

BREAST-FEEDING: KNOWLEDGE AND ATTITUDES OF UNDERGRADUATE NUTRITION MAJORS¹

AMAMENTAÇÃO: CONHECIMENTO E ATITUDES DE ESTUDANTES DE GRADUAÇÃO EM NUTRIÇÃO¹

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ABSTRACT

A sample of, forty-five undergraduate nutrition majors from San Jose State University (SJSU) in the United States and forty-six from Pontifícia Universidade Católica de Campinas (PUC-Campinas) in Brazil completed a questionnaire elaborated to compare their' breast feeding experience, knowledge and attitudes. Results showed that 44.4% of SJSU and 80.4% of PUC-Campinas students had been breast-fed ($p=0.01$). Although students intended to breast-feed, both groups had a negative attitude toward breast-feeding in public: SJSU students (56.8%) felt social pressures to not breast-feed in public, and PUC-Campinas students (54.3%) expressed personal constraint. SJSU students emphasized convenience, and PUC-Campinas students mentioned, immunological factors as advantages of breast-feeding. PUC-Campinas students considered protection as an advantage of formula, feeding. Concerning causal factors for breast feeding failure, SJSU students cited negative social pressure and biological problems, and PUC-Campinas students mentioned, lack of information. In conclusion, it is necessary to improve the curricula, if we expect future nutrition professionals to have adequate knowledge to promote and choose breast feeding successfully.

Index terms: breast feeding, nutrition education, curriculum.

RESUMO

Uma amostra de 45 estudantes de graduação em nutrição da San Jose State University (SJSU) nos Estados Unidos e 46 da Pontifícia Universidade Católica de Campinas (PUC-Campinas) responderam a um questionário elaborado para comparar experiência, conhecimento e atitude sobre amamentação. Os resultados mostraram que apenas 44,4% dos estudantes da SJSU e 80,4% da PUC-Campinas haviam sido amamentados ($p=0,01$). Apesar da pretensão de amamentar seus filhos, ambos os grupos apresentaram uma atitude negativa contra a amamentação em local público: os alunos da SJSU (56,8%) referiram

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pressão social para não amamentar em público e os alunos da PUC-Campinas (54,3%) referiram constrangimento pessoal em amamentar em público. Os estudantes da SJSU enfatizaram a conveniência e os da PUC-Campinas os fatores imunológicos como as principais vantagens da amamentação. Os graduandos da PUC-Campinas consideraram proteção como uma das vantagens dos formulados. Como fatores responsáveis pelo fracasso da amamentação, os estudantes da SJSU citaram a pressão social negativa e os problemas biológicos e os da PUC-Campinas a falta de informação. Conclui-se que há necessidade de melhoria dos currículos para que o futuro profissional tenha conhecimento adequado sobre amamentação de modo a promover e a escolher o aleitamento materno com sucesso.

Termos de indexação: aleitamento materno, educação nutricional, currículo.

1. INTRODUCTION

Instead of approaching the goal of the US Department of Health and Human Service for the year 2000, which is to increase the incidence of breast-feeding to 75.0% for babies at hospital discharge and 50.0% at the age of 6 months, the incidence of breast-feeding declined, between 1984 and 1989, from 62.5% to 52.0% and from 27.5% to 18.1% respectively (BAGWELL et al., 1993). On the other hand, in Brazil, between 1981 and 1988, the prevalence of breast-feeding at maternity discharge increased from 91.3% to 94.7% in São Paulo, the capital of São Paulo, and from 88.0% to 93.8% in Recife, the capital of Pernambuco. The average duration of breast-feeding also increased from 89 to 128 days in São Paulo and from 66 to 104 days in Recife (REA, 1990). This average, however, still remains low according to the recommendation of the Brazilian State Department of Health.

The lower than desired prevalence and duration of breast-feeding may be due to the way that the promotion of breast-feeding was developed in each country. In the US professional associations, under governmental mandates, attempted to identify and reduce the barriers against breast-feeding; in Brazil a governmental program was initiated, including employment rights legislation, training for health professionals, media campaign and inclusion of breast-feeding in all health school's curricula.

Since the Brazilian Government, American Academy of Pediatrics (AAP) and American Dietetic Association (ADA) encourage nursing, it might be assumed that nutrition majors, at colleges and universities, have a favorable attitude toward breast-feeding and an adequate level of knowledge to promote nursing. In this study, the authors evaluated two groups of undergraduate nutrition students, in the

United States and Brazil, with the purpose of comparing breast-feeding knowledge and attitudes, and also to determine whether any student had experienced breast-feeding (AMERICAN..., 1982; AMERICAN..., 1986).

2. METHODS

This study consisted of an anonymous survey developed and pretested for its contents validity with the faculty who teaches nutrition in the life-span in the US. A sample of forty-five (26 in 1994 and 19 in 1995) undergraduate nutrition majors from San Jose State University (SJSU), in California, United States, and forty-six (in 1994) from Pontifícia Universidade Católica de Campinas (PUC-Campinas) in São Paulo, Brazil, completed a self administered questionnaire about breast-feeding (Annex). Those students were chosen because they had just finished the classes about breast-feeding. They represented approximately 25.0% of all the nutrition majors in those universities, and most of them were junior students. The questionnaire was easily completed in 10 minutes and was administered during regular class time in the fall of 1994 and in the spring of 1995 in "Nutrition in the Life Span" class at SJSU, and during "Nutrition in Public Health" class in 1994 at PUC-Campinas in a Portuguese version. The courses were semestral and annual, respectively.

The questionnaire included multiple-choice and short-answer questions for demographic data about age, sex, marital status, number of siblings, number of sons and daughters, and experience with breast-feeding (feeding at birth, duration of breast-feeding, number of siblings breast-fed, number of sons and daughters breast-fed). In addition, attitudes about breast-feeding (breast-feeding intention, attitude

toward breast-feeding in private and in public) and knowledge about breast-feeding (best age to introduce other foods in the infant's diet, reasons for breast-feeding, three advantages of breast-feeding, three advantages of formula feeding and three causes of choice to not breast-feed) were included in the survey questions.

The reason for a choice to not breast-feed were codified in four groups: lack of information, social pressures, biological problems and mother's choice. General causes, exclusive of educational intervention, such as insufficient milk, formula is better, baby's refusal, lack of support, mastitis, esthetics were classified as lack of information.

Completed questionnaires were coded and the statistical analysis was carried out with the Statistics Package for Social Sciences for Windows. The difference between means of continuous variables was analyzed using t-test. A chi-square (χ^2) statistic

and Fisher's exact test were used to evaluate categorical variables. The two-tailed significance level was set at $p < 0.05$. The difference between proportions was also used with a confidence interval (CI) of 95.0%.

3. RESULTS

Descriptive information on age, sex and marital status is presented in Table I. Significant differences are seen in age and marital status. SJSU students were on the average 28.1 ± 7.6 (SD) years old, 92.9% were female, 65.1% were single, they had 2.13 ± 1.34 siblings and 0.22 ± 0.64 sons/daughters; PUC-Campinas students were 21.5 ± 1.8 (SD) years old, 100.0% were female, 91.3% were single, they had 1.83 ± 1.36 siblings and 0.07 ± 0.33 sons/daughters. Three students from PUC-Campinas did not report their number of siblings. The percentage for all questions answered is presented; some questions were not answered.

Table 1. Characteristics of nutrition major students.

University		PUC Campinas		SJSU			
Variable		n°	M±SD	n°	M±SD	t	p
Age (years)		45	21.5±1.8	45	28.1±7.6	5.63	<0.001
Variable	Category	n°	%	n°	%	Fisher's test	
Sex	Female	46	100.0	39	92.9	0.11	
	Male	-	-	3	7.1		
	no data	-	-	3	-		
Marital Status	single	42	91.3	28	65.1	0.009 ¹	
	married	3	6.5	12	27.9	0.004 ³	
	divorced	-	-	3	7.0	0.010	
	widow	1	2.2	-	-		
	no data	-	-	2	-		

1. single x married

2. single x married + divorced + widow

3. single + divorced + widow x married

3.1 Experience

The data suggest that a significantly low percentage of SJSU students, 44.4% (n=20), had been breast-fed, in comparison to the percentage of breast-fed students attending PUC-Campinas, 80.4% (n=37), ($\chi^2 = 6.33$, $p = 0.01$). Forty percent (8) of SJSU students knew the length of time they were breast-fed (7.8 ± 6.9 months), while 75.7% (28) from PUC-Campinas knew that they were breast-fed for 6.0 ± 6.0 months. Approximately 18.0% (8) of SJSU students did not know if they were breast-fed *versus*

22% (1) from PUC-Campinas ($p=0.015$ according to Fisher's exact test).

Among the students who were not breast-fed, 85.8% (12) from SJSU received formula and 71.4% (5) from PUC-Campinas received powdered milk or formula as the principal first food. Three students from SJSU and one from PUC-Campinas did not know which food they received during their infancy.

The average percentage of the students' siblings breast-fed was also higher for PUC-Campinas students (89.3%) than for SJSU (59.4%), according to the

difference between proportions (CI = -49.7 to -10.0 for difference between two proportions). However, it was similar for those students who breast-fed their own infants (75.0% at PUC-Campinas and 83.3% at SJSU).

3.2 Attitude

Of those students who have not yet had children, 97.8% from PUC-Campinas and 100.0% from SJSU intended to breast-feed their own infants, exclusively or not. Two students from SJSU did not answer the question, two did not plan to have children and one was undecided.

About 41.0% (18) of the students from SJSU and 41.3% (19) from PUC-Campinas had a definite positive attitude toward breast-feeding in public, whereas 100.0% of the students from both schools indicated a positive attitude about breast-feeding in private. Actually, most of the students from both groups had a negative attitude toward breast-feeding in public (Figure 1). SJSU students felt social pressures to not breast-feed in public: 20.5% (n=9) did not accept breast-feeding in public (CI = -32.4 to -8.5) and 36.3% (n=16) accepted only if the baby and the breast were not exposed (CI = -47.4 to -17.0). PUC-Campinas students, 54.3% (n=25), expressed personal constraint about breast-feeding in public (CI = 3.4 to 32.6). One student from SJSU did not answer this question.

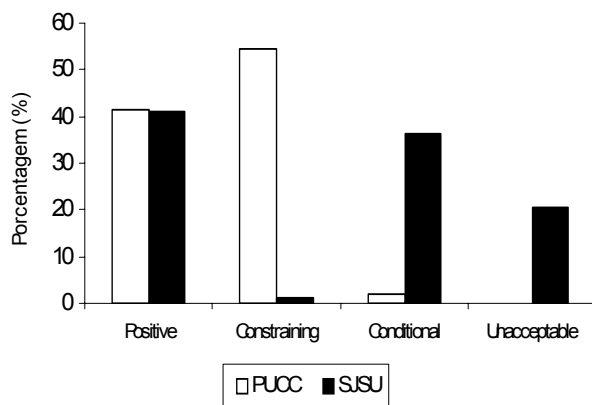


Figure 1. Percentage of attitude toward breast-feeding in public.

3.3 Knowledge

Concerning the introduction of other foods, SJSU students reported that the best age should be at an older age, 8.4 ± 4.7 months. After this age babies should receive solid foods, regardless of whether they received breast-milk or formula before. Brazilian students at PUC-Campinas indicated 5.4 ± 1.4 months ($t=4.11$, $p<0.001$). For them, the babies should receive only breast-milk until this age. This question and the answers given show an important limitation of this study: the use of the same questionnaire for both groups. Cultural factors interfered in the comprehension of some open-ended questions; for example, the word “food” in English refers to solid foods while its translation into Portuguese (“alimento”) includes anything but mother’s milk.

Students from both schools cited nutritional, psychological and economic factors as advantages of breast-feeding (Figure 2). However, SJSU students selected convenience (CI = 5.7 to 19.9) as a factor while immunological factors (CI = -21.5 to -1.9) were cited by PUC-Campinas students. Regarding causal factors for breast-feeding failure (Figure 3), SJSU students cited negative social pressure (CI = 2.4 to 24.8) and biological problems (CI = 10.6 to 25.2), while the students from PUC-Campinas related lack of information (CI = -45.9 to -22.0). On the other hand, the convenience of formula feeding was the most cited advantage by all students (Figure 4). PUC-Campinas students also cited protection (CI = -20.7 to -5.1) as an advantage of formula feeding.

From 273 expected answers, 138 from PUC-Campinas students and 135 SJSU students, 3 and 15 students, respectively, did not answer the question about the advantages of breast-feeding (CI = 2.8 to 15.0), 32 and 39 about advantages of formula feeding, 4 and 29 about causes of failure of breast-feeding (CI = 10.3 to 26.9). Regarding the intention to breast-feed (Figure 5), PUC-Campinas students stated that breast-feeding is natural (CI = -74.4 to -37.0), and SJSU stated that breast-feeding is nutritionally appropriate for the infant (CI = 3.3 to 30.7) and psychologically adequate for the mother and the baby (CI = 1.2 to 27.4).

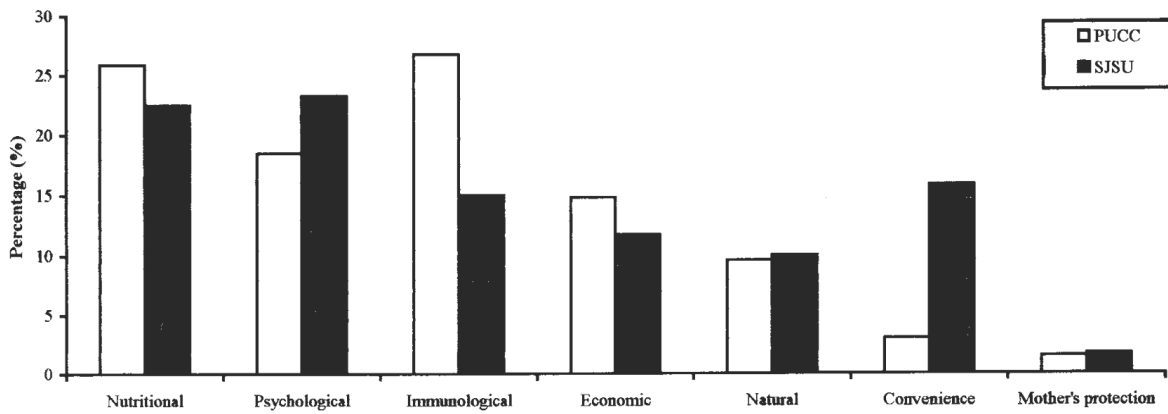


Figure 2. Percentage of advantages of breast-feeding.

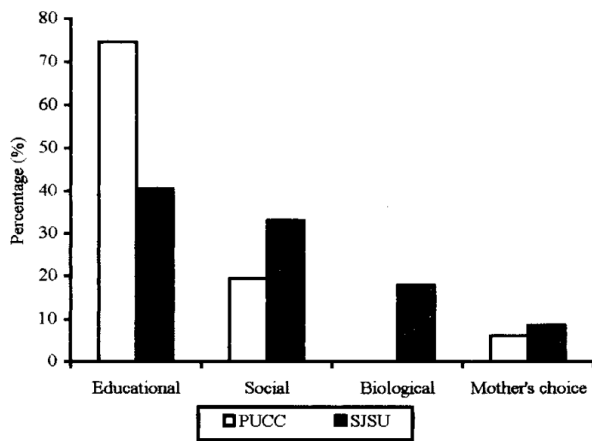


Figure 3. Percentage of causes of breast-feeding failure.

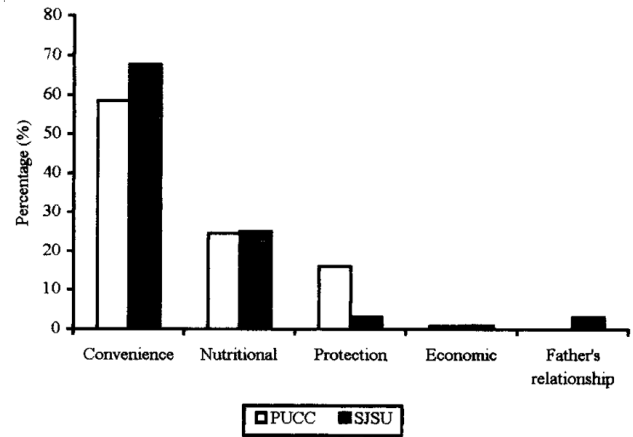


Figure 4. Percentage of advantages of infant formula.

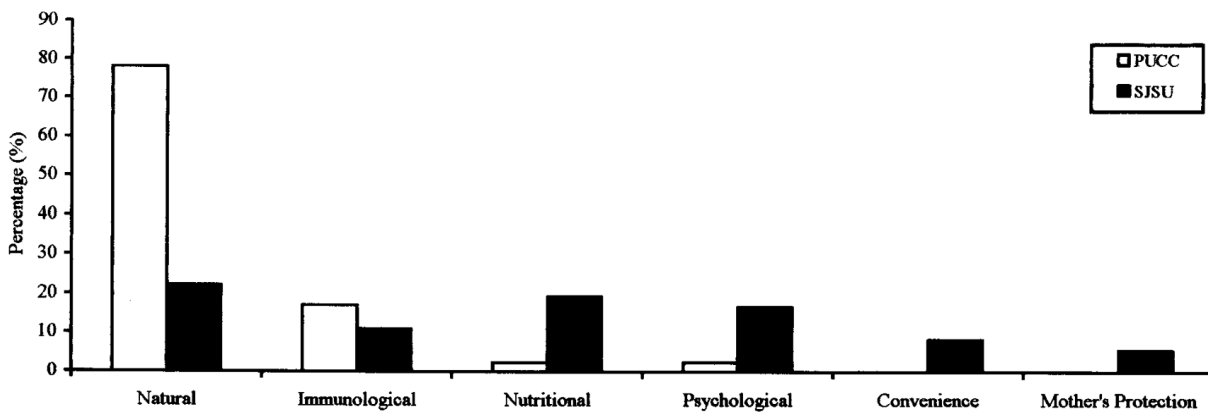


Figure 5. Percentage of reason for breast-feeding.

4. DISCUSSION AND CONCLUSIONS

This study was carried out with American and Brazilian nutrition majors. The prevalence of having been breast-fed for both groups is consistent with the data reported by the literature at the time these students were born (MARTINS FILHO, 1976; JANKE, 1993). Almost 18% of SJSU students did not know if they were breast-fed or not, indicating that nearly one out of five had no information from their mothers. This could be due to a lack of interest about the subject or a lack of freedom (like a taboo) to discuss it.

Although almost all students intended to breast-feed their own infants, less than fifty percent indicated a positive attitude toward breast-feeding in public. The social pressures in the US against nursing in public were identified in several answers: “embarrassing for all around the mom and baby”, “should not cause disturbance toward others”, “this is not acceptable in today’s society”. PUC-Campinas students mentioned constraint to breast-feed in public. Regarding the high prevalence of breast-feeding in Brazil and no social pressures against it, the hypothesis of immaturity must be considered because the students were on the average 21.5 years old.

In many societies, the breasts are a strong sexual symbol. Consequently, for many women and men, breast-feeding may reduce the attractiveness of the breasts. People believe that breast-feeding interferes permanently in the breasts esthetics, forgetting that the primary function of the mammary glands is to breast-feed. This hypothesis may explain the findings of some studies that show the importance of the father’s preference in the choice of the baby’s feeding (MATICH & SIMS, 1992; RICHARDSON & CHAMPION, 1992; LITTMAN et al., 1994). On the other hand, the simple exposure of the breast, while the woman is feeding the baby, may be an affront to some because it stimulates their own sexuality. Breast-feeding itself is surrounded by sensuality; it can be a pleasure for the mother and the baby and all around (LEBOVICI & KESTEMBERG, 1990; PEPE et al., 1991; RENSHAW, 1994; VAN ESTERIK, 1994).

On the other hand, for PUC-Campinas students, breast-feeding was chosen as the preferred feeding method for their own babies because it is natural; for SJSU students it was chosen because it is nutritionally

appropriate for the baby and psychologically adequate to promote a positive maternal-infant relationship.

Moreover, the students agreed about most of the advantages of breast-feeding (nutritional, psychological and economic). SJSU students emphasized convenience and PUC-Campinas students stressed the immunological properties. Both groups also agreed about the advantages of formula feeding (convenience and nutritional properties), but PUC-Campinas students cited the protective factors against lactose intolerance, protein allergy and regurgitation, for example. Interestingly, the factors cited as advantages of formula feeding are the same mentioned for breast-feeding. Besides, PUC-Campinas students had an inaccurate belief about the protective properties of formula feeding because lactose intolerance, protein allergy and regurgitation are not frequent enough to justify that position.

The proportion of no answers about advantages of breast-feeding (11.1%) and causes of breast-feeding failure (21.5%) among SJSU students may also show a lack of knowledge about nursing. The most common causes for a choice to not breast-feed were lack of information and biological problems. Among lack of information, PUC-Campinas students emphasized lack of orientation, wrong techniques, mother’s esthetics and physician orientation. For SJSU students it was insufficient milk, though it is known that, generally, insufficient milk is caused by the early introduction of feeding bottles or incorrect techniques of breast-feeding. There may be a problem due to lack of knowledge (MOURA et al., 1989). Among biological problems, SJSU students stated mother’s and baby’s illness. Among social pressures, SJSU cited inconvenience and mother’s work.

The benefits of breast-feeding are widely acknowledged by the health community, but formula advertising in the US is prevalent and formula is readily available (GREER & APPLE, 1991). Therefore, it seems as though women’s “choices” were limited because there is not equivalent breast-feeding advertising. In addition, health professionals, who influence the behavior (society) of citizens and employees, do not have experience and may be uninterested, themselves, in breast-feeding (MICHELMAN et al., 1990; BUXTON et al., 1991; STARBIRD, 1991; PINELLI et al., 1993; FREED et al., 1995).

The way that breast-feeding is felt is culturally defined. If the barriers against breast-feeding have cultural determinants, it will be impossible to change the behavior without deep social changes. If breast-feeding rate is expected to rise, it will be necessary to develop new marketing strategies, such as adequate prenatal information, maternity practices that encourage breast-feeding, improved curricula in health schools (including practices) and changes in policies (MICHELMAN, 1990; REA, 1990; JANKE, 1993; RENSHAW, 1994; VAN ESTERIK, 1994).

This study suggests differences between the students, identifies some barriers against breast-feeding and evaluates, indirectly, the way that the subject of breast-feeding was considered in the curriculum. However, our findings cannot be extended to all nutrition schools from both countries because our sample was not representative of the geographical, social and cultural diversity of the United States and Brazil. It was concluded that nutrition professionals are responsible for promoting breast-feeding and infant health, but it is necessary to provide more information about breast-feeding benefits, to correct misinformation and to change public attitudes, if we expect future nutrition professionals to promote breast-feeding.

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ANNEX

NuFS 106 - BREAST-FEEDING - fall, 1994

No name please Your Age _____ Major Non-Major _____

Sex F M Marital Status single married divorced

Number of sons and daughters _____ Number of brothers and sisters _____

Were you breast-fed? Yes No I don't know

If yes, for how long? _____

If not, what was the food that you received just after birth? _____

How many brothers and sisters did your mother breast-feed? _____

If you have sons and daughters, how many of them were breast-fed? _____

When you/your wife has a baby, will you use infant formula or breast-feeding? _____

Why? _____

What is your attitude toward breast-feeding?

in private? _____

in public? _____

Write 3 advantages about infant formula

1) _____

2) _____

3) _____

Write 3 advantages about breast-feeding

1) _____

2) _____

3) _____

Write 3 most common causes of breast-feeding failure

1) _____

2) _____

3) _____

What is your impression of the best age to introduce other foods in the infant's diet? _____

Thank you