance of the food and expose the child to nutritional deficiencies.

Only 19 children (3.0%) aged six months or older were receiving no solid or semi-solid food whatsoever (home-made food, fruit or salty mush). Hence, the problem in the city under study is related to the early and not late introduction of complementary foods.

The offering of meat in soup increased when comparing the age groups between six and ten months and between eight and twelve months, reaching considerable parts of the children: 84.1% and 90.7%, respectively. The same occurred with the offering of meat in home-made food: 68.8% and 76.8% and beans in food: 89.3% and 92.7%. Independently of the age range, we perceived a favorable situation for adequate iron intake.

The introduction of complementary foods should also be discussed according to the type of feeding that is practiced, in view of varying recommendations.

For children of less than four months and between four and six months, complementary food consumption has always been higher in non-breastfed children, which is understandable, as the earlier introduction of complementary foods is recommended when breastfeeding is absent: water between meals as from birth; fruit juice between two and four months for children receiving full-fat milk; fruit and salty mush from the fourth to the eighth month of life[12].

In general, the city displayed an unfavorable situation for children of less than four months: the prevalence of breastfeeding was only 36.9%[3]; among non-breastfed children, on the other hand, the presence of complementary foods was less frequent than recommended levels. In this last group, only 60.6% received water. Among non-breastfed children between 2 |- 4 months, only 12.1% received fruit juice, which is recommended to supply vitamin C needs in children receiving non-enriched cow's milk.

The high consumption level of teas among non-breastfed children (46.8%) seems to indicate that their mothers replace water (recommended) by tea (advised against). In the mothers' representation, tea plays an important role to relieve the child's cramps[11].

The complementary feeding situation among non-breastfed children from four months onwards is slightly better: in the age range between 4 |- 6 months, 48.3% received juice, 63.8% fruit mush and 44.1% soup.

For breastfed children between 6 |- 7 months, 90.9% received solid or semi-solid foods, indicating a high level of timely complementary feeding in this age range. However, as this is a cross-sectional study, we cannot affirm when these products were introduced.

As to offering the same foods prepared for the family to the child, the same recommendations are given independently of the duration of breastfeeding, that is, to introduce this food from the eighth month of life onwards. However, between 6 |- 7 months, 36.4% of the breastfed children received home-made food, against 64.1% of non-breastfed children, evidencing the early transition from a doughy to a solid consistency, mainly among non-breastfed children. These data also indicate the early interruption of special food preparation for all of the child's meals, which may be a risk, as the Brazilian adult population's vegetable consumption is low[13].

It was observed in this study that approximately three quarters of the children between 8 |- 12 months (73.9% of breastfed and 75.5% of non-breastfed children) had received home-made food on the day before data collection. This practice is considered adequate for this age range. However, soup consumption was also high: 68.1% among non-breastfed and 77.6% among breastfed children, which should be discouraged, due to the inadequate consistency of this food for this age range, as children's reduced gastric capacity makes it difficult for them to supply their energy needs through diluted complementary foods[4].

Continued breastfeeding rates at eight, ten and twelve months corresponded to 51.0%, 43.1% and 37.8%, respectively. Although these levels are far from ideal, they indicate a reasonable situation for continued breastfeeding, especially in the eighth month of life. Thus, the early introduction of complementary foods, accompanied by the interruption of exclusive breastfeeding, is ratified as the city's main problem.

The use of artificial teats to offer complementary feeding, such as feeding bottles, was significantly and negatively associated with breastfeeding in all age ranges. This also occurred in other studies[7-10], highlighting the importance of informing and advising against these in maternity hospitals and kindergartens, as well as strategies to address the mothers, evidence the harmful effects of using them and the viability of offering complementary feeding using cups, plates and spoons.

FINAL CONSIDERATIONS

Complementary foods were introduced at an early stage in children of less than one year old. Almost one third of children under four months old used non-nutritive fluids like teas, leading to low exclusive breastfeeding prevalence levels. In this age range, non-breastfed children were in a better situation in terms of complementary feeding: tea consumption was also frequent, children needing fruit juice did not receive it and the prevalence of water consumption, which should be offered to all children, was approximately 60%. This produced low levels of timely complementary food introduction in the first months of life, independently of the breastfeeding situation.

As to complementary feeding consumed by children between six and twelve months old, the low prevalence level of children who had not received solid or semi-solid foods on the day before data collection again ratifies the early and not late introduction of food products as the city's problem. In this age range, indicators were favorable: high prevalence of children receiving soups with meat and home-made food with meat and beans, which are good sources of iron, a critical nutrient in this age range. However, some problems were detected in terms of food consistency, such as the early offering of solid foods and the maintenance of soup for children who should be receiving solid food.

Hence, professionals and health services active in breastfeeding promotion and support now have to work to change this unfavorable picture in terms of complementary food consumption. There is an urgent need to focus food counseling for breastfeeding infants on complementary feeding, besides the already quite disseminated actions implemented in our means to promote and support breastfeeding.

A successful experience was recently developed in the South of Brazil, where undergraduate nutrition students were trained and paid ten home visits to a group of breastfeeding infants and their mothers, during the first life year, giving advice based on guidelines by the Brazilian Health Ministry[5]. In comparison with a group that did not receive the intervention, lower levels of fluid introduction like water and tea were found among the studied children in the first year of life, as well as a 60% increase in the chance of receiving exclusive breastfeeding for at least four months, and a 40 % lower consumption of sweets (candies, soft drinks, snacks and chocolate), among other observed benefits[14].

Another Brazilian study, carried out in the Northeast, also identified a very favorable response to a home intervention aimed at supporting exclusive breastfeeding and avoiding the early introduction of complementary feeding[15].

Making possible actions as efficient as those described above in public basic health care services is a challenge health professionals have to face without delay. Evidence shows the child's home as the preferential space for their development.

Finally, it should be appointed that this study did not aim to get to know why the detected complementary feeding problems occur. It is known that child care practices, including feeding practices, are influenced by cultural, emotional, socioeconomic and health service problems. Hence, new studies are recommended, both epidemiological and qualitative research, to obtain deeper knowledge about the conditioning factors of maternal behavior related to infant feeding nowadays.

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