

BREASTFEEDING KNOWLEDGE AND PRACTICE OF HEALTH PROFESSIONALS IN PUBLIC HEALTH CARE SERVICES

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This study evaluated breastfeeding knowledge and practice of professionals who care for infants at health care services in a city in the interior of São Paulo, Brazil. This epidemiological study was carried out with a population of 89 nurses and physicians. Their answers to a structured questionnaire were analyzed in total and by place of work through the test for difference between proportions (Chi-square) with the level of significance at $p < 0.05$. Data analysis was performed according to the Ministry of Health recommendations. The significant differences found for knowledge and practice, according to place of work, were restricted to certain aspects. Results of average scores were slightly better for professionals from the basic care units. Regular and poor performance were found in different studied aspects regardless of place of work, which suggest that potential educational interventions in this subject should include professionals at all levels of health care.

DESCRIPTORS: breast feeding; education, nursing; inservice training

CONOCIMIENTOS Y PRÁCTICAS DE PROFESIONALES DE LA SALUD SOBRE AMAMANTAMIENTO MATERNO EN SERVICIOS PÚBLICOS DE SALUD

Se tuvo por objetivo evaluar los conocimientos y las prácticas sobre amamantamiento materno que tienen los profesionales que atienden lactantes en unidades de atención básica, o maternidades públicas, de un municipio del interior del estado de Sao Paulo, en Brasil. Es estudio epidemiológico, siendo la población compuesta por 89 enfermeros y médicos. Sus respuestas a un cuestionario estructurado fueron analizadas en su totalidad y según el local de trabajo, aplicándose la prueba de diferencia de proporciones (chi-cuadrado), considerándose $p < 0,05$ como nivel crítico. Como parámetros de aciertos fueron consideradas las recomendaciones del Ministerio de la Salud. Las diferencias significativas para conocimientos y prácticas, según el local de trabajo, fueron restringidas a algunos aspectos, con resultados discretamente mejores de los puntajes promedios de aciertos de los profesionales de las unidades de atención básica. Independientemente del local de trabajo, se verificó desempeño regular y malo en diferentes aspectos estudiados, indicando que posibles intervenciones para la capacitación en esa temática deberán incluir profesionales de todos los niveles de atención a la salud.

DESCRIPTORES: lactancia materna; educación en enfermería; capacitación en servicio

CONHECIMENTOS E PRÁTICAS DE PROFISSIONAIS DE SAÚDE SOBRE ALEITAMENTO MATERNO EM SERVIÇOS PÚBLICOS DE SAÚDE

Objetivou-se avaliar conhecimentos e práticas sobre aleitamento materno de profissionais que atendem lactentes em unidades de atenção básica, ou maternidades públicas, de município do interior paulista, Brasil. É estudo epidemiológico, sendo a população composta por 89 enfermeiros e médicos. Suas respostas a um questionário estruturado foram analisadas no total e segundo o local de trabalho, aplicando-se o teste de diferença de proporções (qui-quadrado), considerando-se $p < 0,05$ como nível crítico. Como parâmetros de acertos foram consideradas as recomendações do Ministério da Saúde. As diferenças significativas para conhecimentos e práticas, segundo o local de trabalho, foram restritas a alguns aspectos, com resultados discretamente melhores dos escores médios de acertos dos profissionais das unidades de atenção básica. Independente do local de trabalho, verificou-se desempenho regular e ruim em diferentes aspectos estudados, indicando que possíveis intervenções para a capacitação nessa temática deverão incluir profissionais de todos os níveis de atenção à saúde.

DESCRITORES: aleitamento materno; educação em enfermagem; capacitação em serviço

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INTRODUCTION

Breastfeeding is essential to infants' health and quality of life, presenting advantages to infants and the other subjects involved with this practice⁽¹⁾.

Despite the current tendency to increase the period of breastfeeding, in Brazil this practice is far from what has been recommended: exclusive breastfeeding (EB) in children's first six months of life and complemented by other foods until two years of age or more⁽¹⁾. For this reason, early weaning is a relevant concern for public health and has been the focus of technical and political interventions.

Scientific literature points to several factors that can negatively interfere with breastfeeding practice, among them: mother's lack of experience and belief that breast milk is weak; interferences with the puerperal breast; breastfeeding becoming a burden due to changes in women's daily life; mismatch between the mother's and infant's needs; external interferences of family members and the mothers' professional occupation⁽²⁾.

On the other hand, receiving effective, professional or lay support during breastfeeding is associated with its success. Several international and Brazilian studies have shown this positive influence⁽³⁻⁵⁾. A study carried out in Botucatu, SP, Brazil between 1995 and 2004 pointed to this relationship. It showed that the best results in the average duration of EB (increase of 82%) and breastfeeding (increase of 50.9%) in the period were related to the creation of the Human Milk Bank, to the implementation of Family Health Units and the increased number of health professionals involved with breastfeeding in the city⁽⁶⁾.

We proposed this study considering the importance of breastfeeding, its still limited duration and the influence of health professionals in its prevalence. The study's general objective was to evaluate the knowledge and practice related to breastfeeding for professionals who care for infants in the public health service in Botucatu, in the interior of São Paulo, Brazil. We also sought to identify potential differences, according to professionals' places of work: hospital facility or primary care service, aiming at developing educational interventions.

METHOD

This descriptive study in the field of health education was carried out in Botucatu, a medium size

city located in the Mid-south region of the state of São Paulo, Brazil with approximately 120,000 inhabitants.

Botucatu has 16 primary care units, eight are traditional Basic Care Units (BCU) and eight are Family Health Units (FHU), and two maternal-infant hospitals: a teaching hospital, which is a tertiary care facility (TCF) and a philanthropic hospital, which is a secondary care facility (SCF).

All nurses and physicians who cared for infants in these services were considered eligible for this study. The only exclusion criterion was professionals working in more than one unit (12 cases), which would impede the intended comparative evaluation: hospital service versus primary care service. Five professionals did not participate in the study because they were either on vacation or on leave at the time of data collection. Thus, a population of 89 participants was included: 31 from the TLH, nine from the SLH, 29 from the BCUs and 20 from the FHUs totaling 55 nurses and 34 physicians.

Data collection was carried out in the second semester of 2007 through the application of a structured questionnaire with open and closed questions, which was developed based on a previously validated instrument⁽⁷⁾, adapted to meet the needs of this research and submitted to three experts in the area: two nurses and one nutritionist. These experts developed the answer sheet according to the Ministry of Health recommendations⁽⁸⁾.

To ensure anonymity during data collection, questionnaires were sent to the head nurses in the basic care units with no identification. After each professional filled out his/her own questionnaire, they put it in a sealed white envelope and returned it to the respective nurses. The researcher handed on the questionnaires to the participant professionals in the hospital facilities and they also returned questionnaires in a sealed white envelope to the researcher herself.

Variables related to the characterization of participants were: gender (male/female); age (years); place of work (BHU, FHU, SLH, TLH); time working in their respective facilities; (years) profession (nurse/physician); time since graduation (years).

To analyze knowledge about breastfeeding, the following were investigated: knowledge about the Ten Steps to Success in Breastfeeding (yes/no, mention three steps); ideal duration of breastfeeding and EB in months (4/6/12/24 or more); agreement with statements related to: breast milk composition

and production, proper latch on, breast traumas, duration and frequency of feeding, discontinuing breastfeeding, breast hygiene and infant formulas (yes/no/do not know).

Practices related to breastfeeding were studied in the group of professionals considering: the frequency in which professionals advise against the use of pacifiers and advise the maintenance of breastfeeding when mothers have a job (most of the times/once in a while/never or very rarely). In the hospital context the following were investigated: the frequency professionals, in the delivery room, place infants to nurse; whether professionals check the newborn's sucking capacity with glucose serum and indicate the use of formula for healthy babies. Finally, the following were investigated in professionals working in basic care units: the frequency with which they address the advantages of breastfeeding; whether they observe feedings and provide orientation of how to care for breast traumas (most of the times/once in a while/never or very rarely).

One of the authors entered data, the consistency of which was tested based on associated questions. First, data analysis considered the frequency of answers of all the professionals. Scoring above 80% was considered a good performance, average between 50 and 79.9% and poor below 50%.

Afterwards, the analysis was stratified by place of work and the test for difference between proportions was applied (Chi-square) with level of significance at 0.05. Then, scores were checked and each correct answer scored 2.5. In total, 40 questions were considered: three addressing the Ten Steps to Breastfeeding Success, 32 addressing variables about knowledge and five about variables about practice, totaling 100 points.

The research project was submitted to and approved by the local Research Ethics Committee (Of. 307/2006-CEP) according to recommendations for research involving human beings. The studied participants signed free and informed consent agreements in order to participate in the study.

RESULTS

A brief characterization of the studied subjects revealed that the majority were nurses (61.8%), female (82%), between 25 and 35 years of

age (44.9%), with up to 10 years since graduation (55.1%) and up to five years working in their current service (43.8%).

A little more than a third (34.8%) of the studied population knew three or more steps for breastfeeding success and the most cited step was: provide no artificial nipples to breastfeeding infants (Step 9) and the least mentioned: show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants (Step 5).

In regard to other studied variables addressing knowledge, there were generally good results in relation to the composition of breast milk and reasons to discontinue breastfeeding. For the remaining variables, one or more questions presented results that can be considered good, with the exception of proper latch on, whose results were below 80% and therefore were classified as average or poor. The majority of the interviewees correctly indicated the duration of breastfeeding and EB: 92.1% and 83.1% respectively (Table 1).

Table 1 – Expected answers and frequency of correct answers concerning breastfeeding knowledge of health professionals who care for infants. Botucatu, 2007

Variables of knowledge	Expected answer	Correct answers	
		Nº	%
Duration/frequency of feedings			
Exhausting breast before changing	Yes	79	88.7
Preterm infants should breastfeed every two hours	No	29	32.6
Full term infants should breastfeed every three hours	No	46	51.7
Limiting feeding to 15-20 minutes	No	53	59.6
Low milk production			
Offering other foods to infant	Yes	81	91
Offering other liquids	Yes	72	80.9
Not milking in excess	Yes	47	52.8
Discontinue feeding during the night	Yes	50	56.2
Short feedings	Yes	48	53.9
Maternal food deficit	No	55	61.8
Proper latch on			
Hand on the infant's chin favors searching reflex	No	17	19.1
The baby's chin touches the breast	Yes	67	75.3
The baby's cheeks are dimpled	No	43	48.3
More nipple is left above the baby's mouth	Yes	29	32.6

Continue...

Table 1 – Continuation

Variables of knowledge	Expected answer	Correct answers	
		Nº	%
Composition of breast milk			
Water is sufficient up to the 6th month	Yes	87	92.3
The milk is fattier at the end of the feeding	Yes	78	87.6
Foremilk and hind milk are the same	No	83	95.5
Reasons to interrupt breastfeeding			
Active herpes lesion on breast	Yes	83	93.3
Mothers with HIV	Yes	88	98.9
Mother works and there is no daycare near	No	89	100
Breast hygiene			
Daily bath/daily change of bra	Yes	74	83.1
Washing breasts with soap and water before breastfeeding	No	64	71.9
Using absorbent pad to keep breasts dry	No	69	77.5
Reasons for immediate supply of formula			
Slight slowdown in weight gain	No	66	74.2
Absence of letdown reflex on the 3rd day postpartum	No	66	74.2
Mother will return to work in the 3rd month postpartum	No	73	82
Child shows signs of being hungry	No	52	58.4
Care for breast trauma			
Milking and offering milk in a bottle	No	79	88.8
Using ointments before and after feedings	No	85	95.5
Discontinuing breastfeeding	No	84	94.4
Ideal duration of breastfeeding			
EB	6 months	82	92.1
Breastfeeding	24 months or more	74	83.1

In regard to practices related to breastfeeding, good results were observed among the professionals in the question that advises against pacifiers (85.4%) and among those who work in basic care units on the question about their orientation regarding the advantages of breastfeeding (98%). Average results were found in another question asked

to all professionals: advise the maintenance of EB when the mother has a job (77.5%) and in all questions asked to professionals working in the hospital facilities (Table 2).

Table 2 – Expected answers and frequency of correct answers related to breastfeeding practices of professionals who care for infants according to the level of health care: hospital (n=40) and primary care (n=49). Botucatu, SP, Brazil 2007

Level of care/variables of practices	Expected answer	Correct answers	
		Nº	%
Primary care and hospital			
Advise against the use of pacifiers	Most of the times	76	85.4
Advise EB when mother works	Most of the times	69	77.5
Hospital Care			
Placing the infant to nurse in the delivery room	Most of the times	20	50
Counter-indicating formula when the infant is healthy	Most of the times	29	72.5
Testing suction capacity with glucose serum	Never or rarely	21	52.5
Basic care			
Orienting about the advantages of breastfeeding	Most of the times	48	98
Observing feedings	Most of the times	29	59.2
Orienting how to care for breast traumas	Most of the times	35	71.4

A statistically significant difference was found in the health professionals' knowledge regarding breastfeeding according to place of work on the issue of the frequency of feedings, only on the question that proposed that full term newborns should breastfeed every three hours. There was also significant difference when factors related to low milk production were considered and the most significant reason reported to immediately offer formulas was the absence of the letdown reflex on the 3rd day postpartum. Professionals from the hospital facilities presented lower scores in all these situations (Table 3).

Table 3 – Frequency of correct answers to questions related to breastfeeding knowledge of professionals who care for infants according to the level of health care: hospital (n=40) and basic care (n=49). Botucatu, SP, Brazil 2007

Variables of knowledge	Score by level of care				x2 ^{*/**}	p
	Hospital		Basic care			
	Nº	%	Nº	%		
Duration/frequency of feedings						
Exhausting breast before changing	35	87.5	44	89.8	0	0.9969**
Preterm infants should breastfeed every two hours	9	22.5	20	40.8	3.36	0.0666
Full term infants should breastfeed every three hours	16	40	30	61.2	3.97	0.0462***
Limiting feedings to 15-20 minutes	23	57.5	30	61.2	0.13	0.7217
Low breast milk production						
Offering other foods to baby	35	87.5	46	93.9	0.45	0.5003**
Offering other liquids	27	67.5	45	91.8	6.94	0.0084**/**
Not milking in excess	17	42.5	29	59.2	2.45	0.1171
Interrupting night feedings	24	60	26	53.1	0.43	0.5116
Short feedings	23	57.5	25	51	0.37	0.5418
Maternal food deficit	23	57.5	32	65.3	0.57	0.4508
Proper latch on						
Hand on the infant's chin favors searching reflex	15	37.5	28	57.1	3.40	0.0650
The baby's chin touches the breast	30	75	37	75.5	0	0.9557
The baby's cheeks are dimpled	9	22.5	8	16.3	0.54	0.4611
More nipple is left above the baby's mouth	13	32.5	16	32.6	0	0.9877
Composition of breast milk						
Water is sufficient up to the 6th month	39	97.5	48	97.9	0.33	0.5663**
Milk is fattier at the end of the feeding	32	80	46	93.9	2.74	0.0979**
Foremilk and hind milk are the same	37	92.5	49	100	1.85	0.1738**
Reasons to discontinue breastfeeding						
Active herpes lesion on breast	37	92.5	46	93.9	0.03	0.8672**
Mothers with HIV	39	97.5	49	100	0.03	0.9185**
Mother works and there is no daycare near	40	100	49	100	-	-
Breast hygiene						
Daily bath/daily change of bra	31	77.5	43	87.7	1.65	0.1985
Washing breasts with soap and water before breastfeeding	26	65	38	77.5	1.72	0.1900
Using absorbent pad to keep breasts dry	33	82.5	36	73.5	1.03	0.3099
Reasons for immediate supply of formula						
Slight slowdown in weight gain	27	67.5	39	79.6	1.68	0.1948
Absence of letdown reflex on the 3rd day postpartum	18	45	34	69.4	5.39	0.0202***
Mother will return to work in the 3rd month postpartum	32	80	30	61.2	3.67	0.0552
Child shows signs of being hungry	35	87.5	38	77.5	0.88	0.3480**
Care for breast trauma						
Milking and offering milk in a bottle	40	100	45	91.8	1.78	0.1819**
Using ointments before and after feedings	34	85	45	91.8	0.46	0.4974**
Discontinuing breastfeeding	37	92.5	47	95.9	0.05	0.8150**
Ideal duration of breastfeeding						
EB	35	87.5	46	93.9	0.10	0.7524**
Breastfeeding	32	80	42	85.7	0.51	0.4737

* Chi-square

** Yates' correction

***statistically significant differences (p<0.05)

The analysis of practices in relation to breastfeeding by place of work shows that there

was significant difference only in relation to advising against the use of pacifiers and fewer interventions in hospital care (Table 4).

Table 4 – Frequency of correct answers related to breastfeeding practices of professionals who care for infants, according to the level of care: hospital (n=40) and basic care (n=49). Botucatu, SP, Brazil 2007

Variables of practice	Scores by level of care				x2**	p
	Hospital		Primary care			
	N	%	N	%		
Advising against the use of pacifiers	30	75	46	93.9	4.87	0.0273**/***
Advising breastfeeding when mother has a job	29	72.5	40	81.6	1.05	0.3045
Placing the baby to nurse in the delivering room	20	50	-	-	-	-
Counter-indicating formula if infant is healthy	29	72.5	-	-	-	-
Do not test suction capacity with glucose serum	21	52.5	-	-	-	-
Orienting about breastfeeding advantages	-	-	48	97.9	-	-
Observing feedings	-	-	29	59.2	-	-
Orienting how to care for breast traumas	-	-	35	71.4	-	-

*Chi-square

** Yates' correction

*** Statistically significant difference (p<0.05)

The minimum and maximum scores varied little. Considering the average scores, the basic care units presented a slightly better result than hospital facilities but with no statistically significant difference. The average scores revealed a regular performance in both cases, (Table 5).

Table 5 – Average values, minimum and maximum scores of questions related to breastfeeding knowledge and practice of professionals who care for infants, according to level of care: hospital (n=40) and basic care (n=49). Botucatu, SP, Brazil 2007

Level of care	Scores			p*
	Minimum	Maximum	Average	
Hospital	50	97.5	70.1 (±10.6)	
Basic care	47.5	97.5	74 (±11.4)	0.0942

*Student's t-test

DISCUSSION

The study included professionals working in public health services, both in hospitals and basic care units in Botucatu, SP, Brazil, and allowed us to obtain a broad perspective of their knowledge and practice in breastfeeding. Adherence of professionals was high since only 4.7% of losses occurred due to the absence of professionals who were on vacation or leave. However, biases due to questionnaire's self-application cannot be discarded. We highlight that the use of a detailed instrument that was previously validated was important because the obtained results can help in the planning of future educational actions in the city.

In regard to knowledge, we verified that almost half of the professionals were not able to report any of the Ten Step to Breastfeeding Success. Considering that this subject is familiar to workers from hospital facilities⁽¹⁾, we can affirm that the percentage of deficient knowledge was high. In a previous study, carried out in the same city, approximately 70% of professionals from maternity care facilities reported knowledge of the Ten Steps⁽⁹⁾.

Step 9 was the most cited and refers to the improper use of pacifiers and artificial nipples as they may lead to less frequent feedings, diminished stimulation and withdrawal of breast milk, leading to lower milk production and consequent weaning⁽¹⁰⁾.

The physiology of lactation shows, among other aspects, the importance of periodic sucking for milk production. Therefore, in the event mother and child should be temporarily separated, actions should be implemented to maintain lactation, though Step 5, which addresses this concern, was seldom reported.

Without question, the importance of adequate knowledge about the composition of breast milk and indications for discontinuing breastfeeding in the context of proper breastfeeding clinical management were obtained in relation to these aspects. Addressing the composition of breast milk included a question about whether breastfeeding provides sufficient hydration until the sixth month of the life of babies in EB and the professionals' performance regarding this question was good. A study carried out in São Paulo, Brazil addressing the frequency and determinants of breastfeeding in children up to four months of age showed a high prevalence of predominant breastfeeding, indicating that offering non-nutritious liquids, including water, is a widely disseminated practice in the state⁽⁴⁾.

Equally important is the knowledge concerning proper latch on, and in this case the situation is preoccupying because health professionals are supposed to facilitate mothers' learning, since self-learning or learning mediated by lay people can be either insufficient or improper to enable breastfeeding success. Another preoccupying aspect refers to the duration/frequency of feedings, since agreement with rigid schedules was evident.

Regarding questions related to low levels of milk production, the professionals' performance was good when questions addressed the supply of other liquids and foods. However, their performance was regular when questions addressed less important aspects such as those related to milking in excess, feeding babies during the night or short feedings and maternal nutrition. These aspects are relevant because according to the Ministry of Health, among the main causes of hypogalactia are the offering of other foods and drinks, short, hurried and non-frequent feedings and discontinuing feedings at night⁽⁸⁾.

A slight slowdown in weight gain is not a reason to immediately offer formula, since this can sometimes be observed in healthy breastfeeding babies⁽¹¹⁾, though the performance of professionals was only regular on this question.

In the analysis of knowledge about hygiene and breast trauma, the results were good and regular. The breastfeeding clinical management requires proper breast hygiene to avoid complications such as breast trauma and mastitis. In a study carried out in Botucatu, SP, Brazil, the report about difficulties with breastfeeding was associated with the discontinuing of EB in infants younger than four months⁽¹²⁾.

Despite the high frequency of correct answers to questions about the duration of breastfeeding and EB, the obtained results were considered unsatisfactory because of the relevance of this knowledge to the practice and especially because official and scientific recommendations have been established and widely and continually disseminated for several years⁽¹⁾.

The analysis of practices related to breastfeeding revealed good performance of professionals in the question about advising against the use of pacifiers. Even though government initiatives control, discourage and even prohibit publicity and use of rubber nipples in maternities, its use is still very frequent among Brazilian children. This fact might be related to representations people

hold in relation to pacifiers, among others, that it symbolizes the child and soothes the baby, facilitating the mothers' work⁽¹³⁾.

Although all participants agreed that the mothers' professional occupation is not a reason to offering formula, professionals presented a regular performance regarding orientation about how to maintain breastfeeding in such situations.

The evaluation of practices of professionals working in the basic health service was good in relation to questions addressing the advantages of breastfeeding and regular in relation to questions addressing the need to observe feedings and care for breast trauma. Observing feedings and being attentive to the maternal posture and to the newborn's latch on can provide important support to health professionals about the risks of early weaning. In regard to trauma, even taking into account that the results of knowledge were good for the majority of questions, in practice, only 71.4% of the professionals addressed this subject in the majority of consultations.

There still are professionals who test babies' sucking capacity with glucose serum among those who work in hospital facilities despite evidence indicating that it compromises breastfeeding. There are also those who prescribe formula for newborns with no problems whatsoever and only half of professionals allow mothers to initiate early breastfeeding in the majority of deliveries. A study aiming to categorize the group of mothers/newborns with a special need to have support to experience a successful breastfeeding beginning and also verify care practices associated with breastfeeding, indicates that the use of formulas and glucose serum was associated with the worst scores when it evaluated the following: response to the newborn's stimuli, the body position of mother/child and proper sucking⁽¹⁴⁾.

The analysis by place of work of knowledge and practices scores regarding breastfeeding evidenced significant differences, especially concerning: knowledge related to the frequency of feedings of full term babies; supply of liquids to babies as a factor related to low milk production; absence of letdown reflex on the 3rd day postpartum justifying the supply of formulas; and when questions addressed practices about providing orientation to mothers to avoid the use of pacifiers. The performance of basic care units was better than that observed in hospital facilities in all cases.

Despite these findings, the small variation between results, when place of work was taken into account, lead to the conclusion that the professionals' performance was similar. This fact draws attention because, currently, the strategy of breastfeeding best established in Brazil is the Baby-Friendly Hospital Initiative, which focuses on hospital care.

Based on the previously discussed, educational interventions in the subject should be

promoted for all professionals. From this perspective, on-going health education has an important role to play. Thus, the promotion of professional development actions in breastfeeding is suggested. These actions should be carried out in and out of institutions, which should be co-responsible for contextualized and integral actions with a view to promote the required quality of this essential health practice.

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