

## FACTORS WHICH INFLUENCE WEANING IN PRETERM INFANT

### *FATORES QUE INFLUENCIAM O DESMAME NO RECÉM-NASCIDO PREMATURO*

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#### **Abstract**

**Objective:** to verify the major factors influencing weaning in preterm infants born in a public maternity center in the city of Sao Paulo, Brazil. **Method:** a total of 89 low-birth-weight preterm infants followed on an outpatient basis were studied from August 2006 to May 2007. These premature infants were divided into two groups according to the presence of partial weaning (introduction of supplementary bottle feeding) or full weaning (breastfeeding cessation). Maternal and infant variables obtained by means of interviews with the mothers and from the medical records were studied. The Student's *t* test and Spearman rank correlation test were used for the statistical analysis. The significance level was set at 5%. **Results:** mean age for partial weaning was 1.41 months. Mothers who pumped during hospitalization or who started working or returned to work started bottle feeding later. The lower the birth weight and the gestational age, the later bottle feeding was started. The lower the age at pacifier introduction, the earlier the partial weaning. Mean age for full weaning was 2.93 months. Mothers hospitalized in the kangaroo mother care unit, or those who started working or returned to work, stopped breastfeeding later. **Final Considerations:** the findings of the present study point to the importance of factors that can be controlled by the health care team – such as breast milk pumping, the kangaroo mother care method, and advice not to use pacifiers - in the prevention of early weaning in preterm infants. Uncontrollable factors such as birth weight and maternal work were predictive of longer breastfeeding.

**Key words:** infant; premature; weaning.

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**Resumo:**

**Objetivo:** verificar os principais fatores que influenciam o desmame em prematuros nascidos em maternidade pública da cidade de São Paulo. **Método:** estudaram-se 89 prematuros de baixo peso acompanhados em ambulatório, no período de agosto de 2006 a maio de 2007. Esses prematuros foram divididos em dois grupos conforme a presença de desmame parcial (introdução de complemento lácteo por mamadeira) ou desmame total (interrupção do aleitamento materno). Foram estudadas variáveis maternas e das crianças, obtidas por meio de entrevista com a mãe e consulta a prontuários. Na análise estatística, utilizaram-se os testes *t* (*Student*) e de correlação (*Spearman*). Adotou-se o nível de significância de 5%.

**Resultados:** a média de idade para o desmame parcial foi de 1,41 meses. Mães que realizaram ordenha durante a internação, ou que iniciaram ou retornaram ao trabalho, introduziram mamadeira mais tardiamente. Quanto menor o peso ao nascer e a idade gestacional, mais tardia a introdução da mamadeira. Quanto menor a idade de introdução da chupeta, mais precoce o desmame parcial. A média de idade para o desmame total foi de 2,93 meses. Mães que internaram na enfermaria canguru, ou que iniciaram ou voltaram ao trabalho, interromperam o aleitamento materno mais tardiamente. **Considerações finais:** os achados do presente trabalho apontam para a importância de fatores controláveis pela equipe de saúde na prevenção do desmame precoce em prematuros, como ordenha, metodologia canguru e orientação para o não uso de chupetas. Fatores não controláveis como peso ao nascer e trabalho materno, mostraram-se indicativos de maior permanência do aleitamento materno.

**Palavras-chave:** recém-nascido; prematuro; desmame.

## INTRODUCTION

Since the beginning of Neonatology, premature newborns (NB) have represented a challenge. Technological progress has allowed greater survival rates and advances in this area are results of the need to diminish morbidity and mortality in these NBs.<sup>1</sup> Research projects on the neurobehavioral development of these children showed the need for integral care and recovery of maternal breastfeeding (BF)<sup>2</sup> by reinstating the presence of mothers in the neonatal units<sup>3-4</sup>.

In addition to the concept of the 1980s that BF would be beneficial due to psychological factors, scientific knowledge of the 1990s increased understanding as to its protective action, leading to a decrease in rates of necrotizing enterocolitis, hospital infections, and hospital stays.<sup>5-6</sup> These benefits continue

even after hospital discharge, with decreased morbidity during the first year of life and lower malnutrition and infant mortality rates.<sup>5</sup> Research also showed evidence of beneficial effects in the mid-term and long-term neurological development and cognitive aspects<sup>7</sup>.

Despite these facts, the incidence of BF is lower in these NBs.<sup>7</sup> One study revealed that of 87 mothers of premature infants who had planned to breastfeed, only 34% continued lactation up until 40 corrected weeks of life, and only 14% fed the baby at the breast at least once a day at the corrected four months of age<sup>8</sup>. Nevertheless, Brazil presents better statistics than these. Research in a hospital that uses “kangaroo” methodology, showed a frequency of 94.6% for BF and 84.4% for exclusive maternal breastfeeding (EBF)<sup>2</sup> at the time of hospital discharge.<sup>7</sup> Another study

conducted with 72 mothers of premature infants with very low weight showed an increase in EBF (19.5%) and BF rates (80.5%) in the group that received additional orientation<sup>9</sup>.

Studies on weaning of full-term NBs after hospital discharge showed that the primary factors were maternal impression of a small quantity of milk or of “weak milk”, difficulties with the baby’s sucking at the nipple, use of pacifiers, and maternal age and level of schooling. However, few studies focused on factors related to weaning of premature infants<sup>10-13</sup>.

Despite advances over the last decades, we still are surrounded by doubts as to weaning premature babies, which justifies further research in this area.<sup>14</sup> Thus, the objective is to verify the primary variables of the mother and of the NB/premature infant that influence weaning during hospitalization or soon after hospital discharge, and to identify the factors in which intervention may enable its prevention.

## METHOD

This is a descriptive observation study of a series of cases at a tertiary level maternity hospital of the municipal public network. The institution is located in the peripheral region of the city of São Paulo.

Participating in the research were mothers and premature NB/infants seen at the outpatient clinic during the period from August 2006 to May 2007. The premature babies had been hospitalized in the High Risk Neonatal Unit, except for one case that had been rooming-in with the mother. All the NB/infants included in the study were examined by the researcher (SS) and had gestational age under 37 weeks, a birth weight of less than 2500g, and presented with partial or full weaning before the sixth month of life. The mothers included agreed with the terms of the research

project and signed the informed consent form. Excluded were NB/infants who had malformations and/or suspected genetic syndromes, neuropathies, mothers who were carriers of the human immunodeficiency virus (HIV), maternal disease that would preclude BF, maternal death, adoption, second twins, and those with insufficient data.

From August 2006 to May 2007, a total of 1231 premature infants were enrolled in the outpatient clinic, and 867 of them were seen by the researcher (SS). Due to the frequency of early weaning in premature babies<sup>8-9</sup>, it was estimated, considering the number of variables involved and of the frequency of partial and full weaning, that the sample should be composed of 60 children, with a minimum of 30 children. During the period of the study, only 32 children presented with full weaning. The mothers and their premature infants were selected randomly according to the order of outpatient clinic attendance, respecting the inclusion and exclusion criteria. There were 778 children eliminated in the selection who did not comply with the criteria. The final sample was composed of 89 premature babies divided into two groups. Group 1 had 81 children and Group 2 had 32, in which 24 had come from Group 1. The sample for Group 2 was formed after Group 1, due to the need to complete the minimum number of participants required for the study. Eight children from Group 2, therefore, were not included in Group 1, and presented at the first clinical visit in full weaning status. Variables of the mothers and children were obtained from the medical records and interviews with the mothers. The NB/infants who received maternal milk and milk supplementation bottles up to the sixth month were considered in partial weaning (Group 1) and those who interrupted BF and only received the bottle (Group 2) were considered in full weaning condition.

Maternal variables studied were demographic and socioeconomic data, obstetric

past history, immediate postnatal care, complications during the gestational and puerperal periods, and psychosocial aspects. Among the socioeconomic variables, family income, maternal and paternal schooling level, smoking habits, mothers' employment, and support were analyzed. Support was considered when there was a person who encouraged BF and/or helped out with household tasks. Among the psychosocial aspects, the maternal impression of having little milk, or of having weak milk, were analyzed, besides the fact of the NB/infant nursing with ease. This was considered when the mother reported that the baby nursed well, that it suckled the nipple and had adequate suction<sup>10,12,15-16</sup>.

Among the variables related to immediate postnatal care, the occurrence of mastitis, the practice of extracting breast milk during the time the infant was at hospital, stay in the "kangaroo" unit, and information on BF provided by the clinical staff were investigated<sup>10,12,15-16</sup>.

As to the NB/infant, demographic variables were analyzed, as well as those related to birth, hospitalization period and the post-hospital discharge period. Besides morbidity, days of use of oro/nasogastric tubes, orotracheal intubation, and days of hospital stay were analyzed. During this period, the use of the bottle was evaluated and this variable was only assessed in relation to full weaning. During the post-hospital discharge period, the age at which the pacifier was introduced, number of outpatient clinic visits, number of hospitalizations, age at introduction of the bottle (partial weaning) and age of interruption of BF (full weaning) were studied. Metabolic disorders were considered, including those of calcium and magnesium, hydroelectric imbalances, sodium, potassium and acid/base balance. The variables analyzed were selected based on criteria of frequency and classification usually described in literature<sup>10,12,15-16</sup>. The data collected were noted in Excel spreadsheets.

The statistical tests used for the analysis of the variables were Student's *t* test and Spearman's correlation ( $r_s$ ). A significance level of 5% was adopted.

The present study was approved by the Research Ethics Committee of the institution where the project was conducted (Document 02/2006).

**Table 1:** Newborn/infant characteristics in Groups 1 and 2

	N	Média	Desvio Padrão	Mediana
<b>Group 1</b>				
Partial weaning (months)	81	1,41	1,09	..
Maternal age	81	26,58	7,11	..
Family wages	76	778,88	520,01	..
Maternal schooling level	81	8,01	2,81	..
Paternal schooling level	79	7,52	3,35	..
Birth weight (grams)	81	1.590,74	432,07	..
Gestational age (weeks)	81	..	..	33,0
<b>Group 2</b>				
Full weaning (months)	32	2,93	1,54	..
Maternal age	32	24,59	6,21	..
Family wages	28	921,43	705,82	..
Maternal schooling level	32	8,81	2,56	..
Paternal schooling level	31	7,45	2,78	..
Birth weight (grams)	32	1.542,97	429,34	..
Gestational age (weeks)	32	..	..	33,5

## RESULTS

As to partial weaning, the mean maternal age found was 26.58 years (SD  $\pm$  7.11) and the average family income was R\$ 778.88 (SD  $\pm$  520.01). As to maternal and paternal schooling level, the averages were 8.01 years (SD  $\pm$  2.81) and 7.52 (SD  $\pm$  3.35) years, respectively (Table 1). Regarding NB/infants, the sample was made up of 43 female and 38

male NB/infants, corresponding to 53.1% and 46.9%, respectively. Weight at birth varied from 750g to 2490g, with a mean of 1590.74g (SD ± 432.07). Gestational age varied between 26 and 36.8 weeks with a median of 33.0 weeks (Table 1). The one-minute Apgar was between one and nine, with a median value of 8.0, and at five minutes, the score varied between six and ten, with a median of 9.0.

The correlation test among the quantitative maternal variables and partial weaning showed no statistically significant results. As to qualitative maternal variables,

there were significant results for breast milk extraction ( $t = 2.843, p = 0.007$ ), impression of having little milk ( $t = 2.405, p = 0,022$ ), and maternal work ( $t = 4.110, p = 0.001$ ). Mothers who extracted their breast milk and who initiated or returned to work introduced the bottle later. Mothers who had the impression that they had a small volume of milk introduced the bottle earlier (Table 2).

The quantitative variable related to the NB/infant showed a negative correlation between the weight at birth and partial weaning ( $r_s = - 0.524, p < 0.001$ ). The lower the birth

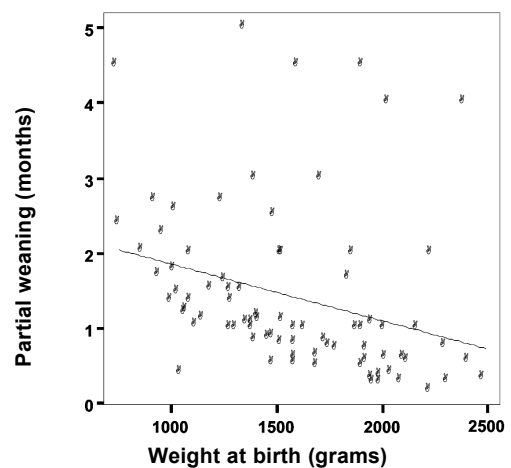
**Table 2:** Means of ages of partial weaning,  $t$  test, and significance level of the comparison between the two groups (Yes and No) of the qualitative maternal and newborn/infant variables of Group 1

Variables	Partial Weaning (months)				$t$	p
	mean	No stander desviation	Yes mean	stander desviation		
<b>Maternal</b>						
Milk extraction	0,92	0,45	1,46	1,11	2,843	0,007 (*)
Low milk volume	1,83	1,33	1,14	0,80	2,405	0,022 (*)
Maternal work	1,08	0,62	2,75	1,48	4,110	0,001 (*)
<b>Newborns/nursing infants</b>						
Apnea	1,26	1,09	2,11	0,82	2,739	0,008 (*)
Intracranial hemorrhage	1,32	1,06	2,39	1,03	2,554	0,013 (*)
Pulmonary bronchodysplasia	1,30	1,08	1,98	1,00	1,998	0,049

(\*) significant,  $p < 5$

weight, the later the bottle was introduced. The same type of correlation was found for the gestational age ( $r_s = - 0.454, p < 0.001$ ). The lower the gestational age, the later the introduction of the bottle. There was a positive correlation between partial weaning and days of orotracheal intubation ( $r_s = 0.421, p < 0.001$ ), days of use of orogastric tubing ( $r_s = 0.430, p < 0.001$ ), and days of hospital stay ( $r_s = 0.528, p < 0.001$ ). The greater the value of these variables, the later the introduction of the bottle. There was a positive correlation between partial weaning, age at introduction of the pacifier ( $r_s = 0.653, p < 0.001$ ), and the number of visits to the outpatient clinic ( $r_s = 0.397, p < 0.001$ ). The later the pacifier was introduced, and the greater the number of outpatient clinic

**Figure 1** – Scatterplot of partial weaning and birth weight, with the respective regression line ( $Y = 2.609 - 0.001 \times \text{birth weight}; p = 0.007; r^2 = 0.09$ )



**Table 3:** Spearman correlation coefficients among weaning (in months) and the quantitative variables of newborns/infants of Groups 1 and 2

Variables of the newborns/infants	N	Correlation coefficient (r <sub>s</sub> )	p
<b>Group 1</b>			
Weight at birth (grams)	81	- 0,524	0,000 (*)
Gestational age (weeks)	81	- 0,454	0,000 (*)
Orotacheal intubation (days)	81	0,421	0,000 (*)
Orogastic tube (days)	81	0,430	0,000 (*)
Hospital stay (days)	81	0,528	0,000 (*)
Number of outpatient clinical visits	80	0,397	0,000 (*)
Age at introduction of passifier (months)	69	0,653	0,000 (*)
<b>Group 2</b>			
Weight at birth (grams)	32	- 0,536	0,002 (*)
Age at introduction of passifier	24	0,470	0,020 (*)

(\*): significative, p < 0,05

visits, the later the introduction of the bottle. The correlation between birth weight and age at partial weaning may be observed in Figure 1 that shows the corresponding graph with the respective regression line. The results described may be verified on Table 3.

As to the qualitative variables related to the NB/infant, apnea ( $t = 2.739$ ,  $p = 0.008$ ), intracranial hemorrhage ( $t = 2.554$ ,  $p = 0.013$ ), and pulmonary bronchodysplasia ( $t = 1.998$ ,  $p = 0.049$ ), showed significant differences. Partial weaning occurred later in those who presented with the above mentioned characteristics. (Table 2)

As to full weaning, the mean maternal age was 24.59 years (SD ± 6.21) and the average family wage was R\$ 921.43 (SD ± 705.82). For maternal and paternal schooling level, we found 8.81 years (SD ± 2.56) and 7.45 (SD ± 2.78) years, respectively (Table 1). Fifteen NB/infants were females, and 17 were males, representing 46.9% and 53.1%, respectively. Weight at birth varied from 750 grams to 2245 grams, with an average of 1542.97 grams (SD ± 429.34). Gestational age varied between 26.0 and 36.50 weeks, with a median of 33.5 weeks (Table 1). The one-minute Apgar varied from one to nine, with a median value of 7.0. For the five-minute Apgar, values between six and ten were found, with a median of 9.0.

Maternal variables that showed significant results were stay in the “kangaroo” unit ( $t = 2.211$ ,  $p = 0.035$ ), maternal work ( $t = 3.008$ ,  $p = 0.005$ ), and support ( $t = 2.509$ ,  $p = 0.018$ ). Mothers hospitalized in this ward and

**Table 4:** Means of age of total weaning, t test, and significance level of the comparison between the two groups (Yes and No) of the qualitative maternal and newborn/nursing infant variables of Group 2

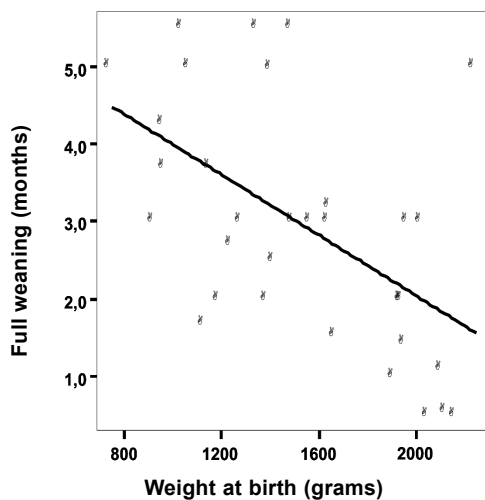
Maternal Variables	Full Weaning (months)				t	p
	mean	No stander desviation	mean	Yes stander desviation		
Hospital stay in “kangaroo” ward	2,69	1,48	4,25	1,25	2,211	0,035 (*)
Maternal work	2,58	1,38	4,35	1,31	3,008	0,005 (*)
Support	3,52	1,46	2,21	1,41	2,509	0,018 (*)

(\*) p significativo, p > 5

those who initiated or returned to work weaned their babies at a later phase. Those who reported having received support fully weaned their babies earlier. (Table 4)

Of the variables related to the NB/infant, we found significant results for birth weight ( $r_s = -0.536$ ,  $p = 0.002$ ) and use of the pacifier ( $r_s = 0.470$ ,  $p = 0.020$ ). The lower the weight

**Figura 2:** Scatterplot do desmame total e peso ao nascer, com a respectiva reta de regressão ( $Y = 5,95 - 0,002 \times \text{peso nascer}$ ;  $p = 0,001$ ;  $r^2 = 0,54$ ).



at birth and the greater the age at the introduction of the pacifier, the later the full weaning (Table 3). The correlation between birth weight and full weaning may be observed in Figure 2. The other variables did not produce significant results.

## DISCUSSION

### Partial weaning (Group 1)

In the present study, the maternal quantitative variables studied showed no significant differences, as per what is found in literature.<sup>11,17</sup>

Among the maternal qualitative variables in the present study, the practice of extracting breast milk postponed the introduction of the bottle, probably because of the greater volume of milk produced. The removal of milk by extraction allows maintenance of lactation even in mothers whose premature newborns are not able to be breastfed during the first two weeks after birth, and it influences the volume produced in the weeks following birth<sup>18-19</sup>.

The impression of little milk is recorded in literature as one of the main causes for the introduction of the bottle or for the interruption of BF in full-term or premature NBs. In the majority of cases it was attributed to subjective impressions, to lack of maternal information, or interpreted as a reflection of hygiene concepts on BF.<sup>20-21</sup> On the other hand, research showed that mothers of premature infants have a 2.81-fold higher risk of inadequate milk production and the maternal perception of scarce milk was associated to a smaller production.<sup>18-19</sup> The present study also demonstrated that the maternal impression of little milk led to earlier partial weaning, and one cannot exclude that it may also be due to an effective decrease in volume of milk produced<sup>15,18-19</sup>.

As to maternal work, most studies showed a greater risk of interruption of EBF.<sup>22-24</sup> The results of the present study demonstrate that working mothers nursed for a longer period of time and introduced the bottle at a later phase. It must be pointed out that no information was collected on the occasion of initiation, type of work done, and daily hours of work. Even in formal workers, flexible hours afforded a greater period of BF.<sup>24</sup> Another factor is that most of the studies on maternal work were conducted including children receiving EBF and the present study excluded them. Nevertheless, the data obtained suggested that working mothers made an effort to prolong breastfeeding, perhaps due to concerns with the health of their premature children.<sup>25</sup>

Of the characteristics related to the NB/infant, weight at birth and gestational age were analyzed by researchers, and no significant results were found.<sup>8,17</sup> In the present study, there was a negative correlation between weight and gestational age, and partial weaning. Thus, the lower the birth weight and gestational age, the later the introduction of the bottle. These results may have been influenced by later initiation of oral feeding due to related morbidity or concern with the infant's health and weight gain, a factor highlighted by Javorsky.<sup>25</sup>

The time of intubation and the use of an orogastric tube have not been analyzed separately, but they are indirectly related to neonatal morbidity.<sup>8,16</sup> In the present study, these factors were researched separately and it was found that the greater the time of intubation and of orogastric tube use, the later the introduction of the bottle. These results were probably also influenced by weight at birth and gestational age, and later partial weaning, corroborating the data obtained for these variables in the present study.

The number of days of hospitalization has been considered a barrier to implementation of BF, but it may be inferred that this circumstance will modify the feeding practices of these children and influence weaning, whether it be partial or full.<sup>8,15</sup> In the present study, we found a result that disagrees with that of literature as to hospital stay. The longer the period of hospitalization, the later the introduction of the bottle. One of the hypotheses for the results found may be related to application of the "kangaroo" methodology, affording participation of the mother and the family in recovery of their premature infant.<sup>4</sup> This hypothesis is corroborated by literature that report greater frequencies of EBF in premature infants who had participated in this methodology.<sup>22</sup> Additionally, in premature NBs who participated in this study and remained at hospital for longer periods, speech therapy accompaniment was conducted at every

feeding, resulting in individualized actions and constituting an opportunity for explanations and support to these mothers.<sup>4,7,26</sup> The data found demonstrated the importance of adequate institutional policies and of the action of the multidisciplinary team during the difficult transition period from enteral feeding to the maternal breast.<sup>4,7</sup>

The effects of the use of pacifiers were investigated by various authors, and the majority of studies indicated that the pacifier was a factor involved in the process of partial or full weaning.<sup>13,17,23,27</sup> In the present study, this variable was analyzed and it was demonstrated that the later the pacifier was introduced, the later the bottle was introduced. Since it is a deeply rooted cultural habit in the various groups studied, appropriate orientation is necessary to mothers and family members as to its use and the negative effects on BF.<sup>27</sup>

The importance of outpatient clinic follow-up after hospital discharge was demonstrated by some studies that analyzed the frequencies of BF and the incidence of partial weaning when this follow-up was made.<sup>9,22</sup> The data from the present study agree with those of literature and show the importance of the healthcare team and of continuity in supporting these mothers after hospital discharge.<sup>9,22</sup> The influence of neonatal morbidity on weaning was addressed in relation to full weaning and did not produce significant results.<sup>8,16</sup> In the present study, morbidity was analyzed in relation to partial weaning and significant results were found for bronchodysplasia, apnea, and intracranial hemorrhage. Therefore, in NB/infants who present with these clinical conditions, the introduction of the bottle occurred later. These data may have been influenced by the later introduction of enteral feeding, but they were probably related to the effects of weight and gestational age, which when lower, postponed the introduction of the bottle.



Some studies demonstrated an increase in frequency of breastfeeding for mothers who receive some type of support, whether during the prenatal, hospitalization, or post-hospitalization period.<sup>4,5</sup> In the present study, the support was investigated in relation to the period after hospital discharge, and mothers who received “support”, as understood by the mother’s interpretation, weaned their babies earlier. This leads to the reflection that these mothers could be in inadequate social and familial environments for contention and help with their difficulties.<sup>20</sup>

### Full Weaning – Group 2

The literature highlighted the benefits of the “kangaroo” methodology as to the duration of BF.<sup>4</sup> In the present study, mothers who stayed at the same hospital room as their premature infants and participated in the “kangaroo” method, interrupted BF later. These results are in agreement with the literature and demonstrate the importance of the method for this group of children.<sup>4,22</sup>

As to maternal work, similar to what we noted for partial weaning and different from what is reported in the literature, in the present study, mothers who work interrupted BF later than those who do not work. Despite not having investigated the type of work they did, the result stands out and as it is described, may signify a greater effort of these mothers related to a concern with the health of their premature children.<sup>25</sup>

As to weight at birth, data in the literature demonstrated that birth weight did not increase the risk for interrupting BF more than what is expected for prematurity.<sup>8,16</sup> In the present study, birth weight showed a negative correlation with full weaning. The lower the weight at birth, the later the weaning. This characteristic suggests that mothers of smaller premature infants attempt to overcome difficulties and prolong the BF for a longer period.<sup>25</sup>

The studies conducted furnish strong evidence on the influence of the pacifier in partial and full weaning processes<sup>17,23,27</sup>. The present study analyzed the occasion of introducing the pacifier after hospital discharge and verified that the later the introduction of the pacifier, the later the interruption of BF, as happened with partial weaning. Besides the need for use of a pacifier to stimulate non-nutritional suction in these children,<sup>28</sup> or as a protective factor against the sudden crib death that has been the focus of concern on the part of the scientific community,<sup>29</sup> the healthcare team should take into consideration the risk of weaning implied by the use of pacifier.

The results of the present study point towards the tendency of these mothers to maintain BF for a longer period due to concern with the health and recovery of their children.<sup>25</sup> Knowledge of this maternal preoccupation with premature infants at greater risk may be of fundamental importance for the healthcare team as to incentives to and support of BF in these children.

In this way, the practice of extraction of breast milk postponed the occasion for the introduction of the bottle; maternal work influenced the occasion for full and partial weaning. Working mothers introduced the bottle at a later stage and breastfed their infants for longer periods; the maternal impression of insufficient milk contributed to earlier introduction of the bottle; those who received support from family members or friends opted for full weaning at an earlier stage; as to stay in the “kangaroo” ward, full weaning occurred later in mothers who participated in the methodology; the lower weight at birth was related to partial and full weaning, and both occurred at a later phase in NB/infants who had lower birth weights; the use of the pacifier was related to partial and full weaning and the results furnish evidence as to the influence of this habit in weaning these children.

Thus, it was evident in this study that there are factors that can be controlled by the

healthcare team, which may influence towards avoiding early weaning in premature infants (practice of breast milk extraction, participation in the “kangaroo” methodology, and orientation as to the non-use of pacifiers) as well as factors that cannot be controlled by the healthcare team (birth weight and maternal work); however, knowledge of these

factors is important in order to provide data to the team for instructing and encouraging mothers to maintain BF.

One limiting aspect of the present study refers to the data on the occasion of weaning, which might have suffered influence of maternal memory, since the pattern of feeding in the previous 24 hours was not used.

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