

EVALUATION OF OROFACIAL CHARACTERISTICS AND BREASTFEEDING IN PRETERM NEWBORNS BEFORE HOSPITAL DISCHARGE

Avaliação das características orofaciais e da amamentação de recém-nascidos prematuros antes da alta hospitalar

Carla Thamires Rodriguez Castelli⁽¹⁾, Sheila Tamanini de Almeida ⁽¹⁾

ABSTRACT

Purpose: to evaluate the oral characteristics and breastfeeding premature newborns before hospital discharge and verify the relationship between the oral sensory system motor and breastfeeding. **Methods:** this was a cross-sectional, quantitative and descriptive study. Data collection was conducted from June to October 2014 was carried out in three stages research: Data search in medical records, clinical assessment of oral sensory motor system and the evaluation of breastfeeding. Obtained a convenience sample in an intensive care unit of a teaching hospital in Porto Alegre. The inclusion criteria were: prematurity; receiving speech therapy, being in the hospital discharge process; be indicated for exclusive breastfeeding; have signed the informed consent and informed by the head of prematurity. **Results:** the sample consisted of 26 subjects, then 6 individuals were excluded. Most of the oral sensory motor system features of premature was adequate and most of the categories evaluated in breastfeeding was close to the maximum score. It was found that premature infants with state of consciousness alert showed better position mother / newborn during breastfeeding ($p = 0.043$). It was observed that the higher the corrected gestational age better the final score of the infant in evaluation of oral sensory motor system ($r_s = 0.512$, $p = 0.021$). **Conclusions:** elucidated up information oral sensory motor system and breast-feeding premature. As well, relationships were found between the oral sensory system motor and breastfeeding premature.

KEYWORDS: Breast Feeding; Infant, Premature; Speech, Language and Hearing Science

■ INTRODUCTION

According to the World Health Organization, premature is defined as any live newborn (NB) with a gestational period less than 37 completed weeks, counted from the first day of the last menstrual period¹. Premature newborn babies (PN) have an increased risk of morbidity due to the anatomical and functional immaturity of their systems, which are not yet ready to support life in an extra uterine environment^{2,3}. The brain immaturity of a preterm infant may as a result cause limitations during feeding such as: difficulty maintaining alertness, predominant

extensor posturing and missing or incomplete oral reflexes^{4,5}. In addition, difficulties may occur in carrying out oral motor skills such as: lingual mobility alterations, exaggerated jaw opening, insufficient lip closure and reduction of fat deposits in the cheeks. These alterations affect remaining sucking strength and therefore result in a loss of rhythm and necessary force to effectively breastfeed⁶. These characteristics complicate oral feeding in the first moments of life.

Similarly, when the PN has an initial difficulty in the feeding process future impairments in overall development may occur⁷. However, these initial difficulties can be reversed so as to promote a positive relationship between the PN, the environment and breastfeeding⁸. Breastfeeding ensures survival, growth and

⁽¹⁾ Universidade Federal de Ciências da Saúde de Porto Alegre, Porto Alegre, RS, Brasil.

Conflict of interest: non-existent

appropriate development⁹. Thus, Breastfeeding (BF) is a natural, physiological and safe form of nutrition for infants. Moreover, BF adequately stimulates orofacial sensory and motor systems, because the sucking involved in milk extraction requires muscle force, which increases muscle tone, stimulating speech, breathing, swallowing and development of oral structures¹⁰.

However, for the PN to adequately breastfeed, it is necessary that orofacial sensorimotor system characteristics are suitable. While these are not fully developed the PN requires other nutritional pathways. This process requires that the professional have knowledge of both BF as well as alternative feeding techniques (parenteral, catheters, gastrostomy). In addition, he/she must know how to evaluate and diagnose changes in the orofacial motor function to promote proper nutrition conditions, as soon as clinically possible¹¹⁻¹⁴.

This research aims to evaluate orofacial characteristics and breastfeeding in preterm infants before hospital discharge and verify possible relations between the newborn orofacial sensorimotor system and breastfeeding.

■ METHODS

The research conducted was designed as a cross-sectional, quantitative and descriptive study. Data collection was conducted from June 2014 to October 2014. Parents or legal guardians were required to sign a Patient Consent form for research on human beings - (Resolution No. 466/2012 - National Council of health - CNS). This study was approved by the Ethics Committee of Irmandade Santa Casa de Misericórdia Hospital ISCMPA, protocol number CAAE: 26956814.5.0000.5335.

The sample was selected by the non-accidental probabilistic sampling method or by convenience in the intensive care unit of a university hospital in Porto Alegre. The inclusion criteria were: prematurity (gestational age <37 weeks); to have received speech therapy, in the process of hospital discharge; recommendation of exclusive breastfeeding; have a free and informed consent form signed by a legal guardian. Exclusion criteria: peri-intraventricular hemorrhage grade I, II, III and IV; Apgar score less than 7 at 5 minutes; genetic syndromes; congenital malformations of the head, neck or central nervous system, heart disease or meningitis (alteration in the cerebrospinal fluid examination).

The research consisted of three steps, with all three being conducted by the same examiner, in the first stage: hospital records were evaluated when the PN was between 24h-48h of discharge and the informed consent by the legal guardian of the

PN was obtained. In the second stage, there was clinical assessment to characterize the orofacial sensori-motor system of the PN, using the premature readiness protocol for oral administration⁷. Finally, in the third stage, the evaluation protocol was applied for Breastfeeding preterm infants⁶.

The premature infant readiness protocol for oral administration is divided into the following categories: corrected age, state of behavioral organization, oral posture, reflexes and oral non-nutritive sucking. Each category consists of items with performance variations between scores of 0 (zero) and 2 (two), with the total score of 0 to 36. Infant alertness, state of behavioral organization regarding global posture and overall tone were observed, while oral posture (lip and tongue posture) and oral reflexes (rooting reflex, sucking reflex, biting reflex and the gag reflex) were tested. To conclude, non-nutritive sucking was evaluated for one minute using a gloved little finger. This evaluation assessed tongue and jaw movement, tongue cupping, sucking strength, number of sucks per pause, sucking rhythm and ability to maintain alertness. During testing of non-nutritive sucking, the presence or absence of the following signs of stress was noted: accumulation of saliva, beating of nasal wings, change in skin color, apnea, tone variation, posture change, labored breathing, tongue or jaw tremors, hiccups or crying^{8,15}. After the application of the Protocol, the total score was calculated.

After the evaluation or during the first feeding after evaluation, the protocol for assessment of preterm infant Breastfeeding was applied⁶. The evaluation consisted of the following categories: I. aspects related to breasts (anatomy, ejection signals, engorgement, trauma and pain); II. Baby rooting reflex; III Signs of mother/ newborn dyad (signs of autonomy, state of consciousness, handling of the newborn, attention to newborn facial expressions, mother's physical touch of the newborn); IV. mother / newborn position during breastfeeding (mother's level of comfort, handling of the breast, distance between the hand and the areola, pressure in the milk ducts, the position of the newborn, head / neck of the newborn, nose of the newborn); V. nipple gripping (the newborn's chin, mouth, lip seal, the marking of the areola); VI. ability to breastfeed (jaw movement, cheeks, sucking rhythm, pattern of sucking / swallowing / breathing) and VII Final phase of feeding: (technique of removing nipple from newborn's mouth, nipple conditions, breast conditions, newborn behavior at the end of breastfeeding). Each answer from each category was given the following scores: 2 – seen as appropriate, 1- intermediate conditions and 0- inadequate conditions.

The research was analyzed using a quantitative and descriptive approach. The data collected from medical records and the application of research protocols was compiled in a database and formatted into an Excel spreadsheet (Microsoft), the variables were then analyzed using SPSS 22 software. To facilitate sample characterization, data was presented for categorical or ordinal variables in frequency or percentage and continuous variables were presented with mean and standard deviation or median and interquartile range, depending on the normality of the variables verified by the Shapiro-Wilk test. The Mann-Whitney test was performed to analyze comparisons while the Spearman correlation test was used for correlating variables. A significance level of 5% (p-value <0.05) was adopted for this study.

■ RESULTS

Total study sample consisted of 26 preterm infants. Six (6) were excluded after medical records review, due to neurological impairments. The data of the characterization of the 20 PN is shown in Table 1.

Other global characteristics were verified by absolute frequency. Most newborns were male

(70%), with nutritional assessment presented below the 3rd percentile (65%) and delivery by C-section (100%); while in relation to the mothers most were in their first pregnancy (70%) had not previously breastfed (70%), made donations in the milk bank (90%), donated milk at least once a day (50%), received prenatal care (100%) received information on breastfeeding in hospital (100%) and intended to continue breastfeeding (100%).

The characteristics evaluated in the oral feeding readiness protocol for preterm infants are shown in Table 2. The assessment of breastfeeding characteristics was accomplished through the comparison of score averages with the total score of each category ($x \pm SD$): in aspects related to breast, an average of 7.9 (± 1.4) out of 10 points was observed; in baby rooting reflex, there was an average of 1.9 (± 0.4) out of 2 points; in signs of mother-child dyad an average of 8.8 (± 0.9) points of 10 was obtained; mother/newborn position during breastfeeding, an average of 13 (± 2.8) points of 16 was seen; nipple gripping, was observed at 7.4 (± 1.1) out of 8 points; for ability to breastfeed, an average score of 7.4 (± 0.6) out of 8 points was obtained; and in the final phase of breastfeeding an average of 6.6 (± 1.4) of 8 points was observed.

Table 1 – Global characteristics of premature newborns and mothers

Variables (n= 20)	Average	Standard Deviation
Gestational age (weeks)	32,3	16,39
Corrected gestational age (weeks)	38,12	19,01
1st minute Apgar	7,60	1,50
Apgar 5 minutes	8,60	0,94
Birth weight (grams)	1452,25	462,56
Weight at discharge (grams)	2075,25	86,75
Mother's age (years)	25,75	19,00
Education (years)	9,85	2,06
Number of prenatal care consultations	6,45	2,04
No. of donations to the milk bank per day	1,45	0,94
Speech therapy care in hospital	10,00	4,17

Table 2 – Global and orofacial characteristics of preterm infants

Variables	Preterm infants (n= 20) n (%)
State of consciousness	
alert	9(45%)
Drowsy	10(50%)
Sleep	1(5%)
Global posture	
Flexed	7(35%)
Semi-flexed	13(65%)
extended	--
Global tone	
Normotonia	20(100%)
hypertonia	--
hypotonia	--
Lip posture	
Closed	20(100%)
Half opened	--
Open	--
Tongue posture	
flat	11(55%)
Elevated	9(45%)
Retracted / protruded	--
Rooting reflex	
present	16(80%)
weak	3(15%)
absent	1(5%)
Sucking reflex	
Present	20(100%)
weak	--
absent	--
Biting Reflex	
Present	20(100%)
Exacerbated	--
absent	--
Gag reflex	
Present	19(95%)
Present in anterior	--
absent	1(5%)
Tongue movement on Nonnutritive sucking	
Adequate	18(90%)
Altered	2(10%)
absent	--
Tongue cupping on Nonnutritive sucking	
Present	17(85%)
absent	3(15%)
Jaw Movement on Nonnutritive sucking	
Adequate	20(100%)
Altered	--
absent	--
Sucking force on Nonnutritive sucking	
Strong	18(90%)
weak	2(10%)
absent	--
Number of sucks per pause on Nonnutritive sucking	
5 to 8	13(65%)
> 8	7(35%)
< 5	--
Rhythm maintenance on Nonnutritive sucking	
rhythmic	13(65%)
arrhythmic	7(35%)
Maintained alert state of consciousness	
Yes	9(45%)
Partial	11(55%)
No	--
Stress Signs	
Absent	14(70%)
up to 3	6(30%)
< 3	--

By analyzing the variables of the premature readiness protocol for oral administration⁶ together with the categories of the Breastfeeding evaluation protocol for preterm infants¹⁰ it was noted that the PN with alert states of consciousness had higher scores in the mother /newborn position during breastfeeding evaluation than PNs in a mild sleepy state ($p = 0.043$). Premature newborns with the features: tongue in planar rest position ($p = 0.054$), strong sucking ($p = 0.055$), adequate tongue movement ($p = 0.055$), were seen to have higher average scores in the ability to breastfeed category. However, a larger sample size is needed to confirm the findings (Table 3).

The corrected gestational age (in days) correlated with the final score of the PN in the oral administration readiness protocol and it was observed that the higher corrected gestational age the better the final performance score ($r_s = 0.512$; $p = 0.021$) (Figure 1). Additionally the corrected age (in days) was shown to have a positive correlation with the categorical score of preterm infants in the breastfeeding assessment protocol; however this relationship was not statistically significant.

DISCUSSION

The success of breastfeeding (BF) depends on several factors related to preterm infants, postpartum and the routine of the mother /newborn. It is important that mother in the days after childbirth receive support and guidance on BF, in order to feel secure and capable of breastfeeding their baby who in their view is still very fragile¹⁶⁻²⁰.

To facilitate this early support, the Ministry of Health recommends at least six prenatal consultations, since it is during this period that pregnant women should be made aware of the importance of BF²¹. In this study, the average number of visits was 6.45 ± 2.04 , and moreover all mothers were instructed to breastfeeding during their child's hospitalization and all intended to continue breastfeeding after hospital discharge. This outcome can be related to the "Baby Friendly Hospital" policy, implemented in the unit where the study was conducted, where all professionals are trained to encourage breastfeeding²². These findings are similar to a study conducted in the same neonatal intensive care unit, which found an average of 6.4 ± 2.4 prenatal consultations and also most of the mothers were oriented and encouraged by professionals to BF (96.2%)²³.

In addition, in this study, all preterm infants received speech therapy during hospitalization with an average $10.0 (\pm 4.17)$ daily visits. Studies have shown that speech therapy can detect the initial

Table 3 – Comparison between the variables of the readiness assessment protocol for oral administration and variables of the evaluation protocol for breastfeeding of premature newborns Median [25%; 75%]

Variables of the readiness assessment protocol for oral administration		Categories of the evaluation protocol for breastfeeding						
		I	II	III	IV	V	VI	VII
State of Consciousness	Sleep	7,5 [6;9,2]	2	9	12,5	8	7	7 [5;7,75]
	Drowsy		[2;2]	[8;9,2]	[9,7;14,2]	[7,7;8]	[7;8]	
	Alert	8	2	9 [8,5;10]	15	8	8	7
		[7;9]	[2;2]		[12;16]	[7;8]	[7;8]	[7;8]
	p-value *	0,588	1,000	0,229	0,043**	0,458	0,212	0,235
Tongue posture at rest	Elevated	8	2	9	13	8	7	7
	Retracted	[6;9]	[2;2]	[8;10]	[9,5;15,5]	[7;8]	[7;7,5]	[7;7,5]
	Flat	8	2	9	15	8	8	7
		[7;9]	[2,2]	[8;10]	[12;15]	[7;8]	[7;8]	[5,8]
	p-value *	0,938	0,366	0,634	0,316	1,000	0,054***	0,840
Tongue movements	Inadequate	8	2	8	12,50	8	6,50	7
		[6;8]	[2;2]	[7;8]	[12;12,5]	[8;8]	[6;6,5]	[7;7]
	Adequate	8	2	9	14,5	8	7,5	7
		[7;9]	[2;2]	[8;10]	[10;15,25]	[7;8]	[7;8]	[5;8]
	p-value *	0,949	0,739	0,263	0,443	0,349	0,055***	0,893
Sucking Force	Weak	8	2	8	12,50	8	6,50	7
		[6;8]	[2;2]	[7;8]	[12;12,5]	[8;8]	[6;6,5]	[7;7]
	Strong	8	2	9	14,5	8	7,5	7
		[7;9]	[2;2]	[8;10]	[10;15,2]	[7;8]	[7;8]	[5;8]
	p-value*	0,949	0,739	0,263	0,443	0,349	0,055***	0,893

(*) Test used: Mann-Whitney test

(**) Significant p-value; (***) Borderline p-value; I: aspects related to breast II: Baby rooting reflex; III: Signs of mother/ newborn dyad; IV: mother / newborn position during breastfeeding; V: nipple gripping; VI: ability to breastfeed; VII: Final phase of feeding.

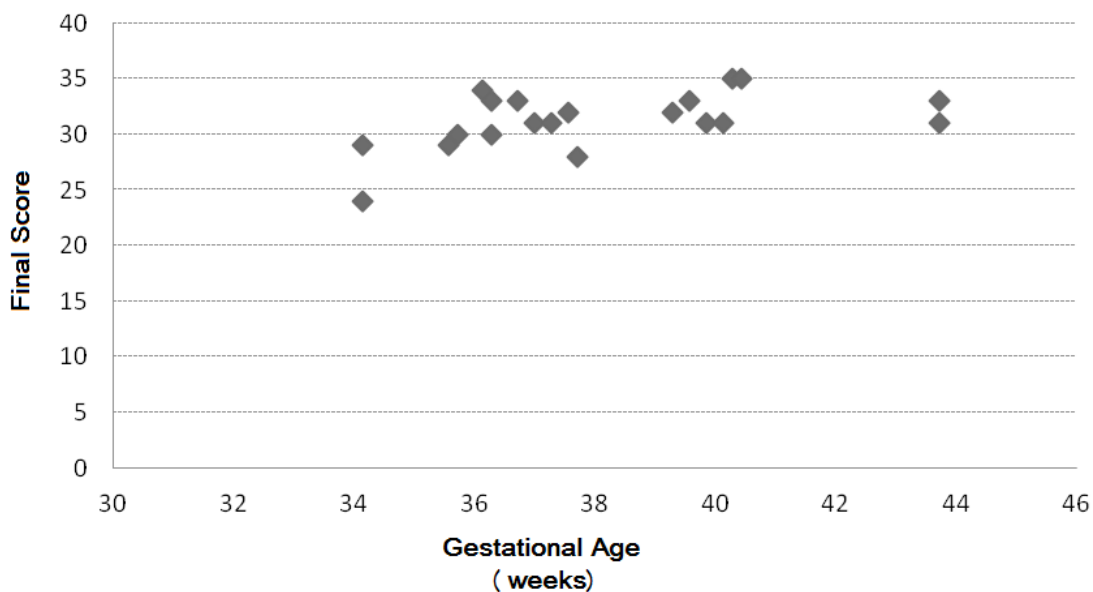


Figure 1 – Correlation between the final score of the readiness protocol for oral administration in preterm infants and corrected gestational age.

difficulties that threaten the feeding process and may alter the course of these problems^{10,24}. Thus, the participation of speech therapists in a multidisciplinary team may aid in the prevention of orofacial motor dysfunction and therefore contribute to safe feeding practices.

Speech therapy possibly had a positive influence on the performance of PN in this study^{25, 26}. In the evaluation of the orofacial sensori-motor system it was observed that preterm infants presented the majority of the characteristics adequately, similarly breastfeeding assessment found that the averages observed in each of the categories were close to the maximum score, except in the aspects related to mother/newborn position during breastfeeding.

Proper mother / infant positioning during breastfeeding is an essential factor for grip conditions, RN suction and BF duration to ensure that the baby has access to milk from the posterior regions of the breast (high in fat and energy)²⁴. This study identified that a PN in a state of alert awareness had higher a median score in the mother / newborn position during feeding category than a PN with mild sleep ($p = 0.043$). Studies indicate that newborns in improper position can expend energy excessively and consequently tire and fall asleep faster^{24,27-29}. Thus, proper positioning is critical to maintaining alertness during BF.

Another key to the success of BF is the handling of the breast by the newborn. It is important to assess oral reflexes, tongue movement during suction, jaw movement, coordination and rhythm of swallowing and breathing as well as the absence of participation of the buccinator muscle²⁴. This study showed a tendency toward better milking conditions when the tongue posture at rest was planar, tongue movement was adequate and the suction force was appropriate.

In relation to gestational age of preterm infants, one study found associations between gestational age at birth (extreme prematurity) and flaccidity of oral structures³⁰. Another study found more alterations in the orofacial sensory motor system development in infants with a gestational age less than or equal to 34 weeks, than in infants with gestational age of 35-36 weeks³¹. Similarly, another study observed a negative correlation between gestational age at birth and time of transition to oral

administration, showing that the more premature the newborn, the longer the time needed for the transition from alternative means of nutrition to oral feeding⁴. These findings are in agreement with the present study that observed the best scores in the evaluation of the orofacial sensory motor system in newborns with higher corrected gestational ages. Close attention should be paid to the population of the extremely premature since this group will present more difficulties with the transition from alternative means of nutrition to oral feeding, principally difficulties related to the orofacial motor system³²⁻³⁵.

■ CONCLUSION

In summary after the presentation and analysis of the results we can concluded that this study demonstrated that the majority of the characteristics of the orofacial sensori-motor system in preterm infants were adequate and most of the categories assessed during breastfeeding received close to a maximum score, except the aspects related mother/newborn positioning during breastfeeding. In addition, it was found that premature newborns with an alert state of consciousness showed better positioning during breastfeeding than PN in a mild somnolent state. The best scores in the evaluation of the orofacial sensory motor system were associated with higher corrected gestational ages. Additionally, the sample showed a tendency to have better BF conditions when the tongue posture was at rest and when tongue movement and suction force in non-nutritive sucking were appropriate.

Therefore it can be said that this study has elucidated some of the practical implications of breastfeeding, however it should be noted that the study had some limiting factors such as reduced sample size and possible selection bias, due to the convenience sample used.

Speech therapists must be inserted into the multiprofessional teams, due to their expertise in the evaluation of the orofacial sensori-motor system and breastfeeding. Moreover, they can greatly contribute to this team, pointing out the specific challenges of preterm infants, favoring the transition to oral administration and encouraging early breastfeeding.

RESUMO

Objetivo: avaliar as características orofaciais e a amamentação de recém-nascidos prematuros antes da alta hospitalar e verificar possíveis relações entre o sistema sensorio motor orofacial e a amamentação. **Métodos:** trata-se de um estudo transversal, quantitativo e descritivo. A coleta de dados foi realizada no período de junho a outubro de 2014. Realizou-se em três etapas a pesquisa: busca de dados no prontuário, aplicação do protocolo de prontidão do prematuro para início da alimentação oral e aplicação do protocolo de avaliação da mamada em recém nascidos prematuros. Obteve-se uma amostra de conveniência em uma unidade de terapia intensiva de um hospital escola de Porto Alegre. Foram considerados critérios de inclusão: prematuridade; ter recebido atendimento fonoaudiológico, estar de alta hospitalar; indicação para aleitamento materno exclusivo; assinatura do termo de consentimento livre e esclarecido pelo responsável. **Resultados:** a amostra contou com 26 sujeitos, posteriormente 6 indivíduos foram excluídos. A maioria das características do sistema sensorio motor orofacial dos prematuros estava adequada e a maior parte das categorias avaliadas na amamentação estava próxima ao escore máximo. Identificou-se que os prematuros com estado de consciência alerta apresentaram melhor posição mãe/recém-nascido durante o aleitamento materno ($p= 0,043$). Observou-se que quanto maior a idade gestacional corrigida melhor o escore final do prematuro na avaliação do sistema sensorio motor orofacial ($r_s = 0,512$; $p= 0,021$). **Conclusões:** elucidaram-se informações do sistema sensorio motor orofacial e do aleitamento materno do prematuro. Bem como, foram encontradas relações entre o sistema sensorio motor orofacial e a amamentação do prematuro.

DESCRITORES: Aleitamento Materno; Prematuro; Fonoaudiologia

■ REFERENCES

1. Organização Mundial da Saúde. The incidence of low birth weight: A critical review of available information. *Wld Hlth Statis*. 1980;33:197-224.
2. Institute of Medicine (US) Committee on Understanding Premature Birth and Assuring Healthy Outcomes; Behrman RE, Butler AS. *Preterm Birth: Causes, Consequences, and Prevention*. Washington: National Academies Press; 2007.
3. Rodrigues G. *Sucção Nutritiva e Não-Nutritiva em Recém-Nascidos Pré-Termo: Ritmo e Taxa de Sucção [monografia]*. Santa Maria (RS): Universidade Federal de Santa Maria. Especialização em Distúrbios da Comunicação Humana; 2007.
4. Scochi CGS, Gauy JS, Fujinaga CI, Fonseca LMM, Zamberlan NE. Transição alimentar por via oral em prematuros de um Hospital Amigo da Criança. *Acta Paul Enferm*. 2010;23(4):540-5.
5. Andrade ISN, Guedes ZCF. Sucção do recém-nascido prematuro: comparação do método Mãe-Canguru com os cuidados tradicionais. *Rev Bras. Saude Mater. Infant*. 2005;5(1):61-9.
6. Melo AM. *Avaliação da mamada em recém-nascidos prematuros [dissertação]* Recife (PE): Universidade Federal de Pernambuco; 2008.
7. Fraga DFB, Pereira KR, Dornelles S, Olchik MR, Levy DS. Avaliação da deglutição em lactentes com cardiopatia congênita e síndrome de Down: estudo de casos. *Rev CEFAC*. 2015;17(1):277-85.
8. Fujinaga CI. *Prontidão do Prematuro para Início da Alimentação Oral: confiabilidade e validação clínica de um instrumento de avaliação [tese]*. Ribeirão Preto (SP): Universidade de São Paulo; 2005.
9. Organização Mundial da Saúde. *The optimal duration of exclusive breastfeeding*. Geneva: World Health Organization; 2002. Disponível em: http://whqlibdoc.who.int/hq/2001/WHO_NHD_01.08.pdf
10. Araújo CMT, Silva GAT, Coutinho SB. Aleitamento materno e uso de chupeta: repercussões na alimentação e no desenvolvimento do sistema sensorio motor oral. *Rev Paul Pediatr*. 2007;25(1):59-65.
11. Delgado SE, Halpern R. Amamentação de prematuros com menos de 1500 gramas: funcionamento motor-oral e apego. *Pró-Fono R Atual Cient*. 2005;17(2):141-52.
12. Lemes EF, Silva THMM, Correr AMA, Almeida EOC, Luchesi KF. Estimulação sensoriomotora intra e extra-oral em neonatos prematuros: revisão bibliográfica. *Rev CEFAC*. 2015;17(3):945-55.
13. White-Traut R, Pham T, Rankin K, Norr K, Shapiro N, Yoder J. *Exploring Factors Related to*

Oral Feeding Progression in Premature Infants. *Adv Neonatal Care*. 2013;13(4):288-94.

14. Medeiros AMC, Oliveira ARM, Fernandes AM, Guardachoni GAS, Aquino JPSP, Rubinick ML et al. Caracterização da técnica de transição da alimentação por sonda enteral para seio materno em recém-nascidos prematuros. *J. Soc. Bras. Fonoaudiol*. 2011;23(1):57-65.

15. Fujinaga CI, Moraes SA, Zamberlan-Amorim NE, Castral TC, Silva AA, Scochi CGS. Clinical validation of the Preterm Oral Feeding Readiness Assessment Scale. *Rev Latino-Am. Enfermagem*. 2013;21(spe):140-5.

16. Ericson J, Eriksson M, Hellström-Westas L, Hagberg L, Hoddinott P, Flacking R. The effectiveness of proactive telephone support provided to breastfeeding mothers of preterm infants: study protocol for a randomized controlled trial. *BMC Pediatrics*. 2013;13:73.

17. Vieira TO, Vieira GO, Giugliani ERJ, Mendes CM, Martins CC, Silva LR. Determinants of breastfeeding initiation within the first hour of life in a Brazilian population: cross-sectional study. *BMC Public Health*. 2010;10:760.

18. Villamizar CB, Vargas PC, Díaz MLA. El progreso de la alimentación oral del recién nacido prematuro. *Rev Univ. Ind. Santander. Salud*. 2010;42(3):262-70.

19. Roseiro, CP, Pereira PKM. Concepções de humanização de profissionais em Unidades de Terapia Intensiva Neonatal. *Estud. Psicol*. 2015;32(1):109-19.

20. Santana MCC, Goulart BNG, Chiari BM, Melo AM, Silva EHAA. Aleitamento materno em prematuros: atuação fonoaudiológica baseada nos pressupostos da educação para promoção da saúde. *Ciênc Saúde Colet*. 2010;15(2):411-7.

21. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Área Técnica de Saúde da Mulher. Pré-natal e Puerpério: atenção qualificada e humanizada - manual técnico. Brasília: Ministério da Saúde, 2005.

<http://dx.doi.org/10.1590/1982-021620151768415>

Received on: June 16, 2015

Accepted on: August 31, 2015

Mailing address:

Sheila T. Almeida

Rua Sarmiento Leite, 245

Porto Alegre – RS – Brasil

CEP: 90050-170

E-mail: sheilat@ufcspa.edu.br

22. Organização Mundial da Saúde. Proteção, Promoção e Apoio ao Aleitamento Materno: O Papel especial dos Serviços materno-infantis. Declaração Conjunta OMS / UNICEF. Genebra; 1989.

23. Scheeren B, Mengue APM, Devincenzi BS, Barbosa LR, Gomes E. Condições iniciais no aleitamento materno de recém-nascidos prematuros. *J Soc Bras Fonoaudiol*. 2012;24(3):199-204.

24. Sanches MTC. Manejo clínico das disfunções orais na amamentação. *J. Pediatr*. 2004;80(5 Supl):S155-62.

25. Calado DFB, Souza R. Intervenção fonoaudiológica em recém-nascido pré-termo: estimulação oromotora e sucção não-nutritiva. *Rev CEFAC*. 2012;14(1):176-81.

26. Moreira CMD, Cavalcante-Silva RPGV, Miyaki M, Fujinaga CI. Efeitos da estimulação da sucção não nutritiva com dedo enluvado na transição alimentar em recém-nascido prematuro de muito baixo peso. *Rev CEFAC*. 2014;16(4):1187-93.

27. Giugliani ERJ. O Aleitamento Materno na Prática Clínica. *J Pediatr*. 2000;76(Supl 3):S238-52.

28. Organização Mundial de Saúde. Aconselhamento em amamentação: um curso de treinamento. São Paulo: Instituto de Saúde/OMS/OPAS; 1995.

29. Sanches MTC. Dificuldades iniciais na amamentação [dissertação]. São Paulo (SP): Universidade de São Paulo. Faculdade de Saúde Pública; 2000.

30. Brusco TR, Delgado SE. Caracterização do desenvolvimento da alimentação de crianças nascidas pré-termo entre três e 12 meses. *Rev CEFAC*. 2014;16(3):917-28.

31. Castro AG, Lima MC, Aquino RR, Eickmann SH. Desenvolvimento do sistema sensorio motor oral e motor global em lactentes pré-termo. *Pró-Fono R Atual Cient*. 2007;19(1):29-38.

32. Buswell CA, Leslie P, Embleton ND, Drinnan MJ. Oral-motor dysfunction at 10 months corrected gestational age in infants born less than 37 weeks preterm. *Dysphagia*. 2009;24:20-5.

33. Sassá AH, Schmidt KT, Rodrigues BC, Ichisato SMT, Higarashi IH, Marcon SS. Bebês pré-termo: aleitamento materno e evolução ponderal. *Rev bras enferm*. 2014;67(4):594-600.

34. López CP, Chiari BM, Goulart AL, Furkim AM, Guedes ZCF. Assessment of swallowing in preterm newborns fed by bottle and cup. *CoDAS*. 2014;26(1):81-6.

35. Silva PK, Almeida ST. Avaliação de recém-nascidos prematuros durante a primeira oferta de seio materno em uma uti neonatal. *Rev CEFAC*. 2015;17(3):927-35.