

FACTORS ASSOCIATED WITH BREASTFEEDING IN DISABLED AND PHENOTIPICALLY NORMAL CHILDREN

Fatores associados à amamentação em crianças com deficiência e fenotipicamente normais

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ABSTRACT

Purpose: to evaluate the duration of breastfeeding and identify possible interfering factors in children with disabilities and phenotypically normal. **Methods:** 99 children with disabilities and phenotypically normal 1-4 years of age, both genders, assisted and enrolled at the Center for Dental Care to People with Disabilities and Association of Parents and Friends of Disability at Araçatuba, São Paulo, Brazil and at Baby Clinic at Faculty of Dentistry from Araçatuba at UNESP – UnivEstadualPaulista.. Was used a questionnaire developed specifically for this study, which was answered by their mothers and / or caregivers. The dependent variable was the exclusive breastfeeding until six months of age. The data were subjected to chi-square or Fisher exact test, and linear regression models, considering a significance level of 5 %. **Results:** cerebral palsy was the most frequent deficiency in the study. The male children in the group of phenotypically normal on exclusive breastfeeding for a longer period of time and the degree of maternal education and birth complications were also an influencer for the duration of this practice factor. **Conclusions:** the duration of exclusive breastfeeding did not differ between both groups. The occurrence of exclusive breastfeeding increased prevalence was observed in the group of phenotypically normal males having significance between genders in the group of phenotypically normal. However it is not only the patient's condition that limits the practice of exclusive breastfeeding but a set of associated factors such as gender in the group of phenotypically normal, the level of education of the mother for the group with disabilities and birth complications in both groups.

KEYWORDS: Breast Feeding; Infant; Disabled Children

■ INTRODUCTION

Mother's milk is considered the best food for the newborn, being one of the essential elements for physical growth, immunological function and psychological development of children, especially during the first year of life¹⁻⁴.

Various studies have emphasized the importance of exclusive breastfeeding in the first six months of life, especially in developing countries, where infant survival frequently depends on the fact of the baby being breastfed or not⁵⁻⁷. In spite of the risks, some researchers, based on studies with populations exposed to precarious socio-economic conditions, consider breastfeeding up to two years of the child's life to be adequate⁸.

There are various factors that influence the practice of breastfeeding: family history, the emotional state of the woman who breastfeeds, and the support of health services, work, community, media and family. It is necessary to break-down taboos and change the habits of women and the social medium in general⁹. The woman who breastfeeds needs space where she can expose her fears,

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concerns, pleasures and doubts to achieve the balance that enables her to breastfeed⁵.

Due to the condition of health in which the patient with special needs finds himself/herself, the mother or caregiver must be informed about the benefits of exclusive breastfeeding and encouraged to continue it for up to 6 months of the child's life. When the baby presents an abnormal suction-swallowing reflex, immediate improvement may be obtained by combined control of the cup, head and mandible. If the child is severely handicapped and has no suction-swallowing reflex, and needs to be fed by tube, the only way to free it from the tube is to offer spoon feeding¹⁰.

Due to the scarcity of studies related to the purpose of this research, and in view of this scenario, the aim of this study was to evaluate the time of breastfeeding and identify possible interfering factors in disabled and phenotypically normal children.

■ METHODS

In order to conduct this cross-sectional study, 100 children were randomly selected, according to previous scheduling, with 50 being disabled and 50 phenotypically normal, of both genders, in the age-range from 1 to 4 years. They were enrolled and cared for at the Baby Clinic and Dental Care Center for Persons with Special Needs (CAOE), and Complex Structure Help Unit, both entities of the Araçatuba Campus Dental School of the "Universidade Estadual Paulista "Julio de Mesquita Filho". Eventually children at the APAE of Araçatuba-SP were also included, because some of the patients frequented this institution on a weekly basis to receive therapy, which facilitated data collection, as the mothers were present at all times. This research was approved by the Ethics Committee on Human Research of the Araçatuba Campus Dental School, UNESO (Process: 2008-01680)

A questionnaire was used, with questions pertaining to the subject under study, based on the clinical record chart of the Baby Clinic of Londrina, of the State University of Parana, Baby Clinic of the Araçatuba Campus Dental School and CAOÉ, pioneer in this area, where it was answered by the respective mothers and/or caregivers of these children. The breastfeeding patterns considered in the study were classified in accordance with the recommendations of the World Health Organization (WHO)¹¹. Exclusive breastfeeding was considered when the child was fed with human milk, directly from the breast or extracted from it, without the addition of water and/or any other liquid, with the

exception of drops or vitamin, mineral or medication syrups, in dichotomous categories: yes/no. All the children who were exclusively fed with breast milk for six months or longer were classified as "yes"; and children who were exclusively breastfed for less than six months, or who were not exclusively breast fed, or those who were never breastfed, were classified as "no".

The criteria for inclusion of subjects in the research were phenotypically normal children, and those with disability, from 1 to 4 years of age. The criterion for exclusion from the research was mothers who were unable to inform about the child's past history. A disabled child who was adopted at the age of three years was also excluded for lack of information about the first year of life. The sample was thus composed of 49 children with disability. These disabilities were reported by the mothers at the time of the interview, considering the clinical diagnosis made by specialist physicians or exams performed by geneticists.

On the scheduled date, the term of free and informed consent was read and explained to the persons responsible for the children, and their signatures were requested for authorization of the research.

Having obtained the individual questionnaires of each child, correctly filled out, the data were tabulated on spreadsheets in the *Microsoft Excel*[®] program in order to check the data. Later statistical analyses were performed, using the software program SPSS 20[®], applying the chi-square or Exact Fisher tests, at the level of significance of 5%, and linear regression models. The results were considered significant when the p-value=p<0.05.

■ RESULTS

In the group of disabled children, the disabilities were cerebral palsy n= 13, Down syndrome n= 10, Hydrocephalia n= 10, West Syndrome n= 3, hyperactivity n= 2, microcephaly n= 2, delayed psychomotor development n= 2, alteration in the callous body + dilatation of the ventricles n= 1, speech disturbance n= 1, neurofibromatosis n= 1, myelomeningocele = 1, Hypochondroplasia syndrome = 1, mental retardation = 1, autism = 1, cleft palate = 1, strabismus = 1, Moebius syndrome = 1, kernicterus = 1, totaling fifty-three children, as there were patients who presented more than one mental or physical disability.

As shown in Table 1, with regard to gender, there was a percentual prevalence of the male gender in both groups, with statistical significance only in the group of normal children when associated with breastfeeding (Chi-square test p=0.038) (Table 2).

As regards the mother's age, in the phenotypically normal group, it was observed that the period of gestation occurred most frequently between 26 and 35 years of age (n=34), whereas in the group of disabled children, gestation occurred earlier, between 17 and 25 years of age (n=24). For the mother's educational level in the phenotypically normal group, it was shown that almost all the children, 92%, had mothers who had completed high school through to complete college education. This did not occur in the other group, in which there was statistical significance ($p= 0,047$), when

education was associated with exclusive breastfeeding (EBF) up to six months (Table 2). In both groups the families with an income below 04 minimum wages were those who most exclusively breastfed their babies until they were 06 months old. As regards marital status, it was also observed that in both groups, the mothers who were married or in an illegitimate union were those who most breastfed their babies. The type of birth most frequently observed in both groups was of the cesarean type, with approximately 40% of the mothers who had this type of birth breastfeeding their babies (Table 2).

Table 1 – Sociodemographic characteristics of the studied population (n=99)

Variables	Phenotypically Normal		With Disability	
	%	n	%	n
Gender				
Female	48.0	24	44.9	22
Male	52.0	26	55.1	27
Child's age				
12 to 22 months	24.0	12	26.5	13
24 to 35 months	34.0	17	20.4	10
36 to 57 months	42.0	21	53.1	26
Mother's age				
17 to 25 years old	20.0	10	49.0	24
26 to 35 years old	68.0	34	40.8	20
36 to 48 years	12.0	6	10.2	5
Mother's Educational level				
Primary School incomplete	8.0	4	55.1	27
High School incomplete				
High School complete	92.0	46	44.9	22
College complete				
Family Income				
Below 04 mw	54.0	27	87.8	43
from 05 to 14 mw	42.0	21	12.2	6
Over 15 mw	4.0	2	0.0	0
Mother's marital status				
Married + illegitimate union	94.0	47	91.8	45
Single + Separated	6.0	3	8.2	4
Types of birth				
Normal	10.0	5	26.5	13
Cesarean	90.0	45	73.5	36
EBF up to 6 months				
Yes	40.0	20	42.9	21
No	60.0	30	57.1	28

mw = minimum wage EBF (Exclusive Breast Feeding)

Table 2 – Association of dependent variable with sociodemographic characteristics and family income of two studied groups

	Exclusive breastfeeding up to 6 months			
	Normal		Disabled	
	(%)n	p	(%)n	p
Gender				
Female	25.06		36.48	
Male	(53.8)14		(48.1)13	
		0.038 ^a		0.407 ^a
Child's age				
12 to 22 months	(33.3)4		(53.8)7	
24 to 35 months	(41.2)7		(30.0)3	
36 to 57 months	(42.9)9		(42.3)11	
		0.867 ^c		0.534 ^c
Mother's age				
17 to 25 years old	(20.0)2		(54.2)13	
26 to 35 years old	(44.1)15		(35.0)7	
36 to 48 years	(50.0)3		(20.0)1	
		0.355 ^c		0.255 ^c
Mother's Educational level				
Primary School incomplete High School incomplete	(25.0)1		(55.6)15	
High School complete College complete	(41.3)19		(27.3)6	
		0.641 ^b		0.047 ^a
Family Income				
Below 04 mw	(44.4)12		(44.2)19	
from 05 to 14 mw	(33.3)7		(33.3)2	
Over 15 mw	(50.0)1		(0.0)0	
		0.720 ^c		0.624 ^c
Mother's marital status				
Married + illegitimate union	(42.6)20		(46.7)21	
Single + Separated	(0.0)0		(0.0)0	
		0.265 ^b		0.125 ^b
Types of birth				
Normal	(40.0)2		(53.8)7	
Cesarean	(40.0)18		(38.9)14	
		1.000 ^b		0.350 ^a

mw= minimum wage; a = X² Test; b = Exact Fisher Test; c = Anova.

In the regression model in Table 3, only in the phenotypically normal group was significance observed in the results with regard to the variable *gender*, confirming the higher prevalence exclusive breastfeeding in the phenotypically normal group

of the male gender, and the birth complications that were reported by the mothers, being anoxia, hypoxia, jaundice, hypoglycemia, convulsion and myelomeningocele (type of spina bifida).

Table 3 – linear logistic regression model evaluation duration of exclusive breastfeeding up to six months in both groups researched

Exclusive breastfeeding up to 6 months				
Groups	Variables	Odds ratio	(IC 95%)	p
Phenotypically normal	Gender	0.324	0.052-0.595	0.021
	Mother's Educational level	0.140	-0.345-0.626	0.563
	Difficulty with taking the breast	-0.168	-0.464-0.128	0.259
	Breastfeeding 4h after birth	0.168	-0.128-0.464	0.259
	Complications at birth	-0.605	-1.168-0.042	0.036
With disability	Gender	0.138	-0.147-0.423	0.334
	Mother's Educational level	-0.323	-0.513-0.049	0.103
	Difficulty with taking the breast	-0.152	-0.443-0.139	0.298
	Breastfeeding 4h after birth	0.069	-0.220-0.358	0.634
	Complications at birth	-0.260	-0.547-0.027	0.075

IC= interval of confidence; p=obtained by X² test.

In Figure 1 the distribution of the independent variables mothers' work, guidance about breastfeeding and breastfeeding 4 hours after the birth showed these variables were more prevalent in the

phenotypically normal group, while the variables difficulty with taking the breast, complications at birth and prematurely born babies were observed with higher prevalence in the group of disabled children.

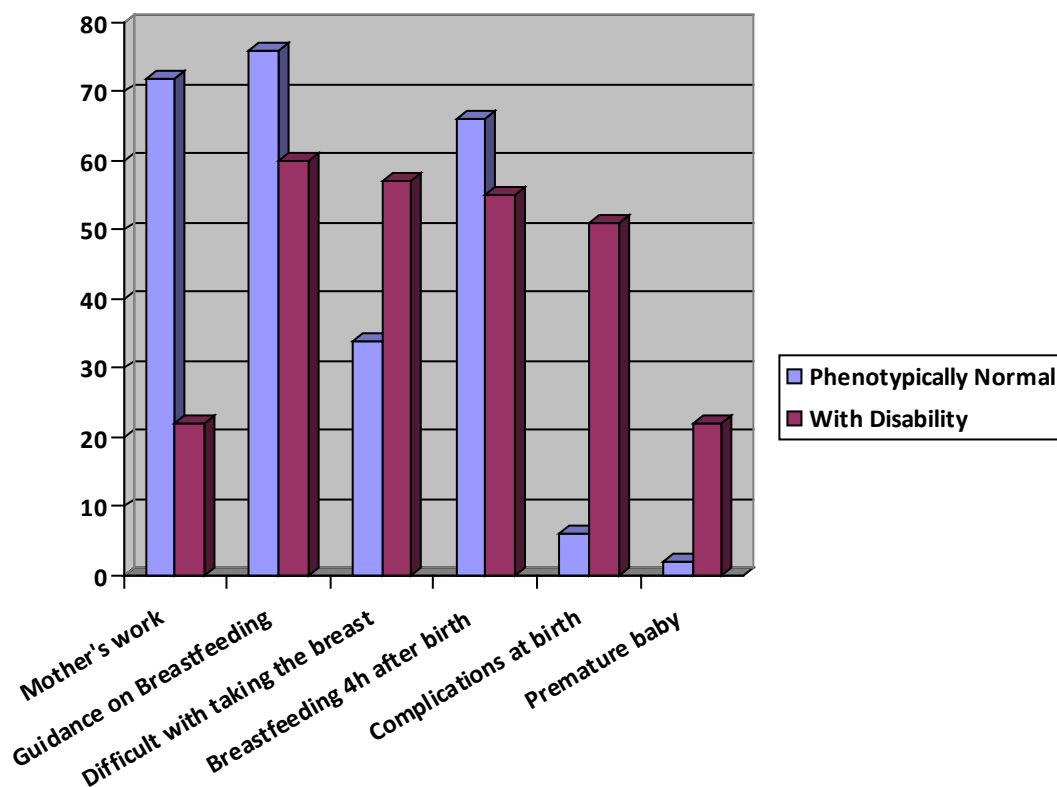


Figure 1 – Distribution of variables (Mother's work, Guidance on breastfeeding, Difficulty with taking the breast, Breastfeeding 4h after the birth, Complications at birth and Prematurely born baby) dichotomized for both groups examined.

In the present study the occurrence of premature babies in the phenotypically normal group was only one child, and this child was not exclusively breastfed. In the group with disability there were eleven premature babies, among whom 3 were breastfed.

■ DISCUSSION

There were 84 disabled children in the CAOE, in the age-range from 1 to 4 years old, but only 49 were able to participate in the research, composing a representative sample of this universe.

In the group of phenotypically normal children, 24 (48%) were of the female gender, and in the group with disability, 22 (44.9%) were girls. Thus, there was no statistical difference between the groups as regards gender. A similar result to that found in another study, in which out of a total of 495 children, 274 (55.4%) were boys and 221 (44.6%) girls¹².

Recent data about the occurrence of breastfeeding in Brazil were from the II Research on Prevalence of Breastfeeding in Brazilian Capitals and the Federal District in 2009, which describes prevalence of 19.8% and 8.4% of exclusive breastfeeding at four and six months of age, respectively, in the Northeast of Brazil. In the city of Recife, PE, these rates were 18.6% and 6.1%, respectively. The prevalence of EBF in children under 06 months of age was 41.0% in the set of Brazilian capitals and FD, which corroborates the present study, in which a similar prevalence of EBF was observed in both groups (phenotypically normal children $n=40\%$ and in the group of those with disability $n=42.9\%$). The behavior of this indicator was rather heterogeneous, ranging from 27.1% in Cuiabá/MT to 56.1% in Belém/PA¹³. In one study it was verified that the prevalent type of feeding was mixed, because 61.54% of the 141 children were breastfed and bottle fed, and as regards the time of natural breastfeeding, it was observed that the majority (40.38% of the children) were not breastfed or received it for a short time¹⁴.

When this exclusive breastfeeding index was compared with the literature pertinent to the subject, it was shown to be satisfactory, mainly in the group with disability. As the practice of breastfeeding is also related to psychological aspects and these mothers frequently do not experience the grief after the birth of their disabled children, which could prevent this practice, these mother often only accept or discover their children's disability after the time of exclusive breastfeeding, a fact that helped to establish the practice. The prolongation of breastfeeding, as is the case with early weaning, are influenced by many aspects, so that one recognizes a process

impregnated with ideologies and determinants that result in unconscious and concrete conditions of life¹⁵.

According to the reports of these mothers, the child who were not exclusively breastfed were those who had problems at birth and were immediately placed into the incubator or in the Intensive Care Unit (ICU).

In this study, it was verified that the mothers of phenotypically normal children presented a higher educational level than those in the group with disabilities, but on the other hand, these mothers had to go back to work at an earlier stage, stopping the practice of EBF, which may have determined the similarity in the prevalence of EBF between the groups. According to the results found in another research, the prevalence of EBF was 22.7% up to four months, ranging from 39.6% on the first day to 12.4% at 120 days of life. There was higher prevalence of EBF among women with a higher educational level, who did not go out to work and who had exclusively breastfed their babies right from the first day that they had gone home after being discharged from the maternity hospital¹⁶. In a recent study, the duration of breastfeeding was longer among women who had a good level of education, who had previously breastfed, planned this practice, and had not gone back to work in the first year after the birth¹⁷.

In this study, it was observed that the majority of the mothers interviewed affirmed that they had breastfed, but fewer than half of them exclusively breastfed their babies in the first six months of life. In both groups, the majority of the interviewees were married or lived in an illegitimate union. In another study, it was observed that the majority of the mothers who practiced breastfeeding were married or lived in consensual union; had in incomplete primary school level of education, and a family income of one to six minimum wages⁶.

As regards the type of birth, there was statistically significant difference between the groups, because higher occurrence of home births was observed in the group of normal children, than in the group with disability. Quite probably, this resulted from factors connected with family income, considering that home birth is high cost and the majority of the disabled population studied had a monthly family income of below 04 minimum wages (87.8%).

There was also statistically significant difference between the groups as regards complications at birth, and it was possible to observe that in the group of normal children, practically no problems occurred. Whereas in the group of disabled children, 51% of them presented various problems at birth, such as anoxia, hypoxia and convulsion, which may have contributed significantly to the establishment

of the disabilities reported. In another research related to the time of breastfeeding, it was observed that 66.3% of the mother interviewed breastfed their babies for longer than 180 days, and that there was greater evidence of premature children when compared with the time of breastfeeding of full term babies⁹.

The sample was representative within the universe studied. This study is unprecedented in the area researched. However, there were limitations to this study, which should be considered, because the data were collected by means of a questionnaire answered by the parents, requesting reports of past memory which may generate a degree of bias. Therefore it is suggested that future researches with a larger number of subjects should be conducted to complement this study.

■ CONCLUSION

The indices with regard to the duration of breastfeeding were unsatisfactory for both groups, and did

not attain the goal recommended by the WHO. This requires an increase in governmental educational actions related to the practice of EBF.

The aspects observed relative to the duration of exclusive breastfeeding in both groups researched proved that it is not only the patient's condition that limits the practice of exclusive breastfeeding, but the associated set of interfering factors, such as gender in the phenotypically normal group, mother's educational level in the group with disability and complications at birth in both groups.

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RESUMO

Objetivos: avaliar o tempo de aleitamento materno e identificar possíveis fatores interferentes em crianças com deficiência e fenotipicamente normais. **Métodos:** 99 crianças com deficiência e fenotipicamente normais de 1 a 4 anos de idade, de ambos os gêneros, matriculadas e assistidas no Centro de Assistência Odontológica a Pessoa com Deficiência e na Associação de Pais e Amigos dos Excepcionais de Araçatuba, São Paulo, Brasil e na Bebê Clínica da Faculdade de Odontologia do Campus de Araçatuba, da Universidade Estadual Paulista “Júlio de Mesquita Filho”. Utilizou-se um questionário desenvolvido especificamente para este estudo, que foi respondido pelas respectivas mães e/ou cuidadores. A variável dependente utilizada foi a amamentação exclusiva até os seis meses de idade. Os dados foram submetidos aos testes qui-quadrado ou exato de Fisher, bem como modelos de regressão linear, considerando nível de significância de 5%. **Resultados:** a paralisia cerebral foi a deficiência de maior ocorrência no estudo. As crianças do gênero masculino no grupo dos fenotipicamente normais receberam aleitamento materno exclusivo por um período maior de tempo e o grau de escolaridade das mães e as complicações no parto também foram um fator influenciador para a duração desta prática. **Conclusões:** o tempo do aleitamento exclusivo não diferiu entre ambos os grupos estudados. A ocorrência da amamentação exclusiva de maior prevalência foi observada no grupo dos fenotipicamente normais do gênero masculino havendo significância entre os gêneros no grupo dos fenotipicamente normais. Mas não é somente a condição do paciente que limita a prática do aleitamento materno exclusivo e sim um conjunto de fatores associados, como gênero no grupo dos fenotipicamente normais, o grau de escolaridade da mãe para o grupo dos com deficiência e as complicações no parto em ambos os grupos.

DESCRIPTORIOS: Aleitamento Materno; Lactente; Crianças Portadoras de Deficiência

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