

# Pain intensity and immediate puerperal discomforts

## *Intensidade de dor e desconfortos puerperais imediatos*

Thais do Amaral Tomasoni<sup>1</sup>, Jordana Barbosa Silva<sup>2</sup>, Thalita Cristina Wolff Bertotti<sup>1</sup>, Jessica Perez<sup>1</sup>, Raciele Ivandra Guarda Korelo<sup>1</sup>, Rubneide Barreto Silva Gallo<sup>1</sup>

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### ABSTRACT

**BACKGROUND AND OBJECTIVES:** The immediate puerperium extends until the 10th day after delivery, and this period is characterized by the return of the woman's body to the pre-pregnancy state. The aims of the study were to identify pain intensity and the major discomforts reported by women in the immediate puerperium period and to analyze the difference in puerperal discomfort according to parity and type of delivery.

**METHODS:** The participants included 107 women attended in a public maternity ward. Pain and discomfort were assessed using the semi-structured physical therapy assessment form and pain intensity was measured using the visual analog scale (VAS). Mann-Whitney and Kruskal-Wallis tests were applied to identify differences in discomfort according to the type of parity and delivery.

**RESULTS:** Colic pain related to breastfeeding with  $4.81 \pm 2.52$  intensity was reported by 55.14% of mothers in the puerperium, perineal pain with  $4.06 \pm 2.09$  intensity by 30.84%, low back pain with  $4.38 \pm 2.09$  intensity by 28.97%, breast pain with  $4.76 \pm 2.63$  intensity by 23.36% and cesarean related pain with  $5.21 \pm 2.01$  intensity was reported by 17.75% of mothers. No significant differences in pain intensity were found according to parity. However, significant differences were found for perineal pain intensity and cesarean section.

**CONCLUSION:** Pain intensity evaluated by the visual analog scale was classified as moderate or light.

**Keywords:** Labor pain, Postpartum period, Women's health.

### RESUMO

**JUSTIFICATIVA E OBJETIVOS:** O puerpério imediato estende-se até o 10º dia após o parto, e este período é caracterizado pelo retorno do corpo da mulher ao estado pré-grávidico. Os objetivos deste estudo foram identificar a intensidade da dor e principais desconfortos relatados pelas mulheres no puerpério imediato e analisar a diferença dos desconfortos puerperais de acordo com a paridade e tipo de parto.

**MÉTODOS:** Participaram deste estudo 107 puérperas assistidas em uma maternidade pública. A dor e os desconfortos foram avaliados por meio da ficha de avaliação fisioterapêutica semiestruturada, e a intensidade da dor foi mensurada com a escala analógica visual. Os testes de Mann-Whitney e Kruskal-Wallis foram aplicados para identificar diferenças no desconforto a partir do tipo de parto e paridade.

**RESULTADOS:** Dor em cólica relacionada à amamentação de intensidade  $4,81 \pm 2,52$  foi referida por 55,14% das puérperas, dor perineal de intensidade  $4,06 \pm 2,09$  foi referida por 30,84%, lombalgia de intensidade  $4,38 \pm 2,09$  foi referida por 28,97%, dor nas mamas de intensidade  $4,76 \pm 2,63$  foi referida por 23,36% e dor relacionada a cesariana de intensidade  $5,21 \pm 2,01$  por 17,75%. Não foram encontradas diferenças significativas na intensidade da dor de acordo com a paridade, porém foram encontradas diferenças significativas para intensidade da dor perineal e incisão da cesariana.

**CONCLUSÃO:** A intensidade da dor avaliada pela escala analógica visual foi classificada como moderada ou leve.

**Descritores:** Dor do parto, Período pós-parto, Saúde da mulher.

### INTRODUCTION

The postpartum period is called puerperium and can be divided into: immediate – from 1<sup>st</sup> to 10<sup>th</sup> day, late – from 10<sup>th</sup> to 45<sup>th</sup> day and remote – after the 45<sup>th</sup> day. In this phase, local and systemic changes return the women's body to its pre-gravidic state<sup>1</sup>. During the immediate puerperium, some inherent discomforts related to the birth process are present. Pain is the most frequent symptom reported by mothers during this period and can cause limitations on movement, walking and changing of posture in bed<sup>2</sup>, beyond complicating the bond between mother and newborn (NB)<sup>3</sup>.

Due to its multifactorial and complex phenomenon, treatment of pain demands multi professional approach, aiming at better quality of life for women<sup>4</sup>. Comprehending and evaluating pain facilitates its profiling, but also brings the physiotherapist clo-

Thais do Amaral Tomasoni – <https://orcid.org/0000-0002-9296-0994>;

Jordana Barbosa da Silva – <https://orcid.org/0000-0001-9867-3788>;

Thalita Cristina Wolff Bertotti – <https://orcid.org/0000-0003-0123-6413>;

Jessica Perez – <https://orcid.org/0000-0001-7643-8920>;

Raciele Ivandra Guarda Korelo – <https://orcid.org/0000-0002-6754-098X>;

Rubneide Barreto Silva Gallo – <https://orcid.org/0000-0001-9953-0260>.

1. Universidade Federal do Paraná, Departamento de Prevenção e Reabilitação em Fisioterapia, Curitiba, PR, Brasil.

2. Universidade Federal de São Carlos, Departamento de Fisioterapia, São Carlos, SP, Brasil.

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#### Correspondence to:

Rubneide Barreto Silva Gallo

Av. Coronel Francisco Heráclito dos Santos, 210.

81531-980, Curitiba, PR, Brasil.

E-mail: rubneidegallo@gmail.com

ser to the patient, making the professional more aware of the meaning of pain and its repercussions. However, most health professional activities during the puerperium are directed to the NB and are scarce when it comes to the self-care and discomfort reduction for mothers<sup>5</sup>.

The Ministry of Health advocates a qualified and humanized attention to women during the puerperium<sup>6</sup>. Nonetheless, professional action based on the biomedical model and the ignorance of complaints and real complications during puerperium contribute to the non-conformity between the indicated assistance model and the one found in the health institutions<sup>7</sup>. On the other hand, there is a growing demand for physiotherapeutic care in Women's Health, implying an adequate assistance founded in the whole puerperium-gravidic cycle. It's important that the public maternities' physiotherapists understand the profile of the mothers in the puerperium in order to obtain information that addresses the better approach of the preventive and physiotherapeutic evaluation and intervention<sup>1</sup>. In addition, the role of the physiotherapist is considered to assist in improving of assistance directed to puerperal women<sup>8</sup>, from promotion and prevention to health intervention<sup>9</sup>.

Therefore, the primary objective of this study was to evaluate the intensity of pain and the main discomforts reported by women in the immediate puerperium. The secondary objective was to evaluate the difference of the puerperal discomforts according to the parity and type of delivery.

## METHODS

Cross sectional study with 107 women during the immediate puerperium, through the first 17h from birth, in the period of August 2016 and May 2017.

Mothers with a usual level of risk which were being attended at an accommodation in a public maternity ward and with no cognitive problems were included. The mothers agreed in participating in the study after reading and signing the Free and Informed Consent Term (FICT). According to the 466/2012 Resolution of the National Health Council.

The following participants were excluded: those that asked to be suspended from the research, that didn't complete the evaluation form or that had missing information in their medical records and those that had puerperal complications.

One of the tools used in this research was a semi-structured questionnaire developed by the researchers in order to profile the sample. This questionnaire is used in physiotherapeutic attendance and contains questions about the personal and obstetric data of the participants. This tool also contains questions related to urinary and intestinal complaints during pregnancy. Next, the participants were questioned about the presence of puerperal discomforts in the upper limbs (UL), lower limbs (LL), torso, cesarean incision and perineal area, apart from the classification of discomforts related to the urogynecological, intestinal and circulatory symptoms. After confirming the presence of pain, the participant was to classify the intensity of pain in the visual analog scale (VAS)<sup>10</sup>, which consists in a 10cm ruler, numbered from zero to 10, in which zero is the total absence of pain and

10 the worst imaginable pain. The intensity of pain reported by the participants was classified in light (1-3), moderate (4-6) and severe (7-10).

The study was approved by the Human Research Ethics Committee from the *Hospital das Clínicas*, according to number 1.674.698, CAAE 56163616.8.0000.0096.

## Statistical analysis

The data were processed by the SPSS software, version 21.0. The numeric variables are presented in mean±standard deviation. The descriptive variables were analysed by frequency (n) and percentage (%). To perform the difference analysis, data normality was analyzed by the Kolmogorov-Smirnov test. To analyze the difference in pain intensity according to parity, the Mann-Whitney test was applied. Participants were allocated to two groups: 1) primiparous; and 2) multiparous. For the difference analysis of the type of delivery the Kruskal-Wallis and the Mann-Whitney post-hoc tests were applied. The mothers were allocated in four different groups, according to the type of delivery: a) with intervention (episiotomy and/or forceps); b) grade 1 or 2 laceration; c) cesarean section; d) normal. The significance value was established at  $p < 0.05$ .

## RESULTS

The participants had an mean age of  $26 \pm 6.44$  years old, in its majority multiparous (58.9%), had white skin (60.7%), complete high school (54.2%), paid occupation (56.1%), stable union (43.9%) and the majority had an escort accompanying them during all the labor and immediate postpartum (97.2%).

Mean gestational age in weeks was  $39 \pm 1.16$  with a 95% confidence interval (95%CI) from 39 to 40 weeks, with mean prenatal appointments of  $9 \pm 3.0$  and labor time of  $486 \pm 334.7$  minutes; 95%CI: 3335-638.2). Most puerperal women had vaginal delivery (73.7%); 6.5% had vaginal delivery with episiotomy and/or forceps and one participant had grade 3 laceration after delivery (0.9%). The mean weight of the NBs was  $3.19 \pm 0.4$  kg (95%CI: 2.99-3.38). The Apgar index was higher than seven in the 1<sup>st</sup> minute (77.6%) and in the 5<sup>th</sup> minute (82.2) of NBs. Puerperal women reported discomfort related to breastfeeding and intestine, as well as circulatory, urogynecological and musculoskeletal discomfort (Table 1).

The average of all discomforts reported by the puerperal mothers and evaluated by the VAS was classified as moderate. In the individual analysis of the VAS, most participants classified cesarean pain, breast pain and back pain as moderate. The intensity of perineal pain and colic pain during breastfeeding was mostly classified as light. Pain considered severe was: colic pain during breastfeeding 18 (16.8%) cesarean section incision, perineal and back pain, 5 (4.7%) and breast pain 4 (3.7%) (Table 2).

Table 3 presents the average and standard deviation values based on the classification of discomfort intensity by the puerperal mothers and the difference result of pain intensity according to the parity and type of delivery. The pain intensity was superior in women that went through cesarean delivery. In ascending order, the main discomforts found in this study were: cesarean pain,

**Table 1.** Immediate puerperal discomfort reported by puerperal mothers

	n (%)
Discomfort when breastfeeding	
Breast pain	25 (23.3)
Breast trauma	9 (8.3)
Colic during breastfeeding	58 (55.1)
Intestinal discomfort	
Diarrhea	5 (4.7)
Constipation	8 (7.5)
Flatulence	16 (15)
Fecal incontinence	6 (5.6)
Constipation and flatulence	9 (8.4)
Circulatory discomfort	
Varices	9 (8.4)
Hemorrhoid	3 (2.8)
Edema	18 (16.8)
Varicose veins and edema	4 (3.7)
Urological discomfort	
SUI in pregnancy	31 (39.2)
SUI in the puerperium	3 (3.1)
Musculoskeletal discomfort	
Carpal tunnel syndrome	2 (1.8)
Back pain	31 (28.9)
Weakness of UL	7 (6.5)

SUI = stress urinary incontinence; UL = upper limbs.

colic pain during breastfeeding, breast pain, back pain and perineal pain. No significant differences were found for the intensity of pain reported by women according to the parity between primiparae and multiparae. Also, no significant differences were found when women were compared according to the type of delivery for the intensity of pain reported in the breasts, colic during breastfeeding and back pain. However, significant differences were found for pain intensity in the cesarean section and perineal pain in women with cesarean and vaginal delivery with episiotomy and/or forceps intervention, vaginal delivery with laceration, and normal delivery.

It's worth mentioning that puerperal mothers received routine analgesic drugs every 6 hours during the period of hospitalization, such as paracetamol and dipyrone.

**Table 3.** Intensity of pain during the immediate puerperium

Variables	Mean±SD	p-value*	p-value*
Cesarean incision	5.21±2	0.38	0.00 <sup>A,C,E</sup>
Perineal	4.06±2.09	0.99	0.00 <sup>B,D,F</sup>
Breasts	4.76±2.63	0.73	0.59
Colics during breastfeeding	4.81±2.52	0.21	0.86
Back pain	4.38±2.09	0.06	0.09

p\* = p<0.05; Mann-Whitney test according to parity; p# = p<0.05; Kruskal-Wallis test according to type of delivery; Post-hoc (type of delivery) = <sup>A</sup>p<0.002 in relation to group A (0) and C (3.80); <sup>B</sup>p=0.02 in relation to group A (2) and C (0); <sup>C</sup>p<0.000 in relation to group B (=0) and C (3.80); <sup>D</sup>p<0.000 in relation to group B (1.97) and C (0); <sup>E</sup>p<0.000 in relation to group C (3.80) and D (VAS=0); <sup>F</sup>p<0.000 in relation to group C (=0) and D (1.13).

## DISCUSSION

During the immediate puerperium, women go through physical, psychological and social alterations. Still in the hospital puerperal women present complaints related to the puerperium, like pain, insecurity and fear. Post-partum complications can affect quality of life and state of health of the puerperal mothers and the NB<sup>11</sup>. Therefore, during the puerperium, the multidisciplinary team must be attentive to the elaboration of a care plan that offers the necessary support to women, regarding self-care, transformations related to post-partum and NB care<sup>12</sup>.

Pain was classified as moderate for all of the mentioned discomforts after 40h from birth. It's important to notice that the puerperal mothers were receiving analgesics each 6h, which is part of the hospital routine, and their usage did not seem to resolve the cases of pain.

Pain can be limiting for women, since it can interfere in mobility and performance of daily activities<sup>13</sup>. In this study, the puerperal mothers reported discomforts related to breastfeeding and associated to the intestinal, circulatory, urological and musculoskeletal systems.

In accordance to these data, the study<sup>14</sup> also found high prevalence of discomfort in women during the immediate puerperium.

**Table 2.** Prevalence of discomfort in the immediate puerperium reported by study participants

Pain intensity	VAS	Cesarean n (%)	Perineal n (%)	Breast n (%)	Colic during breastfeeding n (%)	Back pain n (%)
	0	88 (82.2)	74 (69.2)	82 (76.6)	48 (44.9)	76 (71)
Mild pain	1	1 (0.9)	3 (2.8)	1 (0.9)	2 (1.9)	1 (0.9)
	2	1 (0.9)	4 (3.7)	4 (3.7)	8 (7.5)	5 (4.7)
	3	1 (0.9)	8 (7.5)	5 (4.7)	14 (13.1)	6 (5.6)
Moderate pain	4	2 (1.9)	5 (4.7)	2 (1.9)	9 (8.4)	5 (4.7)
	5	8 (7.5)	3 (2.8)	6 (5.6)	6 (5.6)	7 (6.5)
	6	1 (0.9)	3 (2.8)	3 (2.8)	1 (0.9)	2 (1.9)
Severe pain	7	2 (1.9)	2 (1.9)	0	4 (3.7)	2 (1.9)
	8	2 (1.9)	3 (2.8)	0	9 (8.4)	2 (1.9)
	9	1 (0.9)	0	1 (0.9)	3 (2.8)	0
	10	0	0	3 (2.8)	2 (1.9)	1 (0.9)

VAS = visual analog scale.

Approximately 73% of patients reported some discomfort, being the cesarean the type of delivery most associated with the presence of discomforts. Another Brazilian study<sup>15</sup> with puerperal mothers considered pain as a the maternal complication most frequent in the puerperium, with similar numbers, independently of the types of delivery. However, cesarean delivery was associated with a higher risk of maternal complications and feminine sexual dysfunction and presented a negative correlation to the incentive to breastfeeding practices.

In this study, the greatest intensity of pain was attributed to the pain in the cesarean incision, with confidence interval varying from 4.23 to 6.18. No significant differences between pain intensity in women regarding type of delivery were found.

Nonetheless, the pain intensity on the cesarean incision was superior to the related by women who underwent normal delivery or had some sort of complication and/or laceration.

It is known that cesarean rates have increased in many countries, including Brazil, contrary to the World Health Organization (WHO) guidelines for vaginal delivery<sup>16,17</sup>. Pain after a cesarean section is closely linked to tissue injury due to inflammatory reactions resulting from a traumatic process that can produce pain<sup>1</sup>. In addition, the abdominal scar resulting from the surgery may impair the action of drainage by the lymphatic system, and restrict movement due to the presence of pain and/or fear, increasing the period of bed stay and favoring the emergence of edemas of the SL<sup>14</sup>. Similar results were found in the study<sup>2</sup>, which measured pain in the cesarean section and found a range of 1 to 9 during rest, with a mean pain lower than that found in this study <5.21. However, 75% of study participants reported pain located around the cesarean section incision. Similar to these findings, the study<sup>14</sup> found a higher prevalence of abdominal pain, cervicalgia and edema in women who underwent cesarean section.

Among the discomforts reported by the puerperal mothers, the perineal pain presented a lower mean, but was similar to the result of Brazilian studies in which the mean perineal pain was 4.8<sup>18</sup> and 4.2<sup>19</sup>. It is also noteworthy that in this study less than 50% of the sample presented perineal pain and of these only 3.6% had episiotomy and 0.9% third degree laceration. In the present study, the highest frequency of complaints was associated with colic pain during breastfeeding, with the discomfort being the second highest pain intensity. This symptom is common during the postpartum period<sup>20</sup>, regardless of the route of delivery<sup>21</sup> and occurs because during breastfeeding there is release of oxytocin, the hormone responsible for milk ejection and for promoting uterine contractions<sup>20</sup>. The prevalence of colic during breastfeeding was 40% in study participants<sup>12</sup> undergoing cesarean section. In the study<sup>13</sup>, 15% of women in the immediate puerperium presented this symptom.

Considering the reports of breast pain, 66% of the participants of this study presented breast fissures and reported moderate to severe pain in the area. The percentage of women with such complaint was higher than the data presented in a study with puerperal women 2 and 4 months after delivery<sup>22</sup>. However, similarly to the present study, the intensity of pain reported by puerperal women ranged from moderate to severe to 66.7% of participants<sup>22</sup>. This finding may be related to the deficit of fol-

low-up and guidance of health professionals in the pregnancy and/or puerperal period. The multi professional team should attend the puerperal women based on their social, cultural and ethical context. Difficulties related to breastfeeding can lead to several consequences, such as early weaning, which puts the baby's health at risk<sup>23,24</sup>.

According to the results of this study, back pain was one of the main discomforts reported by puerperal women. A similar result was found in the study<sup>25</sup>, which highlighted back pain as the main discomfort, being classified with moderate intensity. This discomfort can lead to motor disability and can be reported by women who have recently given birth regardless of the type of delivery<sup>14</sup>. However, the results of the studies<sup>2,7</sup> showed a prevalence of discomfort and functional limitations during daily activities in puerperal women who underwent cesarean delivery. However, it is worth highlighting that changes in the spine resulting from physical changes in pregnancy may contribute to the presence of marked pain in the lumbar region<sup>13</sup>. Therefore, individual physical evaluation by health professionals may direct the resolution of the complaint earlier<sup>14</sup>.

Although parity is an influential variable in postpartum recovery and perception of women's pain<sup>26</sup>, the results of this study do not support this hypothesis, given the absence of significant differences in the analysis of pain intensity reported by primiparous and multiparous women. Thus, the results of this study emphasize the importance of humanized attention of women with or without previous experience with childbirth and postpartum period. Concomitant to this finding, the results of the study<sup>7</sup> with women during the immediate puerperium did not indicate an association between parity and functional limitations. However, it is worth noting that previous experiences related to childbirth can be modulating for the threshold of pain, and one should consider the subjectivity and individuality of pain experience, since it is based on biological, psychological and environmental responses<sup>26</sup>.

The analysis of data of the present study calls attention to the need of promotion of activities for the puerperal women's health, since these are scarce and mostly cover only the NB care and not the advising for women's selfcare<sup>5</sup>. Most postpartum discomfort can be avoided or reduced by early postpartum interventions<sup>27</sup>. Even complaints of pain can be reduced after non-pharmacological physiotherapeutic intervention, leading to 100% adherence to treatment<sup>13</sup>. Thus, the importance of interdisciplinary health practices and the promotion of maternal and child care<sup>14</sup> is highlighted. Information and resolution activities during the immediate puerperium are well evaluated by women and could be implemented in the routine maternity services<sup>9</sup>.

The physiotherapist is a qualified professional who composes multi professional teams and can help in reducing puerperal discomfort through the application of specific physiotherapeutic and non-pharmacological resources<sup>13</sup>, such as kinesiotherapy, cryotherapy<sup>28</sup> and electrotherapy<sup>29,30</sup>, which make up the physiotherapeutic practices aimed at reducing discomfort. In addition, the use of these resources can contribute to reduce women's hospitalization time, as well as reduce the need for drugs methods of analgesia<sup>3</sup>.



## CONCLUSION

The main discomforts reported by puerperal women were related to breastfeeding, in addition to intestinal, circulatory, urological and musculoskeletal discomforts. The pain intensity in the cesarean incision, colic during breastfeeding, breasts, lumbar spine and perineum was classified as moderate. However, these were classified as severe by some puerperal mothers, specially the pain of colic during breastfeeding. There was no difference in the intensity of pain by parity. There were significant differences in the intensity of pain with cesarean section and vaginal delivery with episiotomy and/or forceps, vaginal delivery with laceration and normal delivery.

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