



Factors associated with early skin-to-skin contact in a maternity hospital

Fatores associados ao contato pele a pele imediato em uma maternidade
Factores asociados con el contacto inmediato piel a piel en una maternidad

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ABSTRACT

Objective: To estimate the prevalence of early skin-to-skin contact and its association with sociodemographic, obstetric, assistance and birth factors in a maternity located in the Forest Zone of Minas Gerais (southeast Brazil). **Method:** A cross-sectional study was carried out with 222 primiparous women, by means of interview and data from the medical records. The data were coded, categorized, typed and analyzed using the Epi info 7.0 software. Multiple logistic regression was used. **Results:** The occurrence of skin-to-skin contact was 30% and was associated with: professional delivery not being the same as prenatal care (OR 3.17; 95% CI 1.52 -6.62), presence of companion (OR 3.35; 95% CI 1.67-6.73) and normal delivery (OR 15.59; 95% CI 7.50-32.41). **Conclusion and implications for practice:** It is essential to encourage normal childbirth, sensitize professionals and empower women about the right of the companion and skin-to-skin contact, as this minimizes interventions in the first hour, stimulates mother-baby bond and promotes breastfeeding.

Keywords: Breast Feeding; Postpartum Period; Infant, Newborn.

RESUMO

Objetivo: Estimar a ocorrência do contato pele a pele imediato e sua associação aos fatores sociodemográficos, obstétricos, assistenciais e de nascimento em uma maternidade da Zona da Mata Mineira. **Método:** Estudo transversal realizado com 222 primíparas por meio de entrevista e dados do prontuário. Os dados foram codificados, categorizados, digitados e analisados pelo programa Epi info 7.0. Utilizou-se a regressão logística múltipla. **Resultados:** A ocorrência do contato pele a pele imediato foi de 30% e foi associado ao: profissional do parto não ser o mesmo do pré-natal (OR 3,17; IC 95% 1,52 -6,62), presença de acompanhante (OR 3,35; IC 95% 1,67-6,73) e realização de parto normal (OR 15,59; IC 95% 7,50-32,41). **Conclusão e implicações para a prática:** É primordial incentivar o parto normal, sensibilizar profissionais e empoderar as mulheres sobre o direito do acompanhante e contato pele a pele, pois este minimiza as intervenções na primeira hora, estimula o vínculo e promove a amamentação.

Palavras-chaves: Aleitamento Materno; Período Pós-Parto; Recém-Nascido.

RESUMEN

Objetivo: Estimar la prevalencia del contacto inmediato piel a piel y su asociación con factores sociodemográficos, obstétricos, asistenciales y de nacimiento en una sala de maternidad en la Zona de la Mata Minera (Brasil). **Método:** Estudio transversal realizado con 222 mujeres primíparas, a través de entrevistas y datos de registros médicos. Los datos fueron codificados, categorizados, tipificados y analizados por el programa Epi info 7.0. Se utilizó la regresión logística múltiple. **Resultados:** La incidencia del contacto inmediato piel a piel fue del 30% y se asoció con: profesional del parto que no es lo mismo que de la asistencia prenatal (OR 3.17; IC del 95% 1.52 -6.62), presencia de acompañante (OR 3.35; IC 95% 1.67-6.73) y parto normal (OR 15.59; IC 95% 7.50-32.41). **Conclusión e implicaciones para la práctica:** Es esencial fomentar el parto normal, sensibilizar a los profesionales y empoderar a las mujeres sobre el derecho del acompañante y el contacto piel a piel, ya que esto minimiza las intervenciones en la primera hora, estimula el vínculo y promueve la lactancia materna.

Palabras clave: Lactancia Materna; Periodo Posparto; Recién Nacido.

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INTRODUCTION

Immediate term newborn care (NT) in the delivery room has undergone a process of transformation in recent years.¹ The quality of this care has been one of the main means to reduce the neonatal mortality rate, which currently accounts for almost 70% of deaths in the first year of life. In 2011, the Ministério da Saúde created the Rede Cegonha (Stork Network), aiming to qualify maternal and childcare, and one of the objectives was to ensure the incorporation of good practices into the NB.²

The good care practices with the NB also aim at reducing the number of procedures directed to it, in order to provide greater interaction between mother and baby especially in the first hour of life.¹ Among the immediate care recommended in the first hour of life are the presence of the companion, ambience, sound, luminosity, room temperature, late umbilical cord clamping, prevention of heat loss of the newborn (dried and heated in the maternal womb), skin-to-skin contact and breastfeeding during the first hour of life. These cares suffer variations in Brazilian obstetric services, being more prevalent in the Centro de Parto Normal or Casa de Parto that rely on the principles of completeness and humanization of childbirth and rely on the presence of obstetric nursing in the attention to childbirth and birth with valorization of the physiological process of parturition and birth.³ Early and continuous skin-to-skin contact should be performed without clothing, in ventral decubitus on the mother's chest, between the breasts, also undressed, right after birth⁴ and for 1 hour.⁵ This practice is the fourth step among the ten instituted in the policy of encouraging breastfeeding (Iniciativa Hospital Amigo da Criança - IHAC).⁵

Hormonal, sensory, physiological, immunological and behavioral factors are stimulated through skin-to-skin contact. This good practice produces benefits, such as: Strengthens the bond, encourages breastfeeding,⁶ stimulates maternal care, provides relief and tranquility for mother and baby, promotes and regulates the temperature of the baby⁶, preserves the acid basic balance, stabilizes breathing, reduces crying, helps bacterial colonization by the mother's cutaneous microbiota, prevents neonatal hypoglycemia, improves neurobehavioral parameters in childhood, and facilitates relationships,^{7,8} helps expel the placenta and reduces the chances of postpartum complications such as bleeding after birth.⁹

Despite these benefits and the current health policies directed to the NB, according to the pesquisa Nascer no Brasil (Birth in Brazil survey), in 2011 and 2012, only 28.2% of babies had skin-to-skin contact with their mother after birth.¹ It is understood that the priority remains the immediate care or interventions most often unnecessary to the NB, such as airway aspiration, umbilical cord section, eye prophylaxis, among others, and not humanized assistance. It is assumed that these procedures occur due to the routine of maternity wards, agility in assistance and the need to vacate obstetric beds.¹⁰ In this context, this study aims to estimate the occurrence of immediate skin-to-skin contact and its association with sociodemographic, obstetric, assistance and birth factors in primipara and their babies in a maternity ward in a city in the Zona da Mata of Minas Gerais.

METHOD

This study was approved by the Ethics and Research Committee with human beings of the Universidade Federal and is in accordance with Resolution No. 466/12 of the Conselho Nacional de Saúde. The interviews were conducted by a team trained with all primiparas who agreed to participate in the study, after presentation of the Free and Informed Consent Form (ICF).

This is a cross-sectional study, which is part of a larger research entitled "Determining factors for the decision of the birth route in primipara in a maternity ward in the Zona da Mata Mineira". The scenario of the study was the only maternity ward in a municipality that has a population of around 80 thousand inhabitants. This institution is accredited as a Teaching Hospital of a Universidade Federal and offers care to the Sistema Único de Saúde (SUS), private and agreements. The data collection took place from November 2015 to October 2016, during the daytime period, during the seven days of the week.

The study population was composed of primiparous puerperal admitted to the maternity ward at delivery. Inclusion criteria were primiparous vaginal delivery or cesarean section, with live fetus at the beginning of labor. The exclusion criterion was the impossibility of performing the procedure due to a contagious infection. For the sample calculation, we considered a population of 739 primiparous in 2014, with a cesarean section frequency of 71% and normal births of 29% (data obtained in the institution's delivery book). The established significance level was 95% and the tolerable error 5%. The sample consisted of 222 primiparous puerperal women.

The primary data were obtained through the application of a structured questionnaire to the puerperal women during the first 24 hours after birth, and the secondary data were taken from the medical record through a questionnaire like the one applied to the puerperal woman. These instruments contain various information related to the sociodemographic and obstetric profile, obstetric care, birth conditions and NB characteristics.

The dependent variable (skin-to-skin contact) was checked from the question: "Has the newborn been put in skin-to-skin contact with you in the delivery room? After the question, the interviewers explained how this procedure should be. The factors investigated (independent variables) as potentially associated with skin-to-skin contact were: maternal age in years, municipality of maternity and region, self-reported skin color (white, black, brown), average schooling in years (standard deviation), marital status (single, married, consensual union), paid work (yes, no), income in minimum wage, family income in minimum wage, planned pregnancy (yes, no), prenatal financing (SUS, private), number of prenatal consultations, previous health problem (yes, no), health problem developed during pregnancy (yes, no), interurrences in pregnancy (yes, no), birth route (normal, cesarean section), even professional at prenatal and childbirth (yes, no, did not know how to inform), escort (yes, no, did not know how to inform), problems in childbirth (yes, no, did not know how to inform), traumatic birth to the NB (yes, no, no information), Apgar value in the first minute, Apgar value in the fifth minute, birth weight in grams, fetal malformation

(yes, no, no information) and NB forwarded to (nursery, UTI, joint accommodation, could not inform).

In the descriptive analysis of the variables the absolute and relative frequencies, means, standard deviations and interquartile intervals were estimated in order to characterize the studied population regarding the study variables. Then, inferential analysis (analytical) was conducted to identify the factors associated with the outcome studied (skin-to-skin contact). To verify the associations between the categorical variables, the chi-square test of Pearson was used. In the continuous variables the normal distribution was tested using the *Kolmogorov Smirnov test*. We used the parametric test (Student's t) or non-parametric test (Mann-Whitney), according to the result of the normality test. For all tests the 95% confidence level was fixed.

The association between skin-to-skin contact and the explanatory variables was made from the binary and multiple logistic regression model. For the selection of the final logistic regression model, the *backward* elimination method was used because of likelihood (LR). It begins with the inclusion of all significant explanatory variables in the model ($p < 0.20$) in the bivariable analysis. The variables are then removed one at a time, starting with the one that reduces the LR by the minimum amount. The equation is evaluated at each step and the procedure

is repeated until each variable that remains in the model explains a significant portion of the variation observed in the response.¹¹ In the multivariable model, the variables that presented $p < 0.05$ were considered significant. To evaluate the magnitude of the associations, the odds ratio and their respective 95% confidence intervals were used. All the information was compiled and integrated in a single database. The collected data were coded, categorized, typed and analyzed in an Epi info 7.0 database.

RESULTS

Only 30% of babies were placed in immediate skin-to-skin contact and, even counting the median of the first- and fifth-minute Apgar around 9 and 10, respectively; the average birth weight was 3.2 kg. In addition, most NBs did not suffer traumatic delivery and were referred to joint housing (Table 1).

In the bivariate analysis, the frequency of skin-to-skin contact was higher among the primipara who were not assisted by the same prenatal professional, with a companion in the delivery room and among those who performed the normal delivery. It should be noted that the women who underwent normal childbirth showed a greater frequency difference (Table 2).

Table 1. Birth characteristics of primiparous women interviewed in the maternity hospital of the municipality of Zona da Mata, Minas Gerais, Brazil, 2015-2016.

Characteristics	N	%	
Problem during delivery			
Yes	16	7,7	
No	191	92	
Skin contact			
Yes	62	30	
No	142	70	
Traumatic birth for the newborn			
Yes	18	8,8	
No	186	91	
Fetal malformation			
Yes	3	1,5	
No	198	99	
Newborn referred to			
Nursery	14	6,8	
ICU	10	4,8	
Joint accommodation	183	88	
	Median	Minimum	Maximum
Apgar in the 1st minute	9	5	10
Apgar in the 5th	10	7	10
Weight at birth	3.2	1,9	4.9

Factors associated with skin-to-skin contact

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Table 2. Sociodemographic, obstetric, assistance and birth characteristics according to skin-to-skin contact in primipara interviewed in the maternity hospital of the municipality of Zona da Mata, Minas Gerais, Brazil, 2015-2016.

Maternal characteristics	Skin touch				p* value
	Yes		No		
	N	%	N	%	
Municipality					
Maternity Municipality	35	30.4	80	69.6	0.988 ^b
Others	27	30.3	62	69.7	
Skin Color					
White	15	24.6	46	75.4	
Black	14	32.6	29	67.4	0.533 ^b
Brown	31	32.3	65	67.7	
Marital situation					
Single	19	32.2	40	67.8	
Married	32	27.3	85	72.7	0.373 ^b
Consensus Union	11	39,3	17	60,7	
Renumbered work					
Yes	29	26.1	82	73.9	0.148 ^b
No	33	35.5	60	64.5	
Planned pregnancy					
Yes	38	29.2	92	70.8	0.632 ^b
No	24	32.4	50	6.6	
Prenatal financing					
SUS	40	32.3	84	67.7	0.470 ^b
Private	22	27.5	58	72.5	
Prior health problem					
Yes	13	40.6	19	59.4	0.170 ^b
No	49	28.5	123	71.5	
Health problem developed during pregnancy					
Yes	27	27	73	73	0.301 ^b
No	35	33.7	69	66.3	
Intercurrence in pregnancy					
Yes	4	23.5	13	76.5	0.520 ^b
No	58	31	129	69	
Route of birth					
Normal	43	70.5	18	29.5	<0.01 ^{b*}
Cesarean	19	13.3	124	86.7	
The professional who delivered the baby was the same as the prenatal one					
Yes	14	20	56	80	0.018 ^b
No	48	36.1	85	63.9	
Escort in the delivery room					
Yes	45	37.5	75	62.5	0.009 ^b
No	17	20.5	66	79.5	
Problems during delivery					
Yes	2	12.5	14	87.5	0.105 ^b
No	60	31.9	128	68.1	
Traumatic birth for the newborn					
Yes	3	21.4	11	78.6	0.469 ^b
No	53	30.6	120	69.4	
Fetal malformation					
Yes	2	40	3	60	0.658 ^b
No	55	30.7	124	69.3	
Newborn referred to					
Nursery	4	28.6	10	71.4	
UTIN	3	30	7	70	0.984 ^b
Joint accommodation	55	30.6	125	69.4	

* Significance level <5%; a Student t-test; b Pearson chi-square.

Table 2. Continued...

Maternal characteristics	Yes		No		P*value
	Average	DP	Average	DP	
Maternal age (in years)	25.76	6.1	25.8	5.9	0.960 ^a
Schooling (in years)	11.48	3.5	11.38	3.4	0.841 ^a
Average income in minimum wage (DP)	0.71	1.1	0.82	1.2	0.520 ^a
Average family income in minimum wage (DP)	2.14	2.2	2.53	3.6	0.436 ^a
Number of Prenatal Consultations (PD)	8.38	2.9	8.71	2.7	0.458 ^a
Apgar in the 1st minute (DP)	7.73	2.8	7.32	2.9	0.361 ^a
Apgar at the 5th minute (DP)	8.97	2.5	8.49	3	0.270 ^a
Weight at birth (SD)	3.18	0.4	3.23	0.4	0.460 ^a

* Significance level <5%; a Student t-test; b Pearson chi-square.

Table 3. Raw and adjusted odds ratio values of the association between skin-to-skin contact and socio-demographic, obstetric, welfare and birth characteristics of primipara interviewed in the maternity hospital of the municipality of Zona da Mata, Minas Gerais, Brazil, 2015-2016.

Maternal characteristics	Raw analysis		Adjusted analysis	
	OR	IC95%	OR	IC95%
Paid work				
Yes	1	-	-	-
No	1.56	0.85-2.86	-	-
Prior health problem				
Yes	1.71	0.78-3.74	-	-
No	1	-	-	-
Route of birth				
Normal	15.59	7.50-32.41	15.59	7.50-32.41
Cesarean	1	-	1	-
The professional who delivered the baby was the same as the prenatal one				
Yes	1	-	-	-
No	2.27	1.14-4.55	-	-
Companion in the delivery room				
Yes	2.33	1.22-4.46	-	-
No	1	-	-	-
Problem during delivery				
Yes	1	-	-	-
No	3.34	0.72-14.29	-	-

In the raw analysis, the variables: professional who delivered the baby was the same as the prenatal one; escort in the delivery room and route of delivery remained significant as to the accomplishment of the skin-to-skin contact. The primiparas who did not deliver with the same prenatal professional and had a companion had approximately twice as much chance, respectively, of performing skin-to-skin contact immediately. Women who had a normal delivery had about 15 times more chance to experience this good practice, when compared to those who underwent cesarean section. After the adjusted analysis, the only variable that remained was the delivery route (Table 3).

It is noteworthy that, after the logistic regression, the variable - birth route presents itself as a possible confounding factor. Therefore, it was opted for its exclusion and for a new logistic

regression. Thus, the variables remained: they did not deliver with the same prenatal professional and companion, who had about three times more chance of immediate skin-to-skin contact after the adjusted analysis (Table 4).

DISCUSSION

The occurrence of immediate skin-to-skin contact in this sample of primipara falls short of what is recommended by the WHO for a Hospital Amigo da Criança (HAC), as it should be performed in at least 80% of vaginal birth mothers or cesarean sections without general anesthesia.¹² Although the motherhood of this study is not yet a HAC, it is in the process of becoming, therefore, the execution of the fourth step of the IHAC is an essential initiative for the consolidation of this project.

Table 4. Values of gross and adjusted odds ratio of the association between skin-to-skin contact and renumbered work, previous health problem, even professional, escort and problem during delivery of women interviewed in the maternity hospital of the municipality of Zona da Mata, Minas Gerais, Brazil, 2015-2016.

Maternal characteristics	Raw analysis		Adjusted analysis	
	OR	IC95%	OR	IC95%
Paid work				
Yes	1	-	-	-
No	1.56	0.85-2.86	-	-
Paid work				
Yes	1.71	0.78-3.74	-	-
No	1	-	-	-
Paid work				
Yes	1	-	1	-
No	2.27	1.14-4.55	3.17	1.52-6.62
Companion in the delivery room				
Yes	2.33	1.22-4.46	3.35	1.67-6.73
No	1	-	1	-
Problem during delivery				
Yes	1	-	1	-
No	3.34	0.72-14.29	3.84	0.81-18.30

The occurrence of skin-to-skin contact in this maternity ward was similar to the result found in the Birth in Brazil¹ survey and was much lower than in the study conducted in Northeast Brazil, where 41.4%¹³ and 93.2% of babies were placed in immediate skin-to-skin contact with their mothers. In the latter study, births were assisted by an obstetrician.¹⁴ The lower occurrence of skin-to-skin contact may be related to the fact that this research evaluated only primipara, since in one study¹ a higher number of interventions performed in the first hour of life in NBs of primiparous women were found, from which it is assumed that these women are more insecure, being more likely to accept the recommendations of the health professional due to the lack of information and the lack of experiences of giving birth.

Sociodemographic factors were not a significant association with skin-to-skin contact. Another study also did not significantly relate individual factors, such as age, race, education, marital status, and socioeconomic status, to the performance of this practice.¹⁵ It is noteworthy that the financing of maternity and the type of childbirth to which they are submitted may influence the performance of skin-to-skin contact, since there is greater investment in the implementation of HAC in public maternity hospitals¹⁶, and women with lower purchasing power are more likely to perform normal childbirth.¹⁷ On the other hand, a study showed greater difficulty in adherence in the Northeast of the country, even with the IHAC consolidated in the area.¹⁵ In another study it was found that women from the countryside, with low

schooling and financing by the SUS had less chance of skin-to-skin contact.¹

Women generally place greater trust in the health professional who accompanies them at prenatal care and delivery,¹⁸ because of the greater bond between them,¹⁹ so it is up to them to offer guidance according to the scientific evidence.^{18,19} Thus, it is expected that skin-to-skin contact after delivery will occur more frequently in this group of women, a result contrary to that found in this study. Furthermore, it should be noted that these women are funded by an agreement or private.

The association of the presence of the escort to the realization of skin-to-skin contact was observed in this study. It is certified that the companion favors the humanization of obstetric and neonatal assistance, reduces unnecessary interventions and contributes to the accomplishment of good practices. It stimulates the early interaction of the binomial, increases the bond and allows women to be more calm and secure in having their NB in their arms in the first hour of life.^{1,8}

It is known that all active and low-risk NB should be placed in skin-to-skin contact with the mother right after birth, remaining there in its first hour of life. Routine examinations and procedures should only be performed after this contact has been established, except in case of medical indication.³ However, in this study, although 92.3% of births did not present any problems and most babies presented Apgar index around 9 and 10 in the first and fifth minute of life, respectively, there was a low occurrence of skin-to-skin contact.

The results allowed associating a very significant variable to the realization of skin to skin contact, the birth route. Other studies^{1,8,15,19,20} confirm this association, showing that there is greater difficulty in performing this practice when the birth occurs by cesarean section. In this sample, the mother who had a normal delivery had a chance, approximately, 15 times greater to perform the skin to skin contact than the one who had a cesarean section. Obstacles include delayed interaction after birth, a decrease in the baby's alert state, mothers being more sleepy due to analgesia, a reduced number of professionals, a narrow stretcher,²⁰ refusal by anesthesiologists and obstetricians^{8,20} and the fact that the right to have a companion present during the cesarean section is often not allowed.

It is noted that the low compliance with the fourth step of the BFHI is directly related to the obstetric model in force in Brazil, which is marked by unnecessary and medicalized interventions.¹⁵ It is added that high cesarean rates make it difficult to perform this good practice.¹⁵ Although cesarean section is a difficult situation to perform, it is understood that good practices should be performed in both types of births.^{6,11}

It is believed that the transformation of the research scenario involves changing the attitude of all health professionals and empowering women, starting with prenatal care with educational and preventive actions up to the services offered by maternity. The inclusion of an obstetric nurse in the care of the puerperal pregnant cycle, especially in the maternity ward, can help this change, since this professional understands childbirth as a physiological event, contributes to the humanization of childbirth and birth, breaks with medicated childbirth, and reduces the chances of unnecessary interventions.¹⁴

Despite the existence of public health policies such as Stork Network and HCIAC that encourage immediate skin to skin contact, it is observed the low occurrence of this good practice in the country, by means of the research - Birth in Brazil - and in the municipality of study. Considering the several benefits derived from this practice, this work contributes to reinforce the importance of establishing strategies aimed at implementing these policies, in order to improve and qualify the assistance offered to the mother-baby binomial.

CONCLUSIONS

We identified the limiting factors related to not having immediate skin-to-skin contact between mother and baby: the professional who performed the prenatal care being the same person who performed the delivery, women without an escort during the delivery, and women who underwent cesarean section. Thus, the incentive to normal childbirth should be promoted in order to reduce the high cesarean rates, to sensitize medical professionals and other health professionals involved in prenatal, childbirth, and postpartum care, and to stimulate good practices in all obstetric settings, including surgical centers.

Health professionals who are involved in obstetric care need to concretely support the practice of skin-to-skin contact, due to its numerous advantages and to benefit a greater number of

mothers and babies. It is proposed that through continued education the quality of care can be improved and it is also suggested the creation of a Protocol on the achievement of immediate skin-to-skin contact, with the aim of standardizing this contact in the maternity ward of the study, because it is understood in different ways by professionals.

Moreover, it is assumed the need to inform women about this practice, its benefits, the way it should be performed and the right of the companion, as well as to stimulate active participation in the parturition process. Women's empowerment is essential to guarantee qualified and humanized care.

The limitation of this study is related to the time of skin-to-skin contact, it was not possible to evaluate this variable, due to the fact that most of the puerperal do not know how to inform the time of contact and the lack of register in the medical chart by the professionals. Another important aspect that could interfere in the performance of the fourth step of the IHAC is the fact that the maternity ward of this study is a reference in high risk pregnancy of the micro-region, which could show a greater number of complications and interventions during delivery, contraindicating the performance of this practice. However, in this sample the rate of births with problems was small and was not associated with skin-to-skin contact, thus not being considered a limiting factor for the realization of early skin-to-skin contact.

It is necessary to carry out new researches on the subject, because up to the beginning of this study, there were no researches related to this subject in the municipality of study, and there were few researches in the Brazilian territory. And yet, it is necessary to better understand the events and physiological benefits that the skin to skin contact can bring to the baby and if it really contributes to the transition process between the intra and extrauterine environment.

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