

## Skin-to-skin contact and breastfeeding at birth: interfaces with exclusive breastfeeding at hospital discharge

*Contato pele a pele e amamentação no nascimento: interfaces com aleitamento materno exclusivo na alta hospitalar*

*Contacto piel a piel y lactancia materna al nacer: interfaces con lactancia materna exclusiva en el alta hospitalaria*

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### ABSTRACT

**Objective:** to discuss the occurrence of skin-to-skin contact at birth and breastfeeding in the first hour of life, as well as their association with the prevalence of exclusive breastfeeding at hospital discharge. **Method:** this cross-sectional study was conducted with 157 postpartum women and 160 newborns from a public maternity hospital in Rio de Janeiro. Data were collected from July 2020 to January 2021, through a structured questionnaire, and analyzed by descriptive statistics and Poisson regression with robust variance. **Results:** 93.13% of the newborns enjoyed skin-to-skin contact, which lasted a maximum of 10 minutes in 74.67% of cases; 69.38% were breastfed in the first hour of life, and this was significantly associated ( $p = 0.17$ ) with exclusive breastfeeding at hospital discharge, which was 83.75% prevalent. **Conclusion:** the findings underline the effectiveness of the recommendations of Brazil's national guidelines and evidence the need to maintain good care practices, in an important commitment to quality maternal and neonatal care.

**Descriptors:** Maternal and Child Health; Postpartum Period; Infant, Newborn; Breastfeeding Feeding; Cross-Sectional Studies.

### RESUMO

**Objetivo:** discutir a ocorrência de contato pele a pele ao nascer e a amamentação na primeira hora de vida, bem como sua associação com a prevalência de aleitamento exclusivo na alta hospitalar. **Método:** estudo transversal, realizado com 157 puérperas e 160 recém-nascidos de uma maternidade pública do Rio de Janeiro. Os dados foram coletados de julho de 2020 a janeiro de 2021, por meio de questionário estruturado, com dados analisados pela estatística descritiva e regressão de Poisson com variância robusta. **Resultados:** dos recém-nascidos, 93,13% realizaram contato pele a pele e, destes, 74,67% permaneceram nesse contato por, no máximo, 10 minutos; 69,38% foram amamentados na primeira hora de vida, sendo esta prática significativamente associada ( $p=0,17$ ) ao aleitamento exclusivo na alta hospitalar. **Conclusão:** os resultados encontrados reforçam a efetividade das recomendações das diretrizes nacionais e evidenciam a necessidade da manutenção das boas práticas de cuidado, importante compromisso com a qualidade assistencial materna e neonatal.

**Descritores:** Saúde Materno-Infantil; Período Pós-Parto; Recém-Nascido; Aleitamento Materno; Estudos Transversais.

### RESUMEN

**Objetivo:** discutir la ocurrencia del contacto piel a piel al nacer y la lactancia materna en la primera hora de vida, así como su asociación con la prevalencia de lactancia materna exclusiva al alta hospitalaria. **Método:** Estudio transversal realizado junto a 157 puérperas y 160 recién nacidos de una maternidad pública de Río de Janeiro. Los datos fueron recolectados de julio de 2020 a enero de 2021, a través de un cuestionario estructurado, y analizados por estadística descriptiva y regresión de Poisson con varianza robusta. **Resultados:** el 93,13% de los recién nacidos tuvo contacto piel a piel y, entre estos, el 74,67% permaneció en ese contacto durante, como máximo, 10 minutos; el 69,38% fue amamantado en la primera hora de vida, y esta práctica se asoció significativamente ( $p=0,17$ ) con la lactancia materna exclusiva en el alta hospitalaria. **Conclusión:** Los resultados encontrados refuerzan la efectividad de las recomendaciones de las guías nacionales y ponen en evidencia la necesidad de mantener buenas prácticas asistenciales, compromiso importante con la calidad de la atención materna y neonatal.

**Descritores:** Salud Materno-Infantil; Periodo Posparto; Recién Nacido; Lactancia Materna; Estudios Transversales.

## INTRODUCTION

Skin-to-skin contact performed immediately after delivery is recommended by the World Health Organization (WHO) and has psychological, physiological and social benefits for mother and baby<sup>1</sup>. This recommendation is included in the Ten Steps to Successful Breastfeeding from the Baby-Friendly Hospital Initiative (BFHI). In addition, the first hour after delivery, also known as the golden hour, has important implications for reducing neonatal mortality rates from infections, which is one of the indicators of excellence in breastfeeding<sup>2</sup>.

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Skin-to-skin contact can be immediate when the newborn (NB) is placed directly on the mother's body within the first ten minutes after birth, or early in situations in which this practice takes place between ten minutes and 24 hours after the birth. Skin-to-skin contact in the first hour of life has immediate and long-term benefits, both for the baby and for the woman, as it favors the affective bond and determines favorable outcomes for maternal physiological processes, such as delivery of the placenta, involution uterus, stimulation of milk production and breastfeeding<sup>3</sup>.

Immediate or early skin-to-skin contact (SSC) improves breastfeeding and helps in the newborn's transition to the extrauterine environment. It is an efficient strategy to promote breastfeeding, and an early starting routine is recommended for healthy newborns, regardless of birth mode, and even premature babies born at 35 weeks or more<sup>4</sup>.

We can highlight improvement in the effectiveness of breastfeeding as immediate benefits for the newborn because the baby is in the first period of alertness soon after birth, and its innate behavior is to nibble and suck. In addition, skin-to-skin contact helps regulate and maintain body temperature, and improves cardiorespiratory stability in premature babies. Among the long-term benefits, it improves breastfeeding rates in the first 4 months of life, as well as the total duration of breastfeeding<sup>5</sup>.

Regarding good practices in birth care developed in Brazilian hospitals, the percentages of immediate and continuous skin-to-skin contact after childbirth and of encouraging breastfeeding in the first hour of life were 24.8% and 22.6%, respectively. It is worth considering that only 0.5% of the maternity hospitals were evaluated as not adequate in terms of encouraging breastfeeding while rooming-in, with almost all of the women stating that they breastfed in the first 24 hours of life<sup>6</sup>.

The duration of breastfeeding is affected by factors such as the baby's living environment before, during and immediately after birth, habits during pregnancy and after birth, as well as hospital routines. These factors can lead to an interruption in breastfeeding and a reduction in the exclusive breastfeeding rate. Therefore, the first hours after birth must be taken into account, as they are the most ideal time for the baby to start their searching and suctioning mechanisms<sup>7</sup>.

Thus, the objective of this study is to discuss the occurrence of skin-to-skin contact at birth and breastfeeding in the first hour of life, as well as its association with the prevalence of exclusive breastfeeding at hospital discharge.

## METHOD

This is a cross-sectional and descriptive study carried out in a public maternity hospital in the city of Rio de Janeiro, Brazil. The location was chosen because it is an institution which has the title of Baby-Friendly Hospital and is a reference for the care of high-risk pregnancies, with an average of 454.6 births per month in 2019, the year before the study was carried out. Of the total of 5,456 deliveries in 2019, 34.40% were cesarean sections (n=1877) and 65.59% were normal deliveries (n=3579).

The study population consisted of postpartum women and their newborns treated at the obstetric center of the aforementioned service from July 2020 to January 2021. The sample size was calculated through a pilot test with 60 mothers, considering a prevalence of 81.6% exclusive breastfeeding at the time of hospital discharge, with a maximum error estimate of 5% and a confidence level of 95%, resulting in 155 postpartum women. It was not possible to randomly select the participants, and therefore the non-probabilistic sample included 157 postpartum women and 160 newborns.

Postpartum women who had normal delivery or underwent cesarean section with clinical conditions to respond to the form, as well as all newborns, including those who were admitted to the neonatal ICU, were included in the study. The following criteria were adopted for exclusion: puerperal women diagnosed with postpartum depression; with immediate postpartum stillbirth; or who had complications and trauma during childbirth; as well as newborns whose mothers had temporary or permanent contraindications to breastfeed.

Data collection was performed through a structured questionnaire applied by one of the authors of this article containing 39 closed questions that addressed skin-to-skin contact and breastfeeding in the delivery room and rooming-in, which were answered by the puerperal women. Secondary data were extracted from medical records, from which the following information was collected: sociodemographic profile; obstetric history; characteristics of childbirth care; birth conditions; characteristics of the NB; and clarifications on breastfeeding at hospital discharge. The independent variables of the study were skin-to-skin contact on the mother's chest and breastfeeding in the first hour of life, with exclusive breastfeeding at hospital discharge being the dependent variable.

Data were entered into Microsoft Excel® spreadsheets and then transported to the R® Program for descriptive analysis. Categorical variables were presented as absolute and relative frequencies. The Shapiro-Wilk normality test was applied for numerical variables, adopting the mean as a measure of central tendency and the standard deviation as dispersion. Poisson regression with robust variance was calculated to correlate the prevalence of exclusive breastfeeding at hospital discharge with skin-to-skin contact at birth and breastfeeding in the first hour of life. Results with p-values <0.20 were considered statistically significant.

The study was approved by the Research Ethics Committees of the proposing institution and the co-participant. All participants signed the Free and Informed Consent Term, guaranteeing data confidentiality.

## RESULTS

Regarding socioeconomic conditions, the mothers had a mean age of 25.26 years (SD=5.99), while 50.31% (n=79) said they had completed high school; 10.12% (n=8) had incomplete higher education; and 8.86% (n=7) had completed higher education. Completed elementary education was represented by 7.01% (n=11) of the participants and incomplete by 15.29% (n=24). In addition, 76.61% (n=114) of postpartum women reported not working, and 27.38% (n=43) reported working. Of the 43 puerperal women who worked, 69.76% (n=30) had a formal job.

Regarding obstetric data, 47.77% (n=75) of the participants were primiparous and 52.23% (n=82) were multiparous, of which 96.34% (n=79) had a history of previous breastfeeding; 98.09% (n=154) had a single pregnancy and 1.91% (n=3) had twins. Furthermore, 94.27% (n=148) said they had performed prenatal care; 44.59% (n=66) had received information about breastfeeding, 26.35% (n=39) were informed about the benefits of skin-to-skin contact and 6.08% (n=9) participated in pregnant women groups.

For the gestational outcome, 80.25% (n=126) of the women had a vaginal delivery; nine gave birth at home without professional assistance; 0.64% (n=1) underwent instrumental delivery; and 19.11% (n=30) underwent cesarean section, reaching a total of 160 newborns in the sample. Data related to the characterization of newborns at birth are presented in Table 1.

**TABLE 1:** Characterization of newborns in the delivery room according to data from medical records in a maternity hospital in a municipality in Rio de Janeiro state. Rio de Janeiro, RJ, Brazil, 2021.

Variables	n	f(%)	Mean (Standard deviation)	CI (95%)	
<b>Gender (n=160)</b>	Female	73	45.63	[0.3780; 0.5366]	
	Male	87	54.38	[0.4634; 0.6220]	
<b>Gestational age* (n=150)</b>	30 to 33 weeks and 6 days	2	2.53	[39.06; 39.6]	
	34 to 36 weeks and 6 days	15	30.38		
	37 to 41 weeks and 6 days	133	67.09		39.33 weeks (±1.67) weeks
<b>Birth weight (n=150) (1)</b>	1500 to 2499g	2	2.53	[3.206.86; 3.383.6]	
	2500 to 3999g	15	30.38		3.295.23 gramas (±547.75)
	>4000g	133	67.09		
<b>Apgar (n=151) (1)</b>	In the 1st minute	142	8.32 (±0.94)	[8.17; 8.47]	
	In the 5th minute	142	9.02 (±0.43)	[8.95; 9.09]	
<b>Resuscitation (n= 151)</b>	Yes	5	3.12	[0.0122; 0.0800]	
	No	146	96.88	[0.9204; 0.9877]	
<b>Skin-to-skin contact on mother's chest (n=160)</b>	Yes	149	93.13	[0.8773; 0.9634]	
	No	11	6.88	[0.0365; 0.1227]	
<b>Breastfeeding in the 1st hour of life (n=160)</b>	Yes	111	69.38	[0.6152; 0.7628]	
	No	49	30.63	[0.2372; 0.3847]	

(1) Nine newborns were born in unattended deliveries.

In this study, 93.13% (n=149) of the newborns (NBs) performed skin-to-skin contact on the mother's chest, 98.67% (n=148) started immediately after birth, and 0.67% (n=1) started after ten minutes. Regarding the duration of skin-to-skin contact on the mother's chest at birth, 6.88% (n=11) of newborns and their mothers did not perform SSC, while 93.13% (n=149) of the NBs performed it, of which 74.67% (n=112) remained until ten minutes of life in contact with their mother; 24% (n=36) between ten minutes and one hour; and 0.67% (n=1) for more than one hour.

Among the 6.88% (n=11) of NBs who did not have skin-to-skin contact, nine were born by cesarean section. As reasons mentioned by the 11 participants who did not perform immediate skin-to-skin contact at birth, there are: complications with the NB (63.63%; n=7); maternal complications (9.09%; n=1); and the practice was not offered by the professional (27.27%; n=3).

In addition, 30.63% (n=49) of the NBs did not perform breastfeeding in the first hour of life. The fact that the participants did not breastfeed in the first hour of life was associated with the occurrence of: maternal complications (22.92%; n=11); complications with the NB (16.67%; n=8); the practice was not offered by the professional (35.42%; n=17); or the NB had a lack of interest in sucking the mother's breast (27.08%; n=13).

Regarding the hospitalization data of the NBs, 98.13% (n=157) were referred to rooming-in after birth and 1.88% (n=3) to the Neonatal Intensive Care Unit (NICU); 3.75% (n=6) were submitted to antibiotic therapy with a hospital stay of six days; and 1.87% (n=3) of premature infants remained in the NICU for more than 20 days.

**TABLE 2:** Association of skin-to-skin contact and breastfeeding in the first hour of life with exclusive breastfeeding at hospital discharge. Rio de Janeiro, RJ, Brazil, 2021.

<b>SSC on the mother's chest</b>	Yes (n=134) N(%)	No (n=26) N(%)	Total	p-value	PR	CI (95%)
<b>Yes</b>	125	20	145	0,20	1.78	[-0.73-4.30]
<b>No</b>	9	6	15			
<b>BF in the first hour</b>						
<b>Yes</b>	101	9	110	0,17	1.31	[0.89-1.95]
<b>No</b>	33	17	50			

p-value: Robust Poisson Regression Coefficient

PR: Prevalence Ratio

CI: PR Confidence Interval (.)

Newborns who made skin-to-skin contact at birth had a 1.78-fold higher prevalence of exclusive breastfeeding at hospital discharge when compared to those who did not. The prevalence in relation to those who were breastfed up to the 1<sup>st</sup> hour after birth was 1.31 times higher for exclusive breastfeeding at hospital discharge compared to NBs who did not. There was no statistical evidence that skin-to-skin contact at birth (p-value=0.20) influenced the prevalence of exclusive breastfeeding at hospital discharge. However, breastfeeding up to the 1<sup>st</sup> hour of life (p-value=0.17) was statistically associated with this prevalence.

The average length of stay of newborns was 3.9 days, with a standard deviation of 6.5 days. The mean corrected gestational age at discharge was 39.59 weeks, with a standard deviation of 1.57 weeks.

It is noteworthy that of the 83.75% (n=134) of NBs who were discharged on exclusive breastfeeding, 93.28% (n=125) had skin-to-skin contact on the mother's chest, and 3.73% (n=5) did not make any physical contact at birth, as resuscitation maneuvers were necessary. Of the 160 NBs in this study, 16.25% (n=26) were discharged on mixed breastfeeding, which is when the baby receives breast milk and other types of milk<sup>8</sup>.

## DISCUSSION

The data of the present study related to the profile of socioeconomic conditions of the puerperal women were similar to those found in the Brazilian evaluative research of the *Rede Cegonha* (Stork Network in English) and the Healthy Birth Project with regard to maternal age, in which most of the puerperal women were in the age group of 20 to 34 years. However, the data differed in relation to education, since most women in the present study had completed high school, while the participants in the aforementioned evaluative study had only ten years of formal study or less<sup>9</sup>.

Most (76.61%) of the participants reported not working outside the home. Results of a systematic review showed that full-time maternal work was negatively associated with breastfeeding, while part-time work, late return to work and non-return to work were positively associated with breastfeeding<sup>10</sup>. It should be noted that another systematic review study found lower family income as one of the factors with the highest association percentages with maintained breastfeeding for 12 months or more<sup>11</sup>.

Regarding obstetric data, only 43.67% of women in the present study who underwent prenatal care reported having received information about breastfeeding. This result is below that found in another study<sup>12</sup>, in which more than 60% of the puerperal women reported having received guidance on breastfeeding during prenatal care; however, these did not always address the issue of breastfeeding in the first hour of the child's life. These authors found that previous breastfeeding experience represented a protective factor for breastfeeding in the delivery room. It was also observed that the lack of guidance from health professionals regarding breastfeeding in the delivery room and skin-to-skin contact between mother and baby contributes to reduce these practices and exclusive breastfeeding<sup>12</sup>.

Another factor that can interfere with SSC performance is the type of birth. Studies indicate that cesarean section is unfavorable to skin-to-skin contact between babies and their mothers immediately after birth<sup>6,13</sup>, considering that surgery is usually related to postoperative care routines which postpone or suspend skin-to-skin contact between the mother and the baby<sup>3,14</sup>. A systematic review showed that cesarean section was the risk factor most consistently associated with non-breastfeeding in the first hour of life<sup>15</sup>, with this fact being corroborated by another study that shows a significant association between vaginal delivery, early skin-to-skin contact and breastfeeding in the first hour of life<sup>14</sup>.

There are different results in national<sup>13,14</sup> and international<sup>16,17</sup> research regarding the prevalence of SSC and breastfeeding in the first hour of life. A Brazilian study with 157 women found a prevalence of 81% of SSC in the delivery room, with 52% of newborns breastfed in the first hour<sup>13</sup>. Another study with 586 women showed lower prevalence, with 60.1% of the NBs undergoing SSC and 44.9% being encouraged to breastfeed in the first hour<sup>14</sup>. Research carried out internationally in Italy showed that SSC occurred in 100% of the delivery rooms surveyed<sup>16</sup>. In addition, a study with 249 puerperal women in Bangladesh found that 67% of them started breastfeeding within an hour after birth and the average time to start breastfeeding was 38 minutes<sup>17</sup>.

The findings regarding the non-performance of SSC due to fetal or maternal complications are similar to those of a cross-sectional study carried out in Minas Gerais with 222 mother-child binomials, which found that although 92.3% of deliveries did not present complications, only 30% had skin-to-skin contact<sup>18</sup>. Thus, it is pointed out that this practice is associated with other factors, such as: institutional routines, professionals' lack of knowledge of SSC benefits; and the shortage of human resources in health, which is undoubtedly a limiting factor for implementing good practices<sup>19</sup>.

In the present study, 17 (35.42%) postpartum women reported that they did not perform SSC or BF in the 1<sup>st</sup> hour because the health professional did not provide the care, revealing their difficulties in implementing the guidelines recommended by the WHO<sup>20</sup>. These results reinforce the need for health professionals in the hospital environment to support women regarding breastfeeding immediately from the birth of their child, which is an important step to be performed.

The willingness of professionals to support women involves their awareness of the importance of breastfeeding in the first hour, as well as the need to feel empowered to do so, especially in hospitals accredited as the Baby-Friendly Hospital Initiative (BFHI). In this sense, a review study on the 25-year experience of the BFHI in Brazil reinforces the need to train health professionals both to implement the strategy and to improve knowledge and skills and/or professional and hospital practices<sup>21</sup>.

Thus, the data from this study are in line with the results observed in a study carried out in a public maternity hospital in Northeast Brazil which also adheres to the BFHI, which identified greater difficulties in performing SSC in cases of cesarean sections<sup>22</sup>.

Most NBs who underwent SSC remained at most for up to ten minutes into their life. More unfavorable results were found in a study in Paraná, where 80% of the binomials who underwent SSC had a median contact duration of 30 seconds<sup>23</sup>.

Internationally, a cross-sectional study in Vietnam with 1,812 puerperal women showed the importance of not only of carrying out the SSC practice, but also of professionals being aware of its duration, since the prevalence of exclusive breastfeeding was higher in NBs who experienced the skin-to-skin contact for 15 to 90 minutes and for more than 90 minutes<sup>24</sup>.

It is worth reflecting on whether the short SSC duration found in the present study had a negative influence on the outcome, as there was no statistical association between its performance at birth and the prevalence of exclusive breastfeeding at hospital discharge. A Brazilian multicenter study showed that SSC was of great importance in maintaining breastfeeding at hospital discharge, including for premature newborns<sup>25</sup>.

Breastfeeding practiced in the first hour of life was significantly associated with the outcome ( $p=0.17$ ). This result highlights the importance of applying the recommendations to promote breastfeeding, considered the “gold standard” for reducing maternal and infant morbidity and mortality<sup>2</sup>. Thus, encouraging breastfeeding in the delivery room is essential and the woman must be encouraged by health professionals, with communication and interaction being fundamental in this process<sup>17</sup>.

Early stimulation of the NB in the breast and skin-to-skin contact with the mother favors establishing effective suction, which helps to prolong the exclusive breastfeeding time. A review study found that SSC and BF in the first hour of life were associated with longer duration of exclusive breastfeeding in the 1<sup>st</sup> and 4<sup>th</sup> month of the child’s life<sup>3</sup>. Therefore, supporting breastfeeding from prenatal care and encouraging it in the hospital context can be the difference for many women to maintain exclusive breastfeeding until the first six months of the baby’s life.

### Study limitations

The present study was carried out with a non-probabilistic sample and in only one maternity hospital in the city of Rio de Janeiro, thus making it difficult to infer the results for the entire city of Rio de Janeiro.

### CONCLUSION

This study showed that most newborns made skin-to-skin contact on the mother’s chest at birth and were breastfed within the first hour of birth, and that the latter was significantly associated with the prevalence of exclusive breastfeeding at hospital discharge. Skin-to-skin contact was not associated with the outcome; however, it is worth noting the reduced time in which this practice was performed by most puerperal women.

The results reinforce the importance and effectiveness of what the fourth step of the BFHI recommends. Discharge from hospital on exclusive breastfeeding provides empowerment and security necessary for women regarding breastfeeding at home, which is one of the indicators for maintaining exclusive breastfeeding in the first six months of the baby’s life, positively impacting the health of the mother and child binomial.

We emphasize the need to encourage and maintain good practices aimed at breastfeeding in delivery rooms, an important reference for quality in maternal and neonatal care. In this sense, skin-to-skin contact and breastfeeding in the first hour of the newborn’s life are recommended, as well as in cesarean surgeries.

It is hoped that this study will enable a reflection on the importance of maintaining good practices for the newborn, the woman and her family in the delivery room, constituting a supporting element of public policies to promote breastfeeding in our country.

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