Evaluation of employees in public day care centers knowledge about breastfeeding and complementary feeding

Avaliação do conhecimento de funcionárias de escolas municipais de educação infantil sobre aleitamento materno e alimentação complementar

Evaluación del conocimiento de funcionarios de escuelas municipales de educación infantil sobre lactancia materna y alimentación complementaria

Joelânia Pires de O. Souza[1], Amanda Moura Prudente[1], Dyene Aparecida Silva[1], Leandro Alves Pereira[1], Ana Elisa M. Rinaldi[1]

ABSTRACT

Objective: To evaluate the knowledge of public day care centers employees about breastfeeding and complementary feeding.

Methods: A cross-sectional study was conducted in 15 public day care centers randomly selected in the city of Uberlandia, Southeast Brazil. A questionnaire applied to school principals, teachers, educators and general services assistants (GSA) included demographic and socioeconomic variables and questions about knowledge on breastfeeding, complementary feeding besides employees' perceptions about these subjects. Kruskal-Wallis with multiple comparison and chi-square tests were used to compare variables by professional category.

Results: 304 employees participated in the study. The highest percentages of correct answers were noted for questions about exclusive breastfeeding: definition – 97% (n=296) and duration – 65% (n=199). Regarding complementary feeding, 61% (n=187) correctly answered about the appropriate age to introduce it, with a lower percentage for meat (56%; n=170) and sugar (16%; n=50). Concerning employees' perceptions, 9% (n=29) believed that there is weak breast milk, 79% (n=241) and 51% (n=157) reported the negative influence of bottle feeding and pacifier use on breastfeeding. Among the interviewed subjects, 77% (n=234) answered that they had a positive influence on the quality of the food given to the children. There were no differences in the answers according to professional category, except for the negative influence of pacifiers on breastfeeding.

Conclusions: Employees of public day care centers knew more about breastfeeding than about complementary feeding. Educational activities about breastfeeding and complementary feeding are necessary for day care centers employees.

Key-words: child rearing; breast feeding; knowledge; infant food.

RESUMO

Objetivo: Avaliar o conhecimento de funcionárias de creches públicas sobre aleitamento materno e alimentação complementar.

Métodos: Estudo transversal, realizado em 15 escolas municipais de educação infantil de Uberlândia, Minas Gerais, selecionadas por amostragem probabilística. Participaram do estudo diretoras, professoras, educadoras e auxiliares de serviços gerais (ASG). O instrumento da pesquisa foi um questio-

Instituição: Curso de Nutrição da Faculdade de Medicina da Universidade Federal de Uberlândia (UFU), Uberlândia, MG, Brasil

[1]Faculdade de Medicina da UFU, Uberlândia, MG, Brasil

Endereço para correspondência:
Ana Elisa M. Rinaldi
Avenida Pará, 1.720, bloco 2U – Umuarama
CEP 38405-320 – Uberlândia/MG
E-mail: anaelisarinaldi@gmail.com

Fonte financiadora: Pró-reitoria de Graduação da Universidade Federal de Uberlândia – Programa de Bolsas de Graduação (resolução nº 08/2010 – edital nº 5/2010)
Conflito de interesse: nada a declarar

Recebido em: 29/1/2013
Aprovado em: 6/6/2013

nário composto por variáveis demográficas, socioeconômicas e questões que avaliaram o conhecimento sobre aleitamento materno, alimentação complementar e percepções das funcionárias sobre o tema. Utilizou-se o teste de Kruskal-Wallis com comparação múltipla e o teste do qui-quadrado para comparar as variáveis por categoria profissional.

Resultados: Participaram do estudo 304 funcionárias. O maior percentual de acerto ocorreu para as questões sobre aleitamento materno exclusivo, sendo 97% (n=296) para definição e 65% (n=199) para duração. Quanto à alimentação complementar, 61% (n=187) responderam corretamente a idade de introduzi-la, com percentual inferior para a introdução de carne 56% (n=170) e de açúcar, 16% (n=50). Sobre as percepções das funcionárias, 9% (n=29) relataram existir leite materno fraco; 79% (n=241) e 51% (n=157) relataram a influência negativa da mamadeira e da chupeta na amamentação e 77% (n=234) acreditavam influenciar positivamente a qualidade da alimentação oferecida às crianças. Não houve diferença nas respostas segundo o cargo, com exceção da influência negativa da chupeta na amamentação.

Conclusões: O conhecimento das funcionárias de creches públicas sobre o aleitamento materno foi superior ao da alimentação complementar. Trabalhos educativos sobre a temática são necessários para toda equipe escolar.

Palavras-chave: educação infantil; aleitamento materno; conhecimento; alimentos infantis.

RESUMEN

Objetivo: Evaluar el conocimiento de funcionarias de guarderías públicas sobre lactancia materna y alimentación complementaria.

Métodos: Estudio transversal, realizado en 15 escuelas municipales de educación infantil de Uberlândia, Minas Gerais, seleccionadas por muestreo probabilístico. Participaron del estudio directoras, maestras, educadoras y ayudantes de servicios generales (ASG). El instrumento de investigación fue un cuestionario compuesto por variables demográficas, socioeconómicas y cuestiones que evaluaron el conocimiento sobre lactancia materna, alimentación complementaria y percepciones de las funcionarias sobre el tema. Se utilizó la prueba de Kruskal-Wallis con comparación múltiple y la prueba del chi-cuadrado, para comparar las variables por categoría profesional.

Resultados: Participaron del estudio 304 funcionarias. El porcentaje más grande de acierto ocurrió para las cuestiones sobre lactancia materna exclusiva, siendo el 97% (n=296) para definición y el 65% (n=199) para duración. Respecto a la alimentación complementar, el 61% (n=187) contestó correctamente la edad de introducirla, con porcentaje inferior para la introducción de carne, 56% (n=170) y de azúcar, 16% (n=50). Sobre las percepciones de las funcionarias, el 9% (n=29) relataron existir leche materna débil; el 79% (n=241) y el 51% (n=157) relataron la influencia negativa del biberón y del chupete, respectivamente, en la amamantación, y el 77% (n=234) creen influenciar positivamente en la calidad de la alimentación ofrecida a los niños. No hubo diferencia en las respuestas según el cargo, excepto por la influencia negativa del chupete en la amamantación.

Conclusiones: El conocimiento sobre la lactancia materna fue superior al de la alimentación complementaria, a pesar que las funcionarias se concentran en la preparación de los alimentos. Trabajos educativos sobre la temática son necesarios a todo el equipo escolar.

Palabras clave: educación infantil; lactancia materna; conocimiento; alimentos infantiles.

Introduction

In recent decades, child feeding practices have become the focus of several studies about its consequences in the short and especially in the long-term[1]. Early intervention in nutrition in the early years of life is crucial for preventing overweight in childhood and adulthood[2].

National studies point to the short duration of exclusive breastfeeding (1.4 months)[3] and the early introduction of foods such as other milks, from the 1st month (18%), salty food from the 3rd month (21%), and sugary foods between 9 and 12 months (11.6% – soft drinks and 71.7% – cookies/snacks). The consistency of the food (highly liquefied)[4,5] and excessive salt intake are other inadequacies[6].

Eating habits have their foundations lay in childhood, transmitted by family and supported by traditions, with significant influence of the school environment[7]. At school, the teacher plays a fundamental role in the establishment of good food habits of children, and it is necessary that he or she accompanies meals, observes the rhythm of each student, and provides their autonomy to eat[8]. A recent plan to cope with non-communicable chronic diseases considers schools as one of the places to promote healthy eating habits[9].

The day care centers were created in Europe in the late 18th and early 19th century and, in Brazil, they appeared

in the late 19th century. These periods were marked by the onset of urbanization and industrialization. The mission of these institutions was to take care of children from zero to 3 years old during the working hours of women and other members of the family[10]. In Brazil, this mission was changed from the 1990s, with the incorporation of early childhood education as the first stage of basic education[11]. Another important change was the need for higher education degrees for teachers working in early childhood education[11]. From 2006, education and care were to be addressed jointly in early childhood education, inaugurating the education of the human person[10,12].

The review of the small number of studies that assessed the knowledge of educators/teachers on infant feeding indicates that the issue is little explored, including within education itself. Shimabukuro *et al*[13] found a high percentage of errors of educators, particularly on the introduction of new foods, and concluded that the current knowledge of the professionals is insufficient to promote good nutrition. Campos *et al*[14] found that, in Brazilian day care centers, feeding is the responsibility of school snack cooks and few educative activities are performed for children under 2 years old. The knowledge about appropriate feeding practices for all school staff should be used as a tool to create an environment that facilitates the adoption of healthy eating habits. In this context, the present study assessed the knowledge of employees of public day care centers on breastfeeding and complementary feeding.

Method

Cross-sectional study in municipal schools of early childhood education (MSCE) in Uberlândia, state of Minas Gerais, Brazil, having as target-population all the employees. These education institutions admit children under 5 years old. Data collection was carried out in the period of February-July 2011. The municipal early childhood education network is composed of 46 institutions. Childhood education encompasses day care centers and pre-school, being the first responsible for the care of children from zero to 3 years old and the second, of children from 4 to 5 years[11]. Therefore, in this article, the term "day care center" is used.

Day care centers were selected by stratified sampling with probability proportional to the size of each stratum (geographic sector). The daycares were classified according to the neighborhood, in one of five sectors (strata). Subsequently, 30% of nurseries were selected (n=16) by random sampling (random numbers), in proportion to the number of daycares by sector. The unit of stratification was the day care center. This sampling method was chosen due to the difficulty of access to the exact number of professionals by daycare in the period of data collection, because of sick leaves, holidays, excused absences, transfers, and public contests. Moreover, the number of teachers and educators varies according to the number of children, being one adult (teacher/educator) for each six (under 1 year) children and one adult for every eight children (from 1 to 2 years).

In selected schools, all employees were women. All principals, pedagogical coordinators, teachers, educators, and General Services Assistants (GSAs) working with children under 2 years were invited to participate in the study. In schools with a larger number of children, there was physical space and GSAs especially to prepare meals for children under 2 years. This factor determined a smaller number of GSAs respondents in four schools.

The distribution of employees in each school, according to the category, was homogeneous for principals and pedagogical coordinators (one for each position by school), but the number of GSAs ranged from one to ten, of teachers, from one to six, and of educators, from four to 19. This variation is explained by the number of children enrolled, the workload of professionals (part time or full time), and the type of employment (contest or contract).

All principals and pedagogical coordinators agreed to participate. There was a loss of 10% (n=31) of GSAs, teachers, and educators for absences in the days of collection, absence for sick leave, vacation, and by refusal in answering the questionnaire (only seven employees for this reason). The final sample consisted of 304 employees. Among these, 76 (25%) were GSAs; 155 (51%), educators; 43 (14%), teachers; 15 (5%), principals, and 15 (5%), pedagogical coordinators.

The research team was composed of four members and the training to apply the survey instrument was conducted before the pilot study. The instrument was administered by the researchers themselves.

The research instrument was a questionnaire consisting of demographic (age, sex, and marital status), and socioeconomic (education and income) variables, questions about the perceptions of employees about their influence on infant feeding issues, and questions evaluating knowledge about breastfeeding and complementary feeding. The questions that addressed these two topics were related to: definition of exclusive breastfeeding (EBF) — only breast milk with or without syrups containing vitamins, oral rehydration

salts, mineral supplements or medicines; recommended duration of exclusive breastfeeding (correct answer: 6 months); recommended duration of breastfeeding (correct answer: 2 years); interference of baby bottles and pacifiers on breastfeeding (correct answer: undermine the practice); existence of weak milk (wrong answer); appropriate container for supply of expressed breast milk (correct answer: specific cup); recommended age for the introduction of food (correct answer: from the 6th month), sugar (correct answer: avoid up to 2 years) and meats (correct answer: from the 6th month)[15]. The principals/educational coordinators were questioned about which information on child feeding they received during their graduation studies and if, at the time of enrollment in the daycare, parents were questioned about the child's feeding.

To describe the demographic and socioeconomic variables, management and coordination positions were grouped because they have a similar profile (age and education). To assess knowledge, it was decided to group teachers and educators, as they share the same room with the children. The educator has primary care (diapering, bathing, and feeding) as her main responsibility and the teacher plans educational activities. The name "GSA" replaced the term "school snack cook" and their functions are to prepare meals and clean up the school. All meals are prepared in the schools and comprise the menu prepared by a nutritionist from the Municipal Schools Feeding Program of the Department of Education.

Data were entered and organized in Epi-Info, version 3.5.1. The demographic and socioeconomic variables were described in proportions (categorical variables) and in medians and interquartile range (continuous variables). The Kruskal-Wallis test was used to verify the differences between the positions, and the non-parametric test of multiple comparisons. The answers on the knowledge of breastfeeding and complementary feeding were coded into correct and incorrect[11]. To compare the proportion of correct answers according to the positions, Person's chi-square test was used. The level of significance was established at 5%. To perform data analysis, we used the package R for Windows, version 2.15.1.

This study was approved by the Research Ethics Committee (REC) of Universidade Federal de Uberlândia (protocol CEP/UFU 552/10).

Results

Participants were 304 employees, distributed in 15 daycares in the municipality. Among the 16 daycares selected, one did not participate due to other projects under development in the period of data collection.

Educators were the youngest professionals (lowest median age) and most employees were married. As for education, 153 (51%) employees had complete higher education, and this percentage is mainly represented by the positions of principal/educational coordinator (n=30; 100%) and teacher (n=42; 98%). The percentage of principals, teachers and educators with post-graduate degrees (mainly *lato sensu*) was of 53% (n=16), 33% (n=14) and 8% (n=13), respectively. Among the GSAs, most (n=53; 7%) completed high school (Table 1). Income was higher among principals/educational coordinators, compared to other positions, with difference also between teachers and the other positions (Table 1). The time of experience in the day care center, until the time of data collection, ranged from 3 to 72 months, being this interval greater among the GSAs — from 9 to 96 months (data not shown).

The variable "position" showed collinearity with age, income, and education (data not shown). Thus, we assessed knowledge about infant feeding according to the position, without adjusting for other variables. Regarding knowledge about breastfeeding, the answers of the employees were homogeneous, except for the influence of the pacifier. A higher percentage of correct answers were verified in definition and duration of EBF. The belief on weak breast milk still exists, but it was reported by a small number of employees. Regarding questions on complementary feeding, the percentage of accuracy was lower when compared to breastfeeding, especially for the age of introduction of sugar (Table 2).

It was questioned whether the employees received some kind of information on infant feeding when they started their current role. The affirmative response to this question was higher between GSAs (28%) compared with educators/teachers (12%) and principals/educational coordinators (17%) (p=0.002). When asked about the influence of their role in feeding children, 77% (n=234) of the employees believed in that influence, with percentage similarity among the three categories (82, 80, 75% for GSAs, principals/educational coordinators, and teachers/educators, respectively). The main reasons for the affirmation of this influence were: carefully preparing meals, performing activities that stimulate consumption, guiding the students during meals, and supervision and evaluation of the quality of food offered to children. Among the employees who reported not interfering in feeding, the main reasons were: not participating directly

in the preparation of meals served and preparation of the menu by a nutritionist from the City Hall (data not shown).

Among the principals/educational coordinators, 49% (n=14) reported having received some information on infant feeding during the undergraduate course more broadly, such as the importance of nutrition during childhood.

In all day care centers, questions are asked about current feeding of the child at the time of registration, being the most reported: the presence of allergy or food intolerance (71%); specific dietary restrictions (21%); other aspects, such as diagnosis of diabetes mellitus, pediatric recommendations, and details of children's behavior during the meal, and food preferences (8%). We observed little focus on feeding behavior, the child's relationship with food, and their interaction with the family during meals.

Discussion

The concern with training professionals who work in early childhood education is recent, as this was considered the first stage of basic education only 2 decades ago. In the studies, all teachers, principals, and educational coordinators had higher education diplomas, according to the National Education Bases and Guidelines Law (Lei de Diretrizes e Bases – LDB)[11]. However, only 49% of principals/educational coordinators reported having received basic information on child feeding during the undergraduate course. In general, teachers do not show in their resume specific training on infant feeding, and base their practices in everyday experiences[16,17]. These professionals believe that childcare does not require specific training and skills[18]. A survey with employees of day care centers revealed that one of the main difficulties was the offering of food to children. The authors concluded that the training of these professionals focuses on intellectual knowledge and information on eating habits are not explored in undergraduate courses[19].

Among the educators, 50% graduated from high school, and this percentage is higher when compared to studies conducted between 2003 and 2007[17-19]. A small percentage of employees reported having received information on child feeding after starting their current position. This percentage was higher among GSAs, because they participated in courses on food handling when they started their positions. The time of experience of the employees was very variable and this aspect was not related to their knowledge. Shimabukuro *et al*[13] found that the percentage of errors was higher among educators who had more experience in the day care centers, especially because they acted according to rooted and mistaken habits, customs, and beliefs. Currently, the Ministry of Health and the

Table 1 - Demographic and socioeconomic characteristics of employees of daycare centers, according to the position held. Uberlândia, state of Minas Gerais, Brazil, 2011

	General (n=304)	GSA (n=76)	Educator (n=155)	Teacher (n=43)	Principal/educational coordinator (n=30)
Age (years)*	40 (31–46)	44[a] (39–49)	35[b] (28–43)	42[bc] (30–47)	43[ac] (37–50)
Income (R$)*	818 (750–1059)	670[a] (548–750)	818[b] (780–960)	1200[c] (1055–1700)	2500[d] (1750–2930)
Education [n (%)]*					
Elementary School	19 (6)	19 (25)[a]	0 (0)[a]	0 (0)[a]	0 (0)[a]
High School	98 (32)	53 (70)[b]	45 (29)[b]	0 (0)[a]	0 (0)[a]
Higher Education	33 (11)	1 (1)[c]	31 (20)[b]	1 (2)[a]	0 (0)[a]
Incomplete Higher education	153 (51)	3 (4)[c]	78 (51)[c]	42 (98)[b]	30 (100)[b]
Marital status [n (%)]					
Married	181 (60)	52 (68)	85 (55)	25 (58)	19 (63)
Single	83 (27)	8 (11)	58 (37)	13 (30)	4 (13)
Divorced	31 (10)	11 (14)	11 (7)	4 (9)	5 (17)
Widower	9 (3)	5 (7)	1 (1)	1 (2)	2 (7)

*Variables expressed as median and interquartile range; different letters (a,b,c,d) indicate statistically significant differences for multiple comparisons; GSA: General Services Assistant

Ministry of Education recommend that all professionals involved in the education of children learn about food, which may have a pedagogical function[20].

School activities are scheduled after the organization of mealtimes, being the supply of food a priority, especially in public institutions. However, despite the professionals' worry about the amount of food consumed by children, they do not identify its influence on the formation of dietary habits[21]. In this study, a high percentage of employees reported to influence the quality of food served, even if not directly involved in the preparation. The principals reported watching the preparations and the acceptance of children, proposing changes when necessary.

Regarding knowledge about breastfeeding and complementary feeding, it was found that the percentage of correct answers was higher for the first theme. Some beliefs and customs, such as "weak milk" and "supply of cow's milk instead of formula for children under 6 months" still remain, although questioning the quality of breast milk was reported by a small percentage of employees. The supply of expressed milk in suitable container had low percentage of correct answers, perhaps due to the fact that the employees did not

Table 2 - Knowledge about breastfeeding and complementary feeding of employees of nurseries, according to the position held. Uberlândia, state of Minas Gerais, 2011

Themes addressed to assess the knowledge of employees*	General (n=304)	GSA (n=76)	Educator/teacher (n=198)	Principal/educational coordinator (n=30)
	Number (percentage of correct answers)			
Definition of EBF** (Breast milk only)	296 (97)	72 (94)	194 (98)	30 (100)
Duration of EBF (Six months)	199 (65)	55 (72)	121 (61)	23 (76)
Minimum recommended breastfeeding (Minimum of 2 years)	105 (34)	21 (28)	77 (39)	7 (23)
Negative influence of pacifier on breastfeeding*** (Yes)	157 (51)	55 (72)	85 (42)	17 (56)
Negative influence of baby bottle in breastfeeding (Yes)	241 (79)	62 (81)	152 (76)	27 (90)
Existence of weak milk (No)	275 (91)	62 (82)	148 (75)	24 (80)
Offer of cow's milk for children younger than 6 months (Not recommended)	208 (68)	47 (62)	142 (72)	19 (63)
Ideal container to provide expressed breast milk (mother's absence) (Specific cup or spoon)	120 (39)	34 (45)	73 (37)	13 (43)
Recommended age for introducing food (From 6 months)	187 (61)	41 (54)	130 (66)	16 (53)
Ideal age for the introduction of meat (From 6 months)	170 (56)	40 (53)	118 (60)	12 (40)
Ideal age for the introduction of sugar (From 2 years old)	50 (16)	11 (14)	32 (16)	7 (23)

*Correct answers are listed in parenthesis; **EBF (exclusive breastfeeding): refers to the supply only of milk straight from the breast or expressed, with no other liquids or solids, except drops or syrups consisting of vitamins, oral rehydration salts, mineral supplements, or medicines (Ministry of Health, 2009)[15]; ***chi-square, p=0.001 (GSAs versus teachers/educators and principals/coordinators)
GSA: General Services Assistant

have contact with that instrument at daycare. According to Clark *et al*[22], only 21% of employees knew how to properly store expressed breast milk and 38% reported believing that there were no differences in benefits between breast milk and formulas. In this study, the employees cited baby bottles most frequently as a negative influence to maintain breastfeeding. This difference may possibly be explained by the marked differences between the way of sucking the breast and the bottle and because the latter is used to offer formulas and other foods (used as breast milk substitutes). The pacifier, tough, is not related to feeding. Both hinder breastfeeding by harming motor-oral development, with negative consequences in chewing, swallowing, breathing, and articulation of speech sounds[15].

The percentage of correct answers for the proper introduction of food was 60%, and less than 20% knew the recommended aged for the introduction of sugar. This is worrying, because sugar should not be consumed before the age of 2 years old[15], as they child already prefers the sweet flavor[23] and also because it is a factor of exposure to dental decay.

The results of this study show that professionals answered correctly the definition of EBF, but the percentage of correct responses decreased regarding the duration and the correct duration of breastfeeding. One possible explanation for the greater success of EBF is the fact that this information is exposed on posters, radio/TV programs, and due to the guidance of professionals in health care, especially during the World Breastfeeding Week, held in Brazil since 1992. The lowest percentage of correct answers for the duration of breastfeeding could be explained by the small number of babies who are still breastfed after enrollment in nursery schools. Barbosa *et al*[24] found that most public day care centers had no structure to encourage breastfeeding and professionals were not updated with the recent recommendations on breastfeeding and complementary feeding. Authors still hypothesize that many mothers already wean the child at the end of their maternity leave to prepare him or her for the food offered in the day care center[24,25]. Added to these factors, medical advice on early introduction of foods[24].

Regarding the lowest percentage of correct answers on complementary feeding, specifically the introduction of food, few actions have been developed by health agencies. Actions to encourage healthy eating, appropriate for children under 2 years, focus on preparing the food guide for children under 2 years[26], at the National Strategy on Healthy Complementary Feeding[27] and, more recently, within the Breastfeeding Network and Breastfeed Brazil (Rede Amamenta and Alimenta Brasil)[28].

Limitations of this study relate to the research instrument. The first limitation relates to the content, which included few questions about complementary feeding and did not address knowledge on consistency and texture of offered foods, interval between meals, and the offer of processed foods. This information should have been included, as such practices are possible in the school environment and are under the governance of the employees, unlike breastfeeding, which depends on the mother. The second limitation is regarding the age considered for introducing cow's milk (6 months). This study was conducted in 2011 and adopted the recommendations of the Ministry of Health[15], published in 2009. However, the Brazilian Society of Pediatrics[29] currently recommends the introduction of cow's milk after 12 months.

It could be noticed that the topics of breastfeeding showed a higher percentage of correct responses by employees, compared to complementary feeding. However, it is precisely in the quality and quantity of food to be offered that the day care centers may exert greater influence, because breastfeeding is the mother's choice. The professional training of childcare staff — encompassing all positions — is an action that should be encouraged, as they influence children's eating habits and have the role of educating the child and his or her parents.

Acknowledgements

We are thankful to the Undergraduate Pro-rectory (via Board of Education - Diren) of Universidade Federal de Uberlândia (PROGRAD-UFU), which, by the Undergraduate Scholarship Program (resolution n. 08/2010 – notice n. 5/2010), granted a scholarship to the undergraduate student Joelânia Pires de Oliveira Souza, contemplated in the subprogram "Student Improvement," which houses projects that complement the student's academic training through the articulation between teaching, research, and extension.

References

1. Fewtrell MS, Morgan JB, Duggan C, Gunnlaugsson G, Hibberd PL, Lucas A *et al.* Optimal duration of exclusive breastfeeding: what is the evidence to support current recommendations? Am J Clin Nutr 2007;85:635S-8.
2. Monasta L, Batty GD, Macaluso A, Ronfani L, Lutje V, Bavcar A *et al*. Interventions for the prevention of overweight and obesity in preschool children: a systematic review of randomized controlled trials. Obes Rev 2011;12:e107-18.
3. Brasil - Ministério da Saúde. Centro Brasileiro de Análise e Planejamento. PNDS 2006 - Relatório Final. Brasília: Ministério da Saúde; 2008.
4. Brasil - Ministério da Saúde. Secretaria de Atenção à Saúde - Departamento de Ações Programáticas e Estratégicas. II Pesquisa de prevalência de aleitamento materno nas capitais brasileiras e Distrito Federal. Brasília: Ministério da Saúde; 2009.
5. Parada CM, Carvalhaes MA, Jamas MT. Complementary feeding practices to children during their first year of life. Rev Lat Am Enfermagem 2007;15:282-9.
6. Portella MB, Morais TB, Morais MB. Excess sodium and insufficient iron content in complementary foods. J Pediatr (Rio J) 2010;86:303-10.
7. Tibbs T, Haire-Joshu D, Schechtman KB, Brownson RC, Nanney MS, Houston C *et al.* The relationship between parental modeling, eating patterns, and dietary intake among African-American parents. J Am Diet Assoc 2001;101:535-41.
8. Davanço GM, Taddei JA, Gaglianone CP. Knowledge, attiudes and practices of teachers of basic cycle, exposed and non exposed to a Nutrition Education Course. Rev Nutr 2004;17:177-84.
9. Brasil - Ministério da Saúde. Secretaria de Vigilância em Saúde - Departamento de Análise de Situação de Saúde. Plano de ações estratégicas para o enfrentamento das doenças crônicas não transmissíveis (DCNT) no Brasil: 2011-2022. Brasília: Ministério da Saúde, 2011.
10. Sanches EC. Creche: realidade e ambiguidades. 2nd ed. Petrópolis: Vozes; 2004.
11. Brasil - Presidência da República. Lei nº 9.394, de 20 de Dezembro de 1996. Estabelece as diretrizes e bases da educação nacional. Brasília: Diário Oficial da União; 1996.
12. Brasil - Ministério da Educação. Secretaria de Educação Básica. Política Nacional de Educação Infantil: pelo direito das crianças de zero a seis anos à educação. Brasília: MEC/SEB; 2006.
13. Shimabukuro EE, Oliveira MN, Taddei JA. Knowledge of educators from day care centers about infant feeding. Rev Paul Pediatr 2008;26:231-7.
14. Campos MM, Füllgraf J, Wiggers V. Brazilian early childhood education quality: some research results. Cad Pesqui 2006;36:87-128.
15. Brasil - Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Saúde da criança: nutrição infantil - aleitamento materno e alimentação complementar. Brasília: Ministério da Saúde; 2009.
16. Tardif M. Saberes docentes e formação profissional. Petrópolis: Vozes; 2002.
17. Martins J, Veríssimo ML. Experience and practices of municipal day care workers regarding taking care of children with acute respiratory infection. Interface – Comunic, Saude, Educ 2006;10:487-504.
18. Veríssimo ML, Fonseca RM. Child care according to day care center workers. Rev Lat Am Enfermagem 2003;11:28-35.
19. Bógus CM, Nogueira-Martins MC, Moraes DE, Taddei JA. How mothers and educators perceive the care provided by daycare centers. Rev Nutr 2007;20:499-514.
20. Brasil - Ministério da Saúde; Ministério da Educação. Portaria Interministerial nº 1.010, de 8 de Maio de 2006. Institui as diretrizes para a Promoção da Alimentação Saudável nas Escolas de educação infantil, fundamental e nível médio das redes públicas e privadas, em âmbito nacional. Brasília: Diário Oficial da União; 2006.
21. Goulart RM, Banduk ML, Taddei JA. A review of nutrition actions and the role of dieticians in daycares. Rev Nutr 2010;23:655-65.
22. Clark A, Anderson J, Adams E, Baker S. Assessing the knowledge, attitudes, behaviors and training needs related to infant feeding, specifically breastfeeding, of child care providers. Matern Child Health J 2008;12:128-35.
23. Birch LL. Development of food acceptance patterns in the first years of life. Proc Nutr Soc 1998;57:617-24.
24. Barbosa MB, Palma D, Domene SM, Taddei JA, Lopez FA. Risk factors associated to early weaning and to weaning period of infants enrolled in daycare centers. Rev Paul Pediatr 2009;27:272-81.
25. Victora CG. Fatores de risco nas IRA baixas. In: Benguigui Y, Antuñano FJ, Schmunis G, Yunes J, editors. Infecções respiratórias em crianças. Washington: OPAS; 1998. p. 43-61.
26. Brasil - Ministério da Saúde. Secretaria de Política de Saúde. Dez passos para uma alimentação saudável: guia alimentar para crianças menores de dois anos. Brasília: Ministério da Saúde; 2002.
27. Brasil - Ministério da Saúde - Rede Internacional em Defesa do Direito de Amamentar Brasil. ENPACS: Estratégia Nacional Para Alimentação Complementar Saudável: caderno do Tutor. Brasília: Ministério da Saúde; 2010.
28. Brasil - Ministério da Saúde - Portal da Saúde [homepage on the Internet]. Estratégia Amamenta e Alimenta Brasil [cited 2013 Jan 26]. Available from: http://dab.saude.gov.br/portaldab/amamenta.php
29. Sociedade Brasileira de Pediatria - Departamento de Nutrologia. Manual de orientação para a alimentação do lactente, do pré-escolar, do escolar, do adolescente e na escola. 3rd ed. Rio de Janeiro: SBP; 2012.