

# The meaning of hand expression for mothers of premature newborns

*O significado da realização da auto-ordenha do leite para as mães dos recém-nascidos prematuros*

*El significado de la realización de la auto-extracción de la leche materna para las madres de los recién nacidos prematuros*



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## ABSTRACT

**Object:** Meaning of hand expression for the mothers of premature newborns.

**Objective:** To comprehensively analyze the meaning of hand expression for the mothers of premature newborns.

**Methodology:** Qualitative study, based on the sociological phenomenology of "Alfred Schutz", 19 mothers of PTNB infants admitted to a public maternity hospital in the city of Rio de Janeiro have participated. The collection of the speeches was carried out through an interview recorded with an electronic MP3 equipment.

**Results:** From the careful reading and search for the similarities between the reports, two concrete categories emerged from the experience: Hand expression enables the best for the baby and Overcoming the difficulties regarding hand expression from the perspective of milk production.

**Conclusion:** The study points to the importance of sensitive listening to capture the mothers' understanding about the importance of milk, valuing its intentional project, with a view to better provide guidelines to be carried out by the a nursing professional.

**Keywords:** Breast feeding. Human milk expression. Neonatal nursing. Mothers.

## RESUMO

**Objeto:** Significado da auto-ordenha pelas mães de recém-nascido prematuro.

**Objetivo:** Analisar compreensivamente o significado da auto-ordenha para a mãe de recém-nascido prematuro.

**Metodologia:** Estudo qualitativo, baseado na fenomenologia sociológica de "Alfred Schutz", participaram 19 mães de RNPT internados numa maternidade pública do município do Rio de Janeiro. A captação das falas deu-se através de entrevista gravadas com equipamento eletrônico MP3.

**Resultados:** A partir da leitura atenta e buscando as similaridades entre os relatos, emergiram duas categorias concretas do vivido: Auto-ordenhar possibilita o melhor para o bebê e Superar as suas dificuldades em auto-ordenhar na perspectiva da produção de leite. Conclusão: O estudo aponta para a importância da escuta sensível para captar o entendimento das mães sobre a importância da auto-ordenha, valorizando o seu projeto intencional, na perspectiva do melhor direcionamento das orientações a serem realizadas pelo profissional de enfermagem.

**Palavras-chave:** Aleitamento materno. Extração de leite humano. Enfermagem neonatal. Mães.

## RESUMEN

**Objeto:** Significado de la auto-extracción de la leche materna por las madres de recién nacido prematuro.

**Objetivo:** Analizar comprensivamente el significado de la auto-extracción para la madre del recién nacido prematuro.

**Metodología:** Estudio cualitativo, basado en la fenomenología sociológica de "Alfred Schutz", en que participaron 19 madres de RNPT internados en una maternidad pública del municipio de Río de Janeiro. La captación de las palabras se dio a través de una entrevista grabada con equipo electrónico MP3.

**Resultados:** A partir de una lectura atenta y buscando similitudes entre los relatos, surgieron dos categorías concretas de lo vivido: La auto-extracción posibilita lo mejor para el bebé y Superar sus dificultades en la auto-extracción en relación a la perspectiva de la producción de leche.

**Conclusión:** El estudio apunta a la importancia de una escucha sensible para captar el entendimiento de las madres sobre la importancia de la auto-extracción de la leche materna, valorizando su proyecto intencional, en la perspectiva de una mejor dirección de las orientaciones a ser realizadas por el profesional de enfermería.

**Palabras clave:** Lactancia materna. Extracción de leche materna. Enfermería neonatal. Madres.

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## ■ INTRODUCTION

Hand expression is defined as a breast-milk withdrawal technique, using hands or pumps to facilitate the extraction of milk<sup>(1-2)</sup>. Hand expression features the withdrawal of milk with the hands. Performing it relieves breast discomfort when there is nipple-areolar tension, which impairs the newborn from feeding in the breastfeeding process and it is also effective in preventing breast engorgement and mastitis<sup>1</sup>. For the Premature Newborn (PTNB), hand expression provides the necessary human milk while the child is not clinically able to suck the mother's breast and it also creates the possibility of donating excess milk<sup>(1-4)</sup>.

PTNBs are characterized by the gestation period prior to 259 days from the date of the last menses defined by the Nagele's rule<sup>(2)</sup>. In Brazil, the premature birth rate is 11.3%<sup>(5)</sup>. This data is of great concern for the health professionals, making it essential the constant training for the care provision to the mothers and to the PTNBs.

One of the most important strategies for caring for PTNBs is the Baby-Friendly Hospital Initiative (BFHI)<sup>(6-7)</sup>, created in 1990 by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), with the aim of stimulating breastfeeding worldwide and emphasizing the need for hospitals and maternities to change routines and behaviors that hinder breastfeeding and lead to early weaning. Through the training offered by the BFHI, professionals are able to advise on the practice of breastfeeding in different hospital settings since the strategy proposes the adoption of 10 steps for the certification as a "Baby-Friendly Hospital". In this study, step 5 is analyzed, which highlights: "Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants."<sup>(2,6-7)</sup>

A search in the Medical Literature Analysis and Retrieval System Online (MEDLINE) was performed for this study. The current literature<sup>(3-4,7-8)</sup> converges on the importance of the implementation of guidelines on the technique of hand expression by health professionals to the mothers of premature infants and on the importance of it being performed daily at the Neonatal Unit (NU); maintaining the frequency of hand expression; comparison of the achievement efficiency between the manual and mechanical expression technique by measuring the volumes obtained and the meaning of the milk to the mother<sup>(9-12)</sup>. From the findings, it is observed that there is still a lack of studies that have as main focus the reports of the experiences lived by the mothers and their motivations to carry out hand expression to the PTNB hospitalized in the Neonatal Unit.

Considering hand expression as an important action performed by the mother for the production of milk and as the beginning of breastfeeding for her child, the aim of the study is to comprehensively analyze the meaning of the hand expression action for the mother of the newborn hospitalized at the Neonatal Unit. The guiding question is:

What is the meaning of hand expression for the mother of the premature newborn admitted to the Neonatal Unit?

## ■ METHOD

A study based on Alfred Schutz's sociological phenomenology, since the procedure of hand expression can be characterized as a social action developed by the mothers, taking into account their knowledge obtained through their experiences in the social world<sup>(2,13)</sup>, besides that obtained among the NU, where the child is hospitalized, and at the Milk Bank, where the mother carries out the hand expression.

It should be highlighted that it is important for the researcher to know the intention of the mother when performing hand expression, aiming at the quality of the care provision to the PTNB<sup>(2)</sup>.

The "reason for" is characterized as a future projection apprehended in the course of the mothers' reports identified by the researcher, in order to seek the meaning of the hand expression for herself<sup>(2,13)</sup>.

In the reports of the phenomenological interview, according to Alfred Schutz, we can also identify the "face-face relationship" and the "biographical situation" of the participants who help in understanding the hand expression performed by the mothers<sup>(2,13)</sup>.

The study was carried out at the Neonatal Unit of a public maternity in the city of Rio de Janeiro, comprising a Neonatal Intensive Care Unit (NICU) with 18 beds, an Intermediate Care Unit (IMCU) with 25 beds and a Kangaroo Care Unit (KCU) with 6 beds.

The research participants were composed of 19 mothers of PTNB, who had their children hospitalized at the Neonatal Unit and agreed to perform hand expression. The exclusion criteria were mothers who were unable to breastfeed, taking into account the conditions that prevent the woman from offering her milk to the child and mothers under the age of 18 without legal representatives present at the time of the interview.

The study was approved by the IEC of the proposing institution number 961.207 on February 24, 2015, and by the Health Office of Rio de Janeiro (SMSRJ - Secretaria Municipal de Saúde do Rio de Janeiro), under opinion number 1058000 on May 11, 2015. All participants signed the Free

and Informed Consent Term after the research purpose was explained.

The tool for capturing the phenomenological interview was composed of three open questions: What does hand expression mean to you? What do you have in mind (your expectation) with regard to hand expression to your child on a daily basis? How has it been for you to perform hand expression?

The questions were recorded in MP3 format and then transcribed. Each mother interviewed was identified with the letter M and the interview number (M1, M2, M3...) to maintain the participants' anonymity.

The results were obtained from the reading and re-reading of the speeches, and from the verification through the similarity of meaning between the reports emerged two concrete categories of the experience, arranged according to Alfred Schutz's social phenomenology<sup>(13)</sup>.

## ■ RESULTS AND DISCUSSION

Based on Alfred Schutz's sociological phenomenology, the construction of Experience Concrete Categories took place: Hand expression grants the best for the baby and overcoming the difficulties in hand expression from the perspective of milk production", which are presented below with their respective reports.

The study participants were aged between 18 and 33 years old, with different experiences in hand expression, as 13 mothers were multiparous and 6 of them were primiparous.

### Hand expression grants the best for the baby

Through the reports, this category clarifies the benefits of hand expression to the child according to the mothers:

*"More... more comfort, more health, right? But the main reason is because of my baby, so that he gains weight, grows stronger[...]" M4*

*"[...] breast milk for the newborn is important and he needs my milk [...] so that he gains weight [...] to get out of the ICU too, to go home faster..." M15*

The speeches express that hand expression grants the best for the baby due to observation of clinical signs, such as weight gain and the evolution of the feeding by the enteral route in the use of oral gastric probes for the maternal breast daily at the NU. The mother's Expressed Raw Milk (ERM) taken from hand expression is important for

the PTNB feeding, aiming at the prevention of Necrotizing Enterocolitis<sup>(4)</sup>. Thus, the participants associate the importance of breast milk with the growth and development of the PTNB.

The beginning of hand expression for the mothers consists in the formulation of the intentional project<sup>(13)</sup> with the placement of its motive "to" the healthy growth of the PTNB, even with the adversity of the hospitalization at the NU. We also observed in the reports the "knowledge"<sup>(13)</sup> that the participants have regarding Expressed Raw Human Milk (ERHM)<sup>(1-2)</sup> acquired in their social relations with their relatives, with health professionals and that creates a meaning to carry out the and expression.

*"[...] I noticed his improvement with breast milk, when I could not breastfeed, hand expression was very important [...] I really saw his improvement when he started taking my milk." M5*

*"For me it means his improvement, as fast as possible, while I'm expressing milk [...]" M12*

Thus, the trust of the mothers that the ERHM contributes to the health of the PTNBs and to the maternal values included in the milk contributes to the development of the child. According to the reports, during the period when their children needed intensive care at the Neonatal Unit, this was one of the contributions at the moment, since providing milk means the continuity of the connection that was broken with the premature birth<sup>(2,13)</sup>.

At the site where this study was carried out, the BFHI rules and routines are evidenced in the daily context, among health professionals, mothers and families with the hand expression technique and the encouragement of breastfeeding to PTNB mothers, since the field is in process of certification. Hand expression is carried out in a private room, located in the Human Milk Bank (HMB), sector in compliance with the norms set forth in Administrative Rule 171 of September 4, 2006<sup>(2,6)</sup>.

In an attempt to offer the ERHM to PTNBs as soon as possible, it is recommended to intensify training and follow-up of the mothers on the correct hand expression technique and effective milk production<sup>(2,4,12,14)</sup>. During the period of hospitalization at the Neonatal Unit, it is also recommended that the mother, the family and the PTNB should be together for as long as possible during the hospitalization period<sup>(9,12)</sup>. At the time of the interviews, 14 mothers were hospitalized close to the PTNBs in the KCU ward and in the mothers' lodge, which contributes to the monitoring and formation of the bond with the PTNB<sup>(2-4,9-11)</sup>.

When well guided by health professionals, mothers are given the training of their “knowledge” and consequently the realization of their intentional project of hand expression for the health of their child<sup>(2,10-11)</sup>. For this construction, it is necessary to carry out training with the professionals involved and guidelines for puerperal women in the lactation period on the importance of performing hand expression and the benefits to the PTNB to arouse interest in performing the technique<sup>(3-4,9-12)</sup>. The relationship between health professionals and mothers needs to occur every day and to be constant in the context of the Neonatal Unit in the performance of hand expression and care, aiming at improving the clinical conditions of the children<sup>(2,6)</sup>.

On the other hand, although mothers recognize that breastmilk is the best for the baby, they also point out their difficulties in producing milk and performing hand expression.

### **Overcoming difficulties in hand expression from the perspective of milk production**

Due to the premature birth, the mother is delayed in the process of milk whelping, since the baby’s sucking reflex and the emptying of the breast is important for the continuity of the production of the hormones related to the synthesis of the mother’s breast<sup>(14)</sup>. But with the continuity of the days of hospitalization, mothers are able to overcome these difficulties in order to establish a regular milk production and contribute to the feeding of the PTNB. Thus, from the identification of their intentional project, mothers seek to overcome their difficulties in hand expression:

*“I think it’s an act of love, because one needs to be patient when performing hand expression [...] it’s a bit of a pain, because [...] it took 1 hour and 30 minutes to fill 10ml and so it is something like that. Sorry, it is boring to do it, one has to be very patient, but as I told you I do that for love, for love for my son, do you understand it? [...] My expectation is that my son will take my breast... that he will breastfeed soon.” M6*

*“[...] I cannot produce a lot of milk, but ... [...] I go there every day, take the milk, calmly, with greater affection and love so that she may notice it’s her mother’s milk for her [...] that’s what I think it’s important that we go dedicate ourselves [...] because at the beginning there was almost nothing, I could not take it, but now I can do it, I can hand it and milk is coming out right. M18*

*“[...] since I did the c-section, I went there to take the milk, but as I said, it hurts a lot [...] but it is very worthwhile. Then*

*the pain goes away. Taking your milk to give to your child. [...] is something very important to do. [...] in the beginning, it was difficult, I had no milk, the girls helped to remove it, it hurts a lot, but then the milk came [...] and today there is enough. M19*

Participants report that difficulties in hand expression are related to milk production in the puerperium, but they still insist on performing the procedure. For each milliliter (ml) produced during the days of hospitalization of the PTNB the overcoming in the production of milk for herself is established, doing her part in the process of treatment of her child. Little milk production is associated with the period of milk descent expected to occur up to the fourth day postpartum through the production of prolactin hormone, which may occur regardless of suckling of the baby or not, as long as the breast is emptied with hand expression<sup>(1,14)</sup>.

Hand expression is recommended at least eight times a day, since it was verified that if this procedure is performed less than six times a day it reduces milk production<sup>(3-4,8,10-11)</sup>. At the NU where the study took place, the mothers are invited to perform hand expression in a separate room at the Human Milk Bank (HMB), located on the same floor. The newly expressed ERHM is sent to the NU in its own cold chain, respecting the current legislation<sup>(1-2)</sup>.

During this period, mothers rely on the support of health professionals in these sectors for the continuity of hand expression, a relationship that is developed on a daily basis. In these social relations a good communication process is necessary, with open attitudes of health professionals to the outside world to guide mothers in the lactation process, respecting their beliefs and their privacy and to enable a good face-to-face relationship in the daily life at the Neonatal Unit<sup>(2,13)</sup>. The mother needs to be encouraged to perform hand expression and to adopt the kangaroo position as early as possible to assist in breastfeeding, since the skin-to-skin contact between the mother and the PTNB generates the production of hormones, contributing to the increase of milk production<sup>(1,2)</sup>.

Thus, from the reports of the mothers in the previous categories, we observed that the decision to perform hand expression and to continue the breastfeeding process is exclusive to the mother of the newborn with the support of the health professionals from their stocks of experiences and from their intentional projects, developed since the gestation.

## **■ CONCLUSIONS**

From this study, it was understood that the mothers’ understanding regarding hand expression is that it is the

best for the PTNB, but it was necessary to overcome their daily difficulties in milk production.

The study participants recognize the transient nature of the hand expression technique at a time when the PTNB cannot rely on the mother's breast due to its clinical conditions and this is the beginning and a further step towards breastfeeding.

Hand expression is also related to the improvement of the clinical conditions of the PTNB through the signs of weight gain and the increase of the quantity of milk offered to him during the days of hospitalization, being characterized as its main "reasons for" according to Alfred Schutz and as well as his intentional project in the development of the hand expression action. These data refer to the quantitative aspect, which facilitates the understanding of the mothers, away from technical terms associated to the care of the PTNB.

The intentional project of mothers to hand express milk depends on the perspective of better targeting of the guidelines to be carried out in daily activities in the NU, from the sensitive listening of health professionals and the continuity of the bond between mother and child for lactation and production of milk. Emphasizing the importance of the mother to maintain lactation during the NU hospitalization so that PTNB can access the ERHM during the hospitalization.

This study makes it possible to offer data for the elaboration of a work plan adequate to the real needs of the mothers, in order to continue breastfeeding after discharge.

Regarding the assistance, this study points to other works related to hand expression as an important technique to enable breastfeeding of PTNBs and to what are the real impacts on children's health.

We also suggest the need to study the lactation process performed by mothers who perform hand expression.

## ■ REFERENCES

1. Ministério da Saúde (BR). Atenção à saúde do recém-nascido: guia para os profissionais de saúde: cuidados gerais. 2. ed. Brasília: Ministério da Saúde; 2014 [citado 2018 abr 12]. v. 1. p. 126-8. Disponível em: [http://bvsmms.saude.gov.br/bvs/publicacoes/atencao\\_saude\\_recem\\_nascido\\_v1.pdf](http://bvsmms.saude.gov.br/bvs/publicacoes/atencao_saude_recem_nascido_v1.pdf).
2. Pereira, MCR. A ordenha manual do leite humano na perspectiva das mães dos recém-nascidos prematuros: uma contribuição para os profissionais de saúde [dissertação]. Rio de Janeiro (RJ): Universidade do Estado do Rio de Janeiro; 2016.
3. Borges MS, Oliveira AMM, Hattori WT, Abdallah VOS. Quality of human milk expressed in a human bank and home. *J Pediatr (Rio J)*. 2017. [Epub ahead of print]. doi: <https://doi.org/10.1016/j.jpmed.2017.07.004>.
4. Abrams SA, Landers S, Noble LM, Poindexter BB, Daniels S, Corkins M, et al. Donor human milk for high-risk infant: preparation, safety, and usage in the United States. *Pediatrics*. 2017 Jan [cited 2018 Mar 20];139(1):e20163440. doi: <https://doi.org/10.1542/peds.2016-3440>.
5. Fundação Oswaldo Cruz (BR). Escola Nacional de Saúde Pública. Inquérito nacional sobre parto e nascimento: sumário executivo nacional na pesquisa. Rio de Janeiro; 2014 [citado 2018 mar 13]. Disponível em: <http://www.ensp.fiocruz.br/portal-ensp/informe/site/arquivos/anexos/nascerweb.pdf>.
6. Ministério da Saúde (BR) [Internet]. Brasília: MS; c2013-2018. Iniciativa Hospital Amigo da Criança; [aprox. 4 telas]. Disponível em: <http://portalms.saude.gov.br/saude-para-voce/saude-da-crianca/pre-natal-e-parto/iniciativa-hospital-amigo-da-crianca-ihac>.
7. Ministério da Saúde (BR). Portaria nº 1.153, de 22 de maio de 2014. Redefine os critérios de habilitação da Iniciativa Hospital Amigo da Criança (IHAC), como estratégia de promoção, proteção e apoio ao aleitamento materno e à saúde integral da criança e da mulher, no âmbito do Sistema Único de Saúde (SUS). Brasília; 2014 [citado 2017 jun 15]. Disponível em: [http://bvsmms.saude.gov.br/bvs/saudelegis/gm/2014/prt1153\\_22\\_05\\_2014.html](http://bvsmms.saude.gov.br/bvs/saudelegis/gm/2014/prt1153_22_05_2014.html).
8. Vieira CS. Risco para amamentação ineficaz: um diagnóstico de enfermagem. 2014. *Rev. Bras Enferm*. [2014 jan 30];57(6):712-4. Disponível em: [www.scielo.br/pdf/reben/v57n6/a16.pdf](http://www.scielo.br/pdf/reben/v57n6/a16.pdf).
9. Gianni ML, Roggero P, Amato O, Orsi A, Garbarino F, Garavaglia E, et al. Intervention for promoting breast milk use in neonatal intensive care unit: a pilot study. *J Matern Fetal Neonatal Med*. 2014;27(5):475-8. doi: <https://doi.org/10.3109/14767058.2013.818971>.
10. Wu B, Zheng J, Zhou M. Improvement of expressed breast milk in mothers of preterm infants by recording breast milk pumping diaries in neonatal center in China. *Plos One*. 2015;10(12):e0144123. doi: <https://doi.org/10.1371/journal.pone.0144123>.
11. Acuña-Muga J, Ureta-Velasco N, de la Cruz-Bértolo J, Ballesteros-López R, Sánchez-Martínez R, Miranda-Casabona E, et al. Volume of milk obtained in relation to location and circumstances of expression in mothers of very low birth weight infants. *J Hum Lact*. 2014;30(1):41-6. doi: <https://doi.org/10.1177/0890334413509140>.
12. Bezerra MJ, Carvalho ACO, Sampaio KJAJ, Damasceno SS, Oliveira DR, Figueiredo FER. Percepção das mães de recém-nascidos acerca da amamentação. *Rev Baiana Enferm*. 2017; [citado 2018 jan 15];31(2):e17246. Disponível em: <https://portalseer.ufba.br/index.php/enfermagem/article/view/17246>.
13. Wagner, H. Sobre fenomenologia e relações sociais: Alfred Schutz. Petrópolis: Vozes; 2012.
14. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Saúde da criança: aleitamento materno e alimentação complementar. 2. ed. Brasília: Ministério da Saúde; 2015 [citado 2018 jan 12]. p. 65-68. Disponível em: [http://bvsmms.saude.gov.br/bvs/publicacoes/saude\\_crianca\\_aleitamento\\_materno\\_cab23.pdf](http://bvsmms.saude.gov.br/bvs/publicacoes/saude_crianca_aleitamento_materno_cab23.pdf).

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