

THE CUP OFFERED BY CAREGIVERS TO PREMATURE NEWBORNS IN HOSPITAL

O copinho oferecido pelos cuidadores aos recém-nascidos prematuros hospitalizados

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ABSTRACT

Purpose: to verify that the knowledge of the technical bid of the diet by the cup, having received training and working time influenced the attitude of the nursing technician, the posture of the newborn and the positioning of the cup. **Methods:** this was an observational, descriptive, transversal, attended by 15 professionals. Were observed nursing technicians, responsible for the administration of the diet of children at the time of the offering of milk by the cup, in the mother's absence. **Results:** only nine individuals were trained ($p = 0.273$) and 11 said they had no knowledge of the technique ($p = 0.011$). The offering of the diet was standing ($p = 0.001$), with the pouring of the milk into the mouth of the child ($p = 0.010$), being positioned with the occipital and cervical supported ($p = 0.001$). No association between knowledge of technique, receiving training, working time variables posture nursing technician, posture and positioning newborn cup. **Conclusion:** the posture of the power supply is held upright, no spill of diet in the oral cavity of the baby and no influence of the postures of the neonate, coach or cup on account of technical knowledge, conducting training and working time.

KEYWORDS: Infant, Newborn; Breast Feeding; Infant, Premature; Milk, Human; Feeding Methods

■ INTRODUCTION

Breast feeding is the best way to feed newborns, due to its nutritional, immunological and psychological advantages, contributing globally to child's health^{1,2}. The importance is even greater to preterm newborns^{1,3}, since it is essential to a proper motor-oral development and proper stomatognathic functions formation^{4,5}.

It is known that sucking is a reflex behavior susceptible to be intensified or modified by the experiences the newborn is exposed to⁶. Preterm newborns can spend many days hospitalized in intensive care units, often deprived from breast feeding and intimate contact with their mother. These babies frequently are not capable to suck milk right from mother's breast due to their reflex immaturity or their condition, which make their reflexes week¹.

To effective and safe feeding is necessary not only the sucking skills to be effective, but also to present coordination between breathing and swallowing, as well the functional interaction among lips, mandible, tongue, palate and pharynx. Nevertheless, this coordination may not be completely developed in these children, which leads to the use of gastric tube^{4,7,8}.

Mothers and professionals have been using different instruments to feed preterm or convalescent babies, such as droppers, spoons, mugs, cups, syringe and bottles⁹, although bottles always prevailed. Currently, due to the shape of bottle nipple and its rugose plastic material, difficult to clean¹⁰⁻¹², the mug or cup is most used for the transition gastric tube to oral via diet^{13,14}.

It is believed that using the cup prevent the baby's early contact to other nipples as a replacement for of the mother's¹⁵, avoiding confusion and facilitating the breast feeding establishment, feeding them in the absence of the mother or supplementing the breast feeding^{1,2,8,10,11,16}. It promotes to the preterm

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newborn a safe method of artificial feeding^{17,18} until they are ready to perform exclusive breast feeding.

The caregivers (health professionals or mothers) need to be guided in relation to the correct feeding using the cup technique. Orientations about handling the cup, milk volume and proper position of the baby to receive the diet are important and the success of the technique will depend on the information given to them¹⁹.

A study evaluated mothers handling the cup and analyzed the aspects that interfere on the technique. From a sample of 30 binomial mother/son, chart analysis and observation of mothers offering the diet in a cup, the results presented there is significant relation in baby's posture, cup position, milk volume and health professional's directions to mothers about using the cup. The authors conclude the cup can be handled by mothers, but they need direction about paying attention in cup position and milk volume¹⁹.

Therefore, this study aimed to verify if knowing the technique of offering the diet in a cup, receive training and the working time of caregivers had influence on technician posture, newborn posture and cup position.

■ METHODS

The research was submitted and approved by the Committee of Ethics in Research with Humans of the São Lucas School, under protocol number 262.865/2013.

It was an observational, descriptive and transversal study, developed in public neonatal unit that provide interventions to high risk pregnant women, considered as reference in the field.

The mothers and the nursing technicians were oriented about the procedures of the research. The mothers agreed with the participation of their son and the technicians agreed to participate by signing the Consent Form.

It was included technicians of the unit cited, who worked with preterm newborns specifically offering the diet. The newborns must necessarily receive diet oral via.

The neonatal unit has four infirmaries, total of 40 beds, divided according to the gravity of newborn's condition and the assistance required. The observation was performed in the infirmary attending low risk newborns and mothers – clinically stable, composed of 14 beds.

In this unit, the nursing technician attend most of the time the hospitalized newborn and are responsible for offering the diet at mother's absence. A total of 34 technicians are defined by scale. In the infirmary where the study was conducted, two technicians are responsible for the 14 beds during a 12-hour shift. However, not all the technicians attend all the infirmaries in the unit.

First, the sample defined 32 subjects to be observed in the unit, considering sample error of 5% and confidence level of 95%. Though, during the data collection only 18 technicians were defined to work in this unit and only 15 agreed in participate and signed the authorization.

In Table 1 is demonstrated the characteristics of technicians observed. The median of age was 40.3 years old, among 29 and 56, presenting low variability of the sample. Also, the median working time in the hospital was 10.7 years, ranging among 0.25 and 30 years, however, the analysis indicated a heterogenic sample concerning this aspect.

Table 1 – Descriptive data from the nursing technician that offered the diet

Nursing Technician Data	Mean	Median	Standard Deviation	CV	Q1	Q3	Min	Max	N	CI
Age	40.3	37	10.5	26%	31.5	50.5	29	56	15	5.3
Working time in the community	10.7	7	10.9	102%	3.0	15.0	0.25	30	15	5.5

Subtitle: CV = coefficient of variation; Q1 = first quartile; Q3 = third quartile; Min = minimum value; Max = maximum value; N = number of subjects; CI = confidence interval

The nine newborns that were offered the diet were in gestational age corrected of 34 weeks and median weight of 1.914 grams. It was observed homogeneity regarding corrected gestational

age, birth weight and weight during observation. Although, the neonates presented variability in relation to days old, time using gastric tube and time oral via diet (Table 2).

Table 2 – Descriptive data from newborns who received the diet offered by nursing technician

Data From Newborns Who Received The Diet	Mean	Median	Standard Deviation	CV	Q1	Q3	Min	Max	N	CI
Days old	16.1	14	7.4	46%	11	21	7	30	9	4.9
Gestational age (weeks)	34.3	34	1.1	3%	34	35	33	36	9	0.7
Birth weight (grams)	1.914	1.900	222	12%	1.800	1.980	1.575	2.400	9	145
Weight on the day of observation (grams)	1.902	1.875	138	7%	1.805	1.925	1.740	2.200	9	90
Time using gastric tube (days)	8.2	9	4.0	49%	5	11	2	14	9	2.6
Time of oral via (days)	7.9	7	7.5	95%	2	8	2	23	9	4.9

Subtitle: CV = coefficient of variation; Q1 = first quartile; Q3 = third quartile; Min = minimum value; Max = maximum value; N = number of subjects; CI = confidence interval

First, it was developed data collection from newborns' charts, in which: gestational age, birth weight, weight during data collection and the time getting feeding oral via. Next, the technicians were questioned about the time they work in the institution, about their previous knowledge about the technique and training.

The material used was adapted from the protocol of observing the diet¹⁹, composed by three parts: (1) newborns characteristics (birth date, correct gestational age, birth weight, current weight, time using gastric tube and time receiving diet oral via); (2) questions to the nursing technician responsible for offering the diet (age, working time, previous knowledge of the technique, training for executing the technique); and (3) observation of the moment of offering the technique (place of feeding, newborn's posture, technician posture, cup position).

The technician was only observed in the absence of the mother so the breast feeding was not discouraged.

After collecting data, it was developed the following analysis: relation among – the technique knowledge, training and working time- to technician posture, newborn posture and cup position.

It was defined for this study the statistical significance level of 0.05 and it was applied the Equality of Two Proportions Test, Chi-Square Test and Kruskal-Wallis Test.

■ RESULTS

After the observation of the 15 nursing technicians, it was verified that most of them, 11 subjects, declared do not know the technique, a significant

difference ($p=0.011$). Regarding the capacitating training to proper apply this technique, nine subjects received and six was not trained ($p=0.273$).

It was observed three aspects: (1) technician posture (whether the diet was offer sat down and aligned or standing); (2) cup position (placed on lower lip, milk touching lower lip, milk poured into oral cavity and leakage of milk during offer); and (3) newborn posture (inclined in 40° on technician's arms, inclined 40° on the crib and newborns' occipital and cervical regions supported).

The Equality of Two Proportions Test was applied to analyze the distribution to each of the three aspects cited above of the frequency relative of actions performed by subjects.

Regarding the first aspect, it was verified that professionals offered the diet standing ($p=0.01$). There was difference between pouring milk into child's oral cavity ($n=10/66$, 7%) and the cup properly positioned on lower lip ($n=10/66$, 7%) and milk touching lower lip ($n=03/20\%$) ($p=0,010$); as between pouring milk into child's oral cavity ($n=10/66$, 7%) and milk touching lower lip ($n=03/20\%$) (p -value = 0.001). At last, newborns' posture indicated they are positioned with occipital and cervical regions supported ($n=15/100\%$), with significant difference since the inclination in technician arms at 40 degrees do not occurred ($n=03/20\%$) (p -value = 0,001).

Table 3 presents the relation among knowing the technique, training and technician posture, newborn posture and cup position. There is no relation among the variables analyzed.

Table 4 presents there is no association in working time and technician posture, newborn posture and cup position.

Table 3 – Relation between technique knowledge, training developed and the nursing technician posture, newborn posture and body position

		Technique Knowledge				Training development			
		Yes	%	No	%	Yes	%	No	%
Nursing Technician posture	Sit and aligned	1	33%	2	67%	0	0%	3	100%
	Standing	3	25%	9	75%	6	50%	6	50%
	Total	4	27%	11	73%	6	40%	9	60%
	p Value	0.770				0.114			
Newborn posture	Inclined in 40° in technician arms	1	33%	2	67%	0	0%	3	100%
	Inclined a 40° in the crib	3	25%	9	75%	6	50%	6	50%
	Newborns' occipital and cervical regions supported	4	27%	11	73%	6	40%	9	60%
	Total	8	27%	22	73%	12	40%	18	60%
p Value	0.958				0.287				
Cup position	Positioned on lower lip	1	33%	2	67%	0	0%	3	100%
	Milk in contact with lower lip	0	0%	2	100%	1	50%	1	50%
	Milk poured in oral cavity	3	30%	7	70%	5	50%	5	50%
	Leakage during offer	2	29%	5	71%	4	57%	3	43%
	Total	6	27%	16	73%	10	45%	12	55%
p Value	0.838				0.394				

Statistic Test: Chi-square Test

Subtitle: % = relative value

p Value = 0.05

Table 4 – Relation between working time and newborn posture and body position

Working Time		Mean	Median	Standard Deviation	N	CI	p Value
Newborn posture	Inclined in 40° degrees in technician arms	7.5	7.5	0.7	2	1.0	0.996
	Inclined in 40° in the crib	11.9	6.5	12.0	12	6.8	
	Newborns' occipital and cervical regions supported	11.2	7.5	11.1	14	5.8	
Cup position	Cup positioned in inferior lip	5.8	7.0	5.0	3	5.7	0.750
	Milk in contact with lower lip	16.5	16.5	19.1	2	26.5	
	Milk poured in oral cavity	11.9	8.0	11.4	9	7.5	
	Leakage during offer	16.8	18.5	14.2	6	11.4	

Statistic Test: Kruskal-Wallis Test

Subtitle: CI = confidence interval

p Value = 0.05

■ DISCUSSION

The proposals of this study was to verify if knowing the technique of offering the diet in a cup, training and the working time had influence on nursing technician posture, newborns posture and cup position.

It was observed the most of the technician referred do not know the technique, although, more than half of them had received training. A previous study analyzed the orientation given by health professionals to mothers about how to use the cup with their babies, and the results showed that

mother and baby posture and the cup position were positively influenced by these orientation¹⁹.

It is a simple technique, easy to be executed, but it needs capacitation, since the baby is considered overall and not only the oral cavity. The child need to be organized, in correct posture, calm, in other words, there is a specific way to offer the cup^{9,19-22}.

Literature brings that feeding preterm newborns is a challenge; therefore, it must have proper aid and support, essentially from health professionals¹⁹. The unit of the study demonstrates to be concerned about training its collaborators, since more than half of the technicians were trained.

Regarding technician posture, it was verified the professional offered the diet standing. It is known that milk administration in a cup should be performed as following: the caregiver should hold the baby in attention state, snuggling them with a sheet so the milk is not spread by superior limbs movement. The baby should be sat or semi sat on caregiver lap^{19,20,23,24}.

The nursing technician position of standing in the occasion of observation is justified by an infection outbreak in this unit. To control the infection and contamination it was suggested some standard procedures, in which offering milk to newborns in their cribs. Thus, there was a minimization of physical contact. However, it is questionable if these procedures should be considered as labor routine.

It cannot be ignored, however, the fact that most of the health institutions do not care about the ergonomics of the installations and equipment, making the nursing labor harder and exhaustive. There are some difficulties to be deal with as inadequate physical and material structure to the type of service and professionals' workload²⁵.

In cup position the frequent observation was pouring milk into child's oral cavity. To use this instrument, it is recommended to be place on baby's lower lip, inclining so the milk touches their lower lips, waiting to baby suck the milk, sipping it and then swallow it. It is not necessary to pour the milk into baby's mouth²⁰⁻²³. The literature refers, for the success of the diet administration in a cup, it is important the proper position, since the inadequate position of the cup can provoke alteration in the rhythm of sipping the milk, long pauses and preterm leakage of milk^{19,26,27}.

In addition, there is the risk of the real milk ingestion to be smaller than the desired, due to the lost by leaking^{21,28,29}. This can probably generate nutrients loss and, therefore, baby's weight loss.

Newborn's position was proper, in other words, professionals can realize how the child remain better organized and they have concerning in maintaining them aligned. The proper body alignment will promote child to have a better breathing rhythm, leading to coordinating functions as sucking, breathing and swallowing. Therefore, the body alignment should be the key to obtain the ideal position to feeding³⁰.

As a result, cup handling and milk volume are essentials to succeed in the proper diet offer, mainly regarding baby posture¹⁹.

It is not influent actions to know the technique, training and working time. Thus, postures and cup position do no suffer influence from professionals, as tables 3 and 4 presented.

Very often, due to the overload imposed by labor routine, the nursing team attends a mechanical and technical assistance, not reflexive, forgetting to perform a humane care³¹. According to the Ministry of Health, humanization works as one of the principles to be followed on behalf of quality assistance³², since the technique itself do not guarantee cares to be well applied.

It is considered as a limitation of this study the number of professionals observed, such as the hours of observation. It is believed that a variation on the results may occur according to work hours, for example, in weekends, night shifts and end of shifts.

■ CONCLUSION

The results from observing the technicians conclude that the diet is offered with the technician standing, it is poured into baby's oral cavity and there is no influence in newborn, technicians or the cup position from knowing the technique, training or working time.

RESUMO

Objetivo: verificar se o conhecimento da técnica de oferta da dieta pelo copo, o recebimento de treinamento e o tempo de trabalho influenciam a postura do técnico de enfermagem, a postura do recém-nascido e o posicionamento do copo. **Métodos:** trata-se de um estudo observacional, descritivo, transversal, do qual participaram 15 profissionais, técnicos de enfermagem responsáveis pela administração da dieta às crianças, no momento do oferecimento do leite pelo copo, na ausência da genitora. Foi definido nível de significância estatística de 0,05. **Resultados:** apenas nove indivíduos foram treinados ($p=0,273$) e 11 referiram não ter conhecimento da técnica ($p=0,011$). O oferecimento da dieta ocorreu em pé ($p=0,001$), com o derramamento do leite na boca da criança ($p=0,010$), sendo posicionada com as regiões occipital e cervical apoiadas ($p\text{-valor} = 0,001$). Não houve associação entre o conhecimento da técnica, recebimento de treinamento, tempo de trabalho às variáveis postura do técnico de enfermagem, postura do recém-nascido e posicionamento do copo. **Conclusão:** a postura de oferta da alimentação é realizada em pé, há derramamento da dieta na cavidade oral do bebê e não há influência das posturas do neonato, do técnico ou do copo por conta do conhecimento da técnica, realização de treinamento e tempo de trabalho.

DESCRIPTORIOS: Recém-Nascido; Aleitamento Materno; Prematuro; Leite Humano; Métodos de Alimentação

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