Characteristics of pain in the immediate puerperium of vaginal delivery: cross-sectional study

Características da dor no puerpério imediato de parto vaginal: estudo transversal

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ABSTRACT

BACKGROUND AND OBJECTIVES: With the mother's body's changes in the immediate puerperium, painful conditions may arise that can interfere with the women functional activities. Knowing the characteristics of pain reported by puerperal women is essential to propose effective therapies for pain control. The objective of this study was to identify pain characteristics in women in the immediate puerperium after vaginal delivery.
METHODS: A cross-sectional descriptive study was carried out with puerperal women hospitalized in the immediate postpartum period after vaginal delivery. The McGill Pain Questionnaire (Br-MPQ) was used to assess pain and a form was used to characterize the sample. Descriptive statistics (mean, standard deviation, minimum, maximum, frequencies and percentages) were used to represent the variables.
RESULTS: 60 postpartum women participated. The most frequent pain characteristics were brief pain (63.4%), localized pain (96.7%), and deep pain (78.3%). The most cited pain category was sensory, and the most cited descriptors to define pain cramp/colic (71.7%), spreading in circles (58.4%), uncomfortable (56.7%), painful (46.7%) and throbbing (31.7%). The most frequent classification was intense pain (38.3%), in the abdomen (75.0%), the vaginal canal (36.7%), and the lumbar (20.0%).
CONCLUSION: The most frequent complaint of pain was with strong intensity, deep and localized, with the abdominal region, vaginal canal, and lumbar most affected, and the most used descriptors for its characterization were cramp/colic, which spreads in circles, uncomfortable, sore and throbbing.
Keywords: Natural childbirth, Pain, Physical therapy specialty, Postpartum period.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Com as alterações que o organismo materno passa no puerpério imediato, podem surgir quadros dolorosos que podem interferir nas atividades funcionais da mulher. Conhecer as características da dor relatada pelas puérperas é fundamental para propor terapias efetivas para o controle álgico. O objetivo deste estudo foi identificar as características da dor em mulheres no puerpério imediato após o parto vaginal.
MÉTODOS: Realizou-se um estudo descritivo transversal, com puérperas internadas no puerpério imediato após o parto vaginal. Foi aplicado para avaliação da dor o questionário McGill de dor (Br-MPQ) e uma ficha para caracterização da amostra. Foram utilizadas estatísticas descritivas (média, desvio padrão, mínimo, máximo, frequências e porcentagens) para representar as variáveis.
RESULTADOS: Participaram do estudo 60 puérperas. As características de dor mais frequentes foram dor breve (63,4%), dor localizada (96,7%) e dor profunda (78,3%). A categoria de dor mais citada foi a sensorial, e os descritores mais citados para definir a dor foram câimbra/cólica (71,7%), que espalha em círculos (58,4%), incômoda (56,7%), dolorida (46,7%) e latejante (31,7%). A classificação mais frequente foi a dor intensa (38,3%), nas regiões do abdômen (75,0%), canal vaginal (36,7%) e lombar (20,0%).
CONCLUSÃO: A queixa de dor mais frequente foi dor intensa, do tipo profunda e localizada, tendo a região abdominal, canal vaginal e lombar mais afetadas, e os descritores mais utilizados para sua caracterização foram câimbra/cólica, que espalha em círculos, incômoda, dolorida e latejante.
Descritores: Dor referida, Especialidade de fisioterapia, Parto normal, Período pós-parto.

INTRODUCTION

Pain is defined as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage"[1]. In puerperium, the period that follows childbirth, between placental delivery and the return of woman's reproductive organs to a non-pregnant state, pain is a frequent complaint and can hinder the recovery and performance of activities of daily living[2-4].

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HIGHLIGHTS
- Pain in the immediate puerperium is frequent.
- The intensity of pain is high.
- The pain is predominantly in abdomen, perineum, and lower back.

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Immediate puerperium, which comprises the first 10 days after birth, is marked by several bodily, psychological, and social changes[3]. The physiological changes, which alter the functioning of several body systems, such as the reproductive, cardiovascular, urinary, digestive, musculoskeletal, and respiratory systems, added to the responsibility and demands that a newborn (NB) requires, can cause physical and emotional discomfort in women[5].
The discomforts produce complaints of pain in several parts of the body, mainly in abdominal, perineal, lumbar, cervical, and lower limbs regions. Other complaints involve presence of abdominal diastasis, urinary incontinence, edema, misinformation, and problems with breastfeeding, such as breast pain, fissures, mastitis, and breast engorgement[2,4,6]. The manifestation of pain after vaginal delivery can be caused by several factors, such as the process of uterine involution, breastfeeding and/or the occurrence of spontaneous lacerations or episiotomy during labor[3,5].
The process of uterine involution, responsible for returning the uterus to its normal size, occurs through uterine contractions that, in turn, produce sharp, colic-like pain. Moreover, there is a relationship between this type of pain and the breastfeeding process, because during breastfeeding oxytocin is released in the body, increasing the pain sensation[3-5,7].
Perineal trauma due to spontaneous lacerations or episiotomy is common in vaginal delivery and may affect about 65% of puerperae[7-9]. This discomfort can remain from the immediate puerperium to one year after delivery, making it essential the care and proper management of perineal pain[10,11].
Pain interferes with the performance of the puerpera's daily functional activities, including self-care and NB care activities, such as sitting, getting up, walking, lying down, bathing, and positioning for breastfeeding, in addition to contributing to depressive symptoms up to six months after delivery[2,4,8,10,12-14].
The most commonly used treatment for pain relief in puerperal women, in maternity hospitals, is pharmacological therapy, but there are some conditions that make its application unfeasible, such as patients who cannot consume drugs, insufficient analgesia when drugs are used alone, and risk of transmission to breast milk, which points to the need to apply non-pharmacological therapies for pain relief together with pharmacological therapy[15-17].
In this case, the physiotherapist has an important role in relieving pain in the immediate puerperium, through kinesiotherapy techniques, transcutaneous electrical nerve stimulation (TENS), body massage, cryotherapy, guidance on positioning, NB care, and breastfeeding, aiming to facilitate woman's recovery in order to contribute to her return to daily activities[5,6].
There are few studies that address pain and its characteristics in this specific period. Therefore, comprehending the frequency and features of pain reported by women in the immediate puerperium of vaginal delivery is essential to strengthen the care and comprehensive attention to women and facilitate the planning of more effective strategies for pain control, qualifying the assistance of the physiotherapist and other professionals who accompany women in this period.
Thus, the present study's objective was to identify the characteristics of pain in puerperal women during their hospitalization in the immediate puerperium after vaginal delivery, through specific objectives, such as knowing the temporal pattern, the location and type of pain, verifying the intensity of pain, investigating the body regions in which these women feel pain, and analyzing the words that describe pain in this context.

METHODS

This study performed an observational and cross-sectional research, according to STROBE tool, which is part of a larger project entitled "Effects of kinesiotherapy and Transcutaneous Nerve Electrostimulation on Pain Relief in Immediate Puerperium: a randomized clinical trial", and exclusively addresses pain in women in the immediate puerperium after vaginal delivery. This study was submitted and approved by the University Hospital Júlio Müller Research Ethics Committee (Comitê de Ética em Pesquisa do Hospital Universitário Júlio Müller), from Federal University of Mato Grosso (Universidade Federal de Mato Grosso - UFMT), Cuiabá, Mato Grosso, Brazil, under Opinion Number 5,214,668.
The participants were recruited during the period of hospitalization in a public hospital in the city of Cuiabá, state of Mato Grosso, Brazil, during the months of May to August 2022, through convenience sampling. The patients were in a collective room with other puerperal women, their NB, and a companion of their choice.
The following puerperae were included in the study: those who had vaginal delivery, were in the immediate puerperium, at least eight hours after delivery, in hospital stay, over 18 years old, primiparous or multiparous, with the ability to understand the requests and orientations, with last drug administration over two hours, degree of pain reported as greater than zero by McGill Pain Questionnaire's pain intensity index (Br-MPQ) and who had not gone through complications, curettage or tubal ligation during delivery or puerperium. There were no refusals or exclusions.
All data were collected through a bedside interview. To characterize the sample, a form was applied to collect identification variables (name and chart number), sociodemographic data (age, color, education, and occupation), obstetric (number of pregnancies, parity, gestational age, presence of laceration or episiotomy, and number of hours postpartum), and medical data (presence of pathologies and time of last drug administration).
To characterize the pain, the Brazilian version of Br-MPQ was applied; it was chosen because it is a questionnaire used in other studies with women in the immediate postpartum period and because it is mentioned as a questionnaire of excellent quality to characterize pain[18-20]. Through the application of the questionnaire, information was collected about the temporal pattern of pain (continuous, paced or brief), location (localized or diffuse), and type of pain (superficial, deep or mixed), in addition to pain evaluation by a set of words divided into four categories: sensory, affective, subjective and mixed. Each category was divided into subcategories, organized by a set of words, and the participant chose one or none of the words in each subcategory to characterize her pain. Thus, two statistical measures were analyzed: Pain Rating Index (PRI), which is based on the sum of the numerical values associated with the chosen words, and Number of Words Chosen (NWC), which

is the total sum of the number of words chosen by participants. Moreover, the Present Pain Intensity (PPI) was evaluated by means of anchor words: (0) no pain, (1) weak, (2) moderate, (3) intense, (4) violent and (5) unbearable, which represents the intensity of pain the participant was feeling at that moment[18].

An anatomical drawing was also presented to the puerperae to mark an "X" on the exact spot of pain.

The information was stored in a special database of Excel program and later exported to Epi Info program (CDC, Atlanta, GA), version 7. Descriptive statistics (mean, standard deviation, minimum, maximum, frequencies, and percentages) were used to represent the variables.

RESULTS

This study evaluated 60 puerperae with a mean age of 25.2 years (SD=5.7 years), ranging from 18 to 40 years. Table 1 shows the other sociodemographic aspects of the participants. The mean gestational age at participant's delivery was 38.5 weeks (SD=1.9 weeks). The mean number of postpartum hours for which data were collected was 15.8 hours (SD = 7.6 hours). The other obstetric characteristics can be seen in table 2.

Table 1. Distribution of puerperae' sociodemographic variables in frequency (n) and percentage (%). Cuiabá, MT, Brazil, 2022.

Variables	n	%
Education		
Elementary school incomplete	2	3.3
Elementary school complete	5	8.3
High school incomplete	19	31.7
High school complete	23	38.3
College degree incomplete	7	11.7
College degree complete	4	6.7
Ethnicity		
White	16	26.7
Mixed	28	46.7
Black	16	26.7
Occupation		
Paid	34	56.7
Unpaid	26	43.3

Table 2. Distribution of puerperae' obstetric variables in frequency (n) and percentage (%). Cuiabá, MT, Brazil, 2022.

Variables	n	%
Pregnancies		
Primigesta	19	31.7
Multigesta	41	68.3
Parity		
Primiparous	23	38.3
Multiparous	37	61.7
Laceration or episiotomy		
Yes	27	45.0
No	33	55.0

Diabetes mellitus, gestational diabetes, syphilis and anxiety were verified among the comorbidities, but most of them, 56 puerperae (93.3%), did not have any disease. Table 3 presents the temporal pattern, location and type of pain collected from Br-MPQ.

Table 3. Distribution of puerperae' variables related to temporal pattern, location and type of pain in frequency (n) and percentage (%). Cuiabá, MT, Brazil, 2022.

Variables	n	%
Pain time pattern		
Brief	38	63.3
Paced	9	15.0
Continuous	13	21.7
Pain location		
Localized	58	96.7
Diffuse	2	3.3
Pain type		
Superficial	9	15.0
Mixed	4	6.7
Deep	47	78.3

The number of descriptors chosen per Br-MPQ category were: sensory category (228 descriptors), affective category (27 descriptors), subjective category (49 descriptors), and mixed category (39 descriptors).

The most frequently cited subcategories were: compression (86.6% - sensory category), in which the most frequent descriptor was "cramping/colic" (71.7%); spatial (71.6% - sensory category), in which the most frequent descriptor was "spreads in circles" (58.4%); subjective evaluation (81.7% - subjective category), in which the most frequent descriptor was "uncomfortable" (56.7%); general (81.7% - sensory category), in which the most frequent descriptor was "painful" (46.7%); and temporal (70.0% - sensory category), in which the most frequent descriptor was "throbbing" (31.7%).

PRI mean, NWC and PPI can be seen in table 4. As for the PPI ratings, the most frequent was intense pain, with 23 references (38.3%), as presented in figure 1.

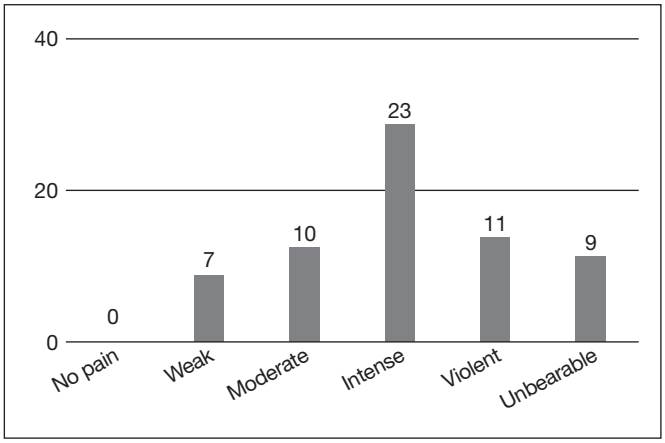

Figure 1. Distribution of McGill Questionnaire's (Br-MPQ) Present Pain Intensity (PPI) among puerperae. Cuiabá, MT, Brazil, 2022.

Table 4. Distribution of puerperae' PRI, NWC and PPI scores. Cuiabá, MT, Brazil, 2022.

Variable	Mean	Minimum	Maximum	Standard deviation
PPI	3	1	5	1.2
PRI	13	3	27	5.3
NWC	6	2	11	2.1

PPI = Present Pain Intensity; PRI = Pain Rating Index; NWC = Number of Words Chosen.

Regarding the site of pain, the highest frequency was found in the abdominal region (75.0%), followed by the vaginal canal (36.7%), and the lumbar region (20.0%), as shown in table 5.

Table 5. Distribution of pain sites reported by puerperae in frequency (n) and percentage (%). Cuiabá, MT, Brazil, 2022.

Variable	Frequency (n)	Percentage (%)
Abdomen	45	75.0
Anus	6	10.0
Vaginal canal	22	36.7
Ribs	1	1.7
Lumbar	12	20.0
Lower limbs	3	5.0
Neck	1	1.7
Hip	3	5.0
Sacrum	1	1.7

DISCUSSION

All patients who were invited to participate in this study were suffering from pain, according to the inclusion criteria, and in the analysis of the average number of postpartum hours in which the collections occurred, which was 15.8 hours, it was observed that the frequency of pain in the first 24-48 hours after vaginal delivery was high[7,8].

After birth, was observed a perineal trauma rate of 45.0%, including episiotomy and spontaneous lacerations, values lower than other studies, which found 73.4% and 87.0% of perineal trauma in their samples[21,22.] However, in this study, 61.7% of the puerperae were multiparous, which explains the lower rate, since primiparity is considered a risk factor for perineal laceration[23-25].

When describing pain through Br-MPQ descriptors, most patients reported that their pain had sensory characteristics, giving to this category the highest rate of referred pain, with 228 descriptors. This is a result similar to that found in other researches that studied perineal pain and post-episiotomy pain in vaginal delivery[22,26].

In relation to measurement of pain through PPI, almost all puerperae quantified their intense pain, with intensity 3 being the most cited, differing from other studies, which found a moderate intensity of pain after birth[9,23]. NWC and PRI averages were lower than in another study, which, however, assessed only the post-episiotomy pain characteristics[27].

The most frequent pain areas were the abdominal region, followed by pain in the vaginal canal and the lumbar spine. Abdominal pain (75.0%) is associated with uterine involution and breastfeeding process, which increase the release of oxytocin and uterine tone, causing uterine contractions, perceived by colic-type pain, which was reported by 71.7% of postpartum women[3,5].

Postpartum colic is felt in the lower abdomen and may radiate to the lumbar and sacral regions, which explains the pain in lumbar spine (20.0%). In addition, the way the puerpera positions herself for breastfeeding and functional activities and the stresses and strains of labor also contribute to pain[28-31]. Perineal pain (36.7%) may be related to the presence of lacerations or episiotomy during labor[7,8,22].

According to the Brazilian Society for the Study of Pain (*Sociedade Brasileira para o Estudo da Dor*), the perception of pain varies from one individual to another and is influenced by their experiences and culture[32]. When approaching the puerperal period, there are other factors that are related to the presence of pain, such as prolonged labor time, because it increases the chances of trauma and perineal manipulation, as well as the excessive number of vaginal touches, due to the risk of generating changes in local tissues[27]. Maternal immobility during labor, lack of knowledge and preparation, concern and negative emotions can prolong labor and generate pain later[33,34].

Pain can limit the performance of functional activities of the puerpera, increasing the physical demands of caring for NB, including breastfeeding, and can generate an unpleasant sensory experience in the woman, and may cause breastfeeding interruption. Therefore, it is necessary the appropriate management of pain in this period, in order to help the recovery process and reduce risks of complications, aiming to make this process a more positive experience for the puerpera[4,8,13,35].

Among the resources used to relieve the pain and discomfort of puerperae in the institution that was used as research field, the pharmacological ones were the most commonly prescribed, specifically buscopam, diclofenac sodium, plasil, and scopolamine bultilbromide with dipyrone.

Physical therapists, however, can use a series of non-pharmacological interventions for pain control, which can be started between 6-8 hours after birth[5]. Non-pharmacological therapies reduce the length of hospital stay and the use of drugs by patients, thus reducing hospital costs, and do not cause any harm to lactation[17,36]. Treatment with TENS and cryotherapy significantly reduces abdominal and perineal pain[16]. In addition, supervised exercise protocols and TENS have been shown to be effective in reducing pain and improving the general well-being of women in the immediate puerperium[6,16,20,36-38].

The team of physical therapists who work in the immediate puerperium reduces possible pain and facilitates the return to daily living activities[37]. Therefore, continuing education and research are essential to improve the quality of care for these women.

The main limitation of this study was to collect data in only one hospital, limiting the generalization of data and the non-interference in hospital routine. Therefore, multicenter studies that assess the occurrence of pain in the immediate puerperium and clinical trials to evaluate which non-pharmacological pain therapies can be effective for pain control are suggested for future studies. These works will contribute to a good diagnosis of this situation, besides guiding the promotion of humanized care.

Another limitation of this study was not having collected data on events that can lead to pain, such as previous knowledge about childbirth, assistance received intrapartum, in addition to postural and behavioral analysis in the postpartum period, such as breastfeeding posture, positioning in bed, active participation of the companion in NB caring, and analysis of the environment in which the puerpera was hospitalized, taking into account the presence of noise, lighting, and structure. Furthermore, the sample size was also a limitation. New studies with a larger sample in order to collect more representative data of the population to be studied should be conducted.

The belief is that the results obtained are important to help health professionals to propose strategies for pain management. The present study is relevant for addressing aspects related to a frequent maternal condition after vaginal delivery, helping professionals who assist these women to contribute to pain relief, in order to make this period a pleasurable experience.

CONCLUSION

The most frequently found characteristics of pain in the immediate puerperium of vaginal delivery are brief, localized and deep pain, predominantly in the regions of abdomen, vaginal canal and lumbar spine, with strong intensity. The descriptors that can characterize the pain are “cramping/colic”, “spreading in circles”, “uncomfortable”, “painful”, and “throbbing”.

This study showed how pain is a frequent condition in the immediate puerperium of vaginal delivery. Therefore, the investigation of this condition is important to help professionals to comprehend its characteristics, and thus draw effective strategies for the relief of pain.

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AUTHORS’ CONTRIBUTIONS

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Statistical Analysis, Data Collection, Conceptualization, Resource Management, Project Management, Research, Methodology, Writing - Preparation of the Original, Writing - Review and Editing, Supervision, Validation, Visualization

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Statistical Analysis, Resource Management, Writing - Review and Editing

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