

LABOR PAIN AS A NEW NURSING DIAGNOSIS: CONCEPTUAL AND CONTENT VALIDATION

Simone Roque Mazoni, RN, PhD

Emilia Campos de Carvalho, RN, PhD, Full Professor

University of São Paulo at Ribeirão Preto College of Nursing
WHO Collaborating Centre for Nursing Research Development

Brazil



INTRODUCTION

- The **phenomenon of pain during labor** differs from the experiences of acute and chronic pain in **physiology and interpretation of the mother**.
- The response to the **experience of pain** is complex and **subjective**.
- The **interpretation of labor pain** is built based on: personality, ethnicity, and social and cultural **experience before pain and labor**.

(Capogna et al, 2010; Mazoni & Carvalho, 2008; Trout, 2005; McColl, Smith & Aberg, 2004, Lowe, 2002; Rowlands & Permezel, 1998; Weber, 1996).

INTRODUCTION

Question

- Is pain in **labor situations** inserted into the nursing diagnosis NANDA-I (00132) **Acute Pain**?

Hypothesis

- Labor pain has clinical evidence that differs from the Acute Pain nursing diagnosis.

Objectives

- To build the concept of labor pain and to develop the content validation.

METHODS

- **Phase A** - Analysis of concepts as proposed by Walker and Avant (2005)
- **Phase B** - The content validation followed the Fehring's recommendations (1986)

(Walker & Avant, 2005; Fehring, 1986)

Phase A - Analysis of concepts

Walker & Avant Model (Eight steps)

1. **Concept selection:** - pain in labor situation.
2. **Proposed analysis:** - to build the concept of pain in labor situations.
3. **Identify the uses of the concept:**
 - A- Concept selected among the 180 terms related to pain (DeCs and MeSH): **Labor Pain** (Pain of Labor, Labor Pains and Childbirth Pains).
 - B- Search in the literature

Phase A - Analysis of concepts

B - Integrative review of the literature (Whittemore, 2005).

- MEDLINE, LILACS, CINAHL databases.
- 448 citations with abstracts in the period from Jan/1983 to Feb/2010 were found (accessed on Feb/11/2010).
- Criteria for inclusion: descriptive studies (on physiological, psychological, emotional, and cultural aspects) and intervention studies (describing measurement instruments for labor pain).
- Sample - were eligible for the analysis:
59 complete articles + 6 textbooks + 3 dissertations + 2 dictionaries

RESULTS Phase A - Analysis of concepts

4. Identification of defining attributes (Definition & DC):

- Sensorial and emotional experiences that vary from pleasant to unpleasant occurs during labor and delivery.
- Perception of pain ranging from mild to intense; intensity and frequency of pain tends to increase from beginning of dilation to expulsion period.

Rezende Filho & Montenegro (2006); Macedo (2007); Lowe (1987; 2002); Rowlands & Permezel (1998); McCool, Smith & Aberg (2004); Costa, Figueredo & Pacheco (2006); Ohel *et al* (2007); Trout (2005); Fridh & Gaston-Johanson (1990); Lundgen & Dalberg (1998); DeCS, (2008); MeSH (2005); Davim, Torres & Dantas (2008); MaC Evilly & Buggy (1996); Tseng & Juu-Su (2008); Brownridge (1995); Backer *et al* (2001); Weber (1996); Dias, Coler & Garcia (1997); Dias (1996).

RESULTS Phase A - Analysis of concepts

DEFINING CHARACTERISTICS: ACUTE PAIN*	DEFINING CHARACTERISTICS: LABOR PAIN
<ul style="list-style-type: none">Change in appetiteChange in blood pressureChanges in heart rateChange in respiratory rateCoded reportDiaphoresisDistraction behaviorExpressive behaviorFacial maskGuarding behaviorNarrowed focusObserved evidence of painPositioning to avoid painProtective gesturesPupillary dilationReports painSelf-focusSleep pattern disturbance <p>(* NANDA-I, 2012)</p>	<ul style="list-style-type: none">Altered muscle tensionAltered neuroendocrine functionAltered urinary functionChange in blood pressureChanges in heart rateChange in respiratory rateDiaphoresisDistraction behaviorExpressive behaviorFacial maskIncreased appetiteLack of appetiteNarrowed focusNauseaNoted evidence of uterine contractionObserved evidence of painPerineum pressure feelingPositioning to avoid painProtective gesturesPupillary dilationReports painSelf-focusSleep pattern disturbanceVomiting

RESULTS Phase A - Analysis of concepts

5 – **Development of a model case:** all attributes

6 – **Development of additional cases:**

- ***Borderline:*** some attributes
- **Contrary case:** concept antonym to the concept of interest.

RESULTS Phase A - Analysis of concepts

Model case

C.S, 26 years, married, gestational age of 39 weeks and 6 days, arrived at the hospital with her husband and was admitted to the maternity for her first labor experience. During the interview with the nurse, she mentioned that the couple had wanted the pregnancy and that they were happily awaiting the arrival of their child. She feels pain in the back, which started approximately 8 hours earlier (Referred pain according to VAS = 7). She also mentions pain in the lower part of the abdomen and fetal movements. She denies vaginal fluid loss and bleeding. The presence of expressive pain behavior in the form of groans is observed between the responses to the anamnesis, as well as facial expressions of pain. After an obstetrical examination, she was diagnosed in the active phase of labor. The uterine dynamics showed three contractions, two of which were effective, four centimeters of dilation and thin colon with 70% ripening. The bag spontaneously ruptured and contractions shortened during the period; the parturient woman reported intensified pain in the abdomen, perineum, groin and thighs until the expulsion period (Verbal pain report according to VAS = 10). Delivery took place without problems, resulting in the birth of a male infant. Although the mentioned being tired, the postpartum woman indicated pleasure and personal accomplishment as a result of the delivery and the arrival of the child.

RESULTS Phase A - Analysis of concepts

Contrary Case

H.B.O., 33 years, married, arrived at the hospital accompanied by her partner, fourth pregnancy, gestational age of 38 weeks, reporting three earlier normal births. During the interview, she mentioned fluid loss. The examination revealed nine centimeters of dilation and presentation height at +3 (DeLee Plane), having reached the expulsion period. She gave birth in the presence of her companion, **denied pain**, except for **mild pressure on the perineum**, highlighting **the absence of pain during her previous delivery**.

RESULTS Phase A - Analysis of concepts

7- Antecedents and consequence:

Antecedents → 2 **Related Factors**:

- **Dilatation period**: latent phase, active phase, transition phase of labor
- **Expulsion period**

Melzack (2001); Ackeley & Ladwig (2008); Davim, Torres & Dantas (2008); Rezende Filho & Montenegro (2006); Tseng & Juu-Su (2008); DeCS, (2008); MeSH (2005); Trout (2005); Rowlands & Permezel (1998); Backer *et al* (2001); Weber (1996); Lowe (1996; 1987); McCallum & Reis (2006); Mazoni & Carvalho (2008); Maul (2007).

RESULTS Phase A - Analysis of concepts

7- Antecedents and consequences:

B-Consequences resulting from the experiences of the phenomenon

- **Tiring**: wearing, exhaustion, suffering, nervousness, tension, lack of control, agitation, aggression, anger, worry, fear, distress, obstetric experience negative, negative feelings, anxiety.
- **Gives meaning to life**: teach, provides personal accomplishment.
- **Interferes with relationships**: the mother's initial experience.

Macedo (2007); Tseng & Juu-Su (2008); Brownridge (1995); Costa *et al.*, (2003); Lang & Sorrel (2006); Hodnett (2002); McCallum & Reis (2006); Davim, Torres & Dantas (2008); Rowlands & Permezel (1998); Ruano *et al* (2007).

RESULTS Phase A - Analysis of concepts

8 – Empirical references (methods to enable measuring the phenomenon)

MAIN EMPIRICAL REFERENTS

1. **VAS - Visual Analogue Scale:** 0 – no pain/10 – worst possible pain (McCaffery & Pasero, 1999).
2. **McGill Pain Questionnaire: Short Form** (Melzack, 1975).
3. **PCS - Pain Catastrophizing Scale** (Sullivan, 2009).
4. **UAB - Pain Behavior Scale** (Nepumuceno et al., 1982)
5. **VRS - Verbal Pain Scale:** mild-moderate-severe (Jensen & Karoly 1992)
6. **NRS - Numeric Rating Scale:** 11 point (Hawker et al., 2011).
7. **McGill Pain Questionnaire** (Melzack, 1975).
8. **Pupillometer, manual.** Measure the pupil diameter. (Haines, 2003
9. **Cardiotocograph: No-Stress Test . Toco:** records the intensity of uterine muscle tone.
(Denipote, 2009; Sundström, Rosén & Rosén, 2000).

Phase B – The content validation

**What is the opinion of experts about
Labor pain as a new diagnosis ?**

Expert

- Nurse specialized in Obstetrical Nursing
- Professional experience in labor for at least one year


Sample $n = 10$

RESULTS Phase B – The content validation

Labor pain (as a new NDx)

Domain 12 – Comfort

Class 1 – Physical Comfort



Domain and Class
validated with
scores > 60%

RESULTS Phase B – The content validation

ACUTE PAIN: DEFINITION	LABOR PAIN: DEFINITION
<p data-bbox="40 429 871 986">“Unpleasant sensory and emotional experience arising from actual or potential <u>tissue damage</u> or described in terms of such damage (International Association for the Study of Pain); sudden or slow onset of any intensity from mild to severe with an anticipated or predictable end and a duration of < 6 months.”</p> <p data-bbox="19 1253 846 1289">NANDA-I (2010, p.375); NANDA-I (2012, p.478).</p>	<p data-bbox="909 379 1914 1168">“Sensorial and emotional experience that varies from pleasant to unpleasant and occurs during labor, resulting from complex interactions among clinical, hormonal and mechanical aspects of labor and from nociceptive stimuli deriving from <u>cervical progress</u>, <u>uterine contractions</u>, <u>cervical dilation</u> and <u>fetal descent</u>, molded by cognitive events of physical, cultural, emotional, psychological origin and sensorial perceptions that vary from low to intense, tending to increase in intensity and frequency from the dilation period to the expelling stage.</p> <p data-bbox="909 1225 1914 1428">Brownridge (1995); Costa (2003); Dias, Coler & Garcia (1997), Hodnett (2002), Lowe (2002); Macedo (2007); Melzack (2001); Melzack (1975); Montenegro & Rezende Filho (2011), Rowlands & Permezel (1998); Weber (1996); Zugaih (2012); Johnson (2012); Friedman (1978)</p>

RESULTS Phase B – The content validation

- 23 defining characteristics were identified in Phase A (concept analysis)

- **Content validation:** 21 were validated

Noted evidence of uterine contraction (0.95)

Altered muscle tension (0.93)

Change in respiratory rate (0.85)

Expressive behavior (0.85)

Facial mask (0.85)

Observed evidence of pain (0.85)

Diaphoresis (0.83)

Reports pain (0.80)

Changes in heart rate (0.80)

N=9
Defining
Characteristics
were strongly
indicative of
Labor Pain

RESULTS Phase B – The content validation

Change in blood pressure (0.78)

Distraction behavior (0.75)

Sleep pattern disturbance (0.73)

Altered urinary function (0.73)

Positioning to avoid pain (0.70)

Nausea (0.68)

Lack of appetite (0.63)

Vomiting (0.60)

Protective gestures (0.58)

Self-focus (0.58)

Altered neuroendocrine function (0.58)

Narrowed focus (0.55)

N=12
Defining
Characteristics
were validated
with scores
> 0.50 to < 0.80

RESULTS Phase B – The content validation

Defining Characteristics:

validated n=21

unrepresentative (scores < 0.50) n= 2
(Pupillary dilatation and Increased appetite)

Total DCV = 0.73

Related Factors:

Dilatation period

- Latent phase
- Active phase

Expulsion period

Validated RF
Scores > 60%

CONCLUSION PHASE A

Labor Pain

- Results from complex interactions among clinical, hormonal and mechanical aspects of labor.
- Interactions generate nociceptive stimuli arising from cervical ripening, uterine contractions, cervical dilation and fetal descent.
- Manifestation of the phenomenon is modulated by cognitive events of physical, cultural, emotional, psychological origins and sensory perception (ranging from pleasant to unpleasant experience).

CONCLUSION PHASE B

Experts mostly approved **Labor Pain** diagnosis as:

- insertion into **Domain 12 - Comfort**
- and **Class 1 - Physical Comfort**
- **definition**
- **21 defining characteristics**
- **2 related factors**

CONCLUSION

- The methodological approach reinforced the comprehension that the phenomenon *labor pain* should be expressed differently from *acute pain*.
- The construction of the concept “*Labor pain*” and the evidences observed in the content validation process justify the proposal of this new diagnosis to the NANDA-I taxonomy.

REFERENCES

ABENHAIM, H. A.; FRASER, W. D. Impact of pain level on second-stage delivery outcomes among women with epidural analgesia: results from the PEOPLE study. **Am J Obstet Gynecol.**, v. 199, n. 5, p. 500, Nov. 2008.

ABUSHAIKHA, L.; OWEIS, A. Labour pain experience and intensity: a Jordanian perspective. **Int J Nurs Pract.**, v. 11, n. 1, p. 33-38, Feb 2005.

ACKELEY, B. J.; LADWIG, G. B. **Nursing diagnosis handbook: an evidence-based guide to planning care.** 8th ed. St. Louis, Missouri: Mosby Elsevier, 2008.

AGGARWAL, P.; ZUTSHI, V.; BATRA, S. Role of hyoscine N-butyl bromide (HBB, buscopan) as labor analgesic. **Indian J Med Sci.**, v. 62, n. 5, p.179-184. May 2008.

ALEHAGEN, S. et al. Fear, pain and stress hormones during childbirth. **J Psychosom Obstet Gynaecol.**, v. 26, n. 3, p. 153-165, Sep. 2005.

ALMEIDA, N. A. M. et al. Concentração plasmática do hormônio adrenocorticotrófico de parturientes submetidas a método não farmacológico de alívio da ansiedade e dor do parto. **Rev Latino-am de Enfermagem**, v. 13, n. 2, p. 223-238, mar./abr., 2005.

ATIÉNZAR, M. C.; et al. A randomized comparison of levobupivacaine, bupivacaine and ropivacaine with fentanyl, for labor analgesia. **Int J Obstet Anesth.**, v. 17, n. 2, p.106-111. Apr. 2008.

REFERENCES

BAKER, A. et al. Perceptions of labour pain by mothers and their attending midwives Aims. **J. Advanced Nursing**, v. 35, n. 2, p. 171-179, 2001.

BASTOS, R. M. et al. Avaliação da função renal em pacientes com creatinina sérica normal. **Rev. APS**, v. 110, n. 1, 2007.

BEEBE, K. R. et al. The effects of childbirth self-efficacy and anxiety during pregnancy on prehospitalization labor. **J Obstet Gynecol Neonatal Nurs.**, v. 36, n. 5, p. 410-418, Sep/Oct, 2007.

BICKLEY, L. **Bates: propedêutica médica**. 8. ed. Rio de Janeiro: Guanabara Koogan, 2005.

BILLERT, H. et al. Anxiety assessment in parturients requesting epidural analgesia for pain relief]. **Ginekol. Pol.**, v. 78, n. 7, p. 532-538, Jul 2007. Abstract.

BOROWSKA, A. et al. Retrospective assessment of epidural analgesia during labor according to parturients. **Ginekol. Pol.**, v. 76, n. 4, p. 277-283, Apr 2005. Abstract.

BORUP, L. et al. Acupuncture as pain relief during delivery: a randomized

REFERENCES

BRIGGS, E. Understanding the experience and physiology of pain. **Nursing Standard.**, v. 25, n. 3, p. 35-39, Sep. 2010.

BROWNRIDGE, P. The nature and consequences of childbirth pain. **Eur. J. Obstet. Gynecol. Reprod. Biol.**, v. 59, p. S9-S15, May 1995. Supplement.

BUENO, J. V. **Avaliação da intensidade e característica da dor no trabalho de parto e a ação do misoprostol.** 2006. Dissertação (Mestrado em Enfermagem em Saúde Pública) - Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, 2006.

CATON, D.; FROLICH, M.; EULAINO, T. Anesthesia for childbirth: controversy and change. **Am. J. Obstet. Gynecol.**, v. 186, n. 5 Suppl., p. S25-S30, May 2002.

CHANG, M. Y.; CHEN, C. H.; HUANG, K. F. A comparison of massage effects on labor pain using the McGill Pain Questionnaire. **J. Nurs. Res.**, v. 14, n. 3, p. 190-197, Sep 2006.

CHAO, A. S. et al. Pain relief by applying transcutaneous electrical nerve stimulation (TENS) on acupuncture points during the first stage of labor: a randomized double-blind placebo-controlled trial. **Pain.**, v. 127, n. 3, p. 214-220, Feb 2007.

REFERENCES

CONNELL-PRICE, J. et al. The development and validation of a dynamic model to account for the progress of labor in the assessment of pain. **Anesth. Analg.**, v. 106, n. 5, p. 1509-1515, May 2008.

CORREIA, C. G. **Dor: validação clínica no pós-operatório de cirurgia cardíaca**. 1997. Dissertação (Mestrado em Enfermagem) – Escola de Enfermagem de São Paulo, Universidade de São Paulo, USP, 1997.

COSTA, R. et al. Parto: expectativa, experiências, dor e satisfação. **Psicologia, Saúde & Doenças**, v. 4, n. 1, p. 47-67, 2003.

COSTA, V. N. **Cardiotocografia computadorizada em gestantes com diabetes mellitus**. 2006. Dissertação (Mestrado em Obstetrícia e Ginecologia) – Faculdade de Medicina da Universidade de São Paulo, Universidade de São Paulo, 2006.

DAVIM, M. R. B.; TORRES, G. V.; DANTAS, J. C. Representação de parturientes acerca da dor de parto. **Rev. Eletrônica de Enfermagem**, v. 10, n. 1, p. 100-109, 2008.

DAVIM, R. M. B. et al. Banho de chuveiro como estratégia não farmacológica no alívio da dor de parturientes. **Rev. Eletr. Enf.** v. 10, n. 3, p. 600-609, 2008.

REFERENCES

DAVIM, R. M. B.; TORRES, G. V.; MELO, E. S. Estratégias não farmacológicas no alívio da dor durante o trabalho de parto: pré-teste de um instrumento. **Rev. Latinoam Enfermagem**, Ribeirão Preto, v. 15, n. 6, p. 1150-1156, nov./dez. 2007.

DeCS. Base de dados na Internet. São Paulo: BIREME Biblioteca Virtual em Saúde, 2012. **Dor de parto**, número do registro: 38636. Disponível em: <<http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/>>. Acesso em: 20 fev. 2008a.

DeCS. Base de dados na Internet. São Paulo: BIREME Biblioteca Virtual em Saúde, 2012. **Trabalho de parto**, número do registro: 22234. Disponível em: <<http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/>>. Acesso em: 20 fev. 2008c.

DeCS. Base de dados na Internet. São Paulo: BIREME Biblioteca Virtual em Saúde, 2012. **Contração uterina**, número do registro: 14991. Disponível em: <<http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/>>. Acesso em: 20 fev. 2008d.

DeCS. Base de dados na Internet. São Paulo: BIREME Biblioteca Virtual em Saúde, 2012. **Estudos de validação**, número do registro: 35256. Disponível em: <<http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/>>. Acesso em: 20 fev. 2012a.

DeCS. Base de dados na Internet. São Paulo: BIREME Biblioteca Virtual em Saúde, 2012. **Medição da dor**, número do registro: 30624. Disponível em: <<http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/>>. Acesso em: 20 fev. 2012c.

REFERENCES

DENIPOTE, A. G. M. **Combinação entre termos da cipe® para compor diagnósticos de enfermagem relacionados ao foco processo do aparelho reprodutor.** 2009. Dissertação (Mestrado em Tecnologia em Saúde) – Pontifícia Universidade Católica do Paraná – PUCPR, 2009.

DIAS, M. D; COLER, M. S.; GARCIA, T. R. Labor pain: a proposed nursing diagnosis. In: NORTH AMERICAN NURSING DIAGNOSIS ASSOCIATION **Classification of nursing diagnoses: proceedings of the twelfth conference.**, Glendale, CA: Cinahl Information Systems, 1997.

DIAS, M. D. **A mulher e o parto: respostas frente à dor.** 1996. Dissertação (Mestrado em Enfermagem) – Universidade Federal da Paraíba – UFPA, 1996.

ENTRINGER, S. et al. Attenuation of maternal psychophysiological stress responses and the maternal cortisol awakening response over the course of human pregnancy. **Stress**, v. 13, n. 3, p. 258-268, May 2010.

FEHRING, R. J. Methods to validate nursing diagnoses. **Heart and Lung**, St. Louis, v. 16, n. 6, p. 625-629, Nov 1987.

REFERENCES

FEHRING, R. J. The Fehring model. In: CARROL-JONHONSON, R. M.; PAQUETE, M. (Ed.). **Classification of nursing diagnoses**: proceedings of the tenth conference. Philadelphia: J. B. Lippincott, 1994. p. 55-62.

FEHRING, R. Validating diagnostic labels: standardized methodology. In: HURLEY, M. E. (Ed.). **Classification of nursing diagnosis**: proceedings of the sixth conference. St. Louis: Mosby, 1986. p. 183-190.

FERBER, S. G.; GRANOT, M.; ZIMMER, E. Z. Catastrophizing labor pain compromises later maternity adjustments. **Am. J. Obstet. Gynecol.**, v. 192, n. 3, p. 826-831, Mar 2005.

FERNANDES, M. L.; ANDRADE, F. C. J. de. Analgesia de parto: bases anatômicas e fisiológicas. **Rev. Med. Minas Gerais**, v. 19, n. 3, Supl 1, p. S3-S6, 2009.

FLINK, I. K. et al. Pain in childbirth and postpartum recovery: the role of catastrophizing. **Eur. J. Pain**, v. 13, n. 3, p. 312-316, Mar 2009.

FRIDH, G.; GASTON-JOHANSSON, F. Do primiparas and multiparas have realistic expectations of labor. **Acta Obstet. Gynecol. Scand.**, v. 69, n. 2, p. 103-109, 1990.

REFERENCES

FRIEDMAN, E. A. (Ed.). **Labor: clinical evaluation and management**. 2nd ed. New York: Appleton; 1978.

GOODMAN, S. R. et al. A randomized trial of breakthrough pain during combined spinal-epidural versus epidural labor analgesia in parous women. **Anesth. Analg.**, v. 108, n. 1, p. 246-251, Jan 2009.

GREENHILL, J. P.; FRIEDMAN, E. A. **Obstetrícia**. Rio de Janeiro: Interamericana, 1976.

GUSHI, A. A. et al. Avaliações da filtração glomerular pela depuração de creatinina, equações MDRD e Cockcroft-Gault. **J. Bras. Nefrologia**, v. 26, p.165-169, 2004.

GUYTON, A. C.; HALL, J. E. **Tratado de fisiologia médica**. 10. ed. Rio de Janeiro: Guanabara Koogan, 2002. 973 p.

HAINES, D. **Princípios de neurociência**. Madri: Elsevier, 2003.

HARTMANN, S. et al. The analgesic effect of exercise during labor. **Z. Geburtshilfe Neonatol.** v. 209, n. 4, p. 144-150, Aug 2005. Abstract

REFERENCES

HELMS, J. E.; BARONE, C. P. Physiology and treatment of pain. **Critical care nurse**, v. 28, n. 6, p. 38-50, Dec. 2008.

HJELMSTEDT, A. et al. Acupressure to reduce labor pain: a randomized controlled Trial. **Acta Obstet. Gynecol.**, v. 2010; n. 89, p. 1453-1459.

HODNETT, E. D. Pain and women's satisfaction with the experience of childbirth: a systematic review. **Am. J. Obstet. Gynecol.**, v. 186, n. 5 Suppl, p. S160-S172, May 2002.

HOSKINS, L. M. Clinical validation, methodologies for nursing diagnoses research. In: CARROL JOHNSON, R. M. et al (Ed.). **Classification of nursing diagnoses: proceedings of the eighth conference of North American Nursing Diagnosis Association**. Philadelphia: Lippincott, 1989. p.126-131.

IASP. INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN. Pain. Global Year Against Pain in Women. **Obstetric pain**. Association for the Study of Pain. Sep. 2007.

IASP. INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN. Anxiety and Pain. **IASP**, v. 12, n. 7, p. 2-6, Dec. 2004.

IASP. INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN. *Pain terms: a list with definitions and notes on usage*. Recommended by the IASP Subcommittee on Taxonomy. **Pain**, v. 6, p. 249, 1979.

REFERENCES

JOHNSON, J. Y. **Enfermagem materna e do recém-nascido desmistificada: um guia de aprendizado.** AMGH. Tradução: Ana Maria Vasconcellos Thorrell, 2012.

KANJI, N. Management of pain through autogenic training. **Complement Ther. Nurs. Midwifery**, v. 6, n. 3, p.143-148, Aug 2000.

KIMBER, L. et al. Massage or music for pain relief in labour: a pilot randomised placebo controlled trial. **Eur. J. Pain.**, v. 12, n. 8, p. 961-969, Nov. 2008

KOJIC, Z. et al. Labor pain--physiological basis and regulatory mechanisms. **Srp Arh Celok Lek**, v. 135, n. 3-4, p. 235-239, Mar/Apr 2007.

KUSHTAGI, P., BHANU, B. T. Effectiveness of subcutaneous injection of sterile water to the lower back for pain relief in labor. **Acta Obstet. Gynecol. Scand.**, v. 88, n. 2, p. 231-233, 2009.

LALLY, J. E. More in hope than expectation: a systematic review of women's expectations and experience of pain relief in labour. **BMC Med.**, v. 6, p. 7, Mar. 2008.

REFERENCES

LANG, A. J. et al. Anxiety sensitivity as a predictor of labor pain. **Eur. J. Pain**, v. 10, n. 3, p. 263-270, Apr 2006.

LEE, M. K.; CHANG, S. B.; KANG, D. H. Effects of SP6 acupressure on labor pain and length of delivery time in women during labor. **J. Altern. Complement. Med.**, v. 10, n. 6, p. 959-965, Dec 2004.

LEEMAN, L. et al. The nature and management of labor pain: part II. Pharmacologic pain relief. **Am. Fam. Physician**, v. 68, n. 6, p. 1115-1120, Sep 2003.

LOESER, J. D.; TREEDE, R. D. The Kyoto protocol of IASP Basic Pain Terminology. **Pain**, v. 137, p. 473-477, 2008.

LOWE, K.N. Parity and pain during parturition. **J. Obstet. Gynecol. Neonatal. Nurs.**, v. 16, n. 5, p. 340-346, Set./Out. 1987.

LOWE, K. N. The nature of labor pain. **Am. J. Obstet. Gynecol.**, v. 186, n. 5 Suppl, p. S16-S24, May 2002. Review.

REFERENCES

LOWE, K. N. The pain and discomfort of labor and birth. **J. Obstet. Gynecol. Neonatal. Nurs.**, v. 25, n. 1, p. 82-92, Jan 1996.

LUNDGREN, I.; DAHLBER, G. K. (1998). Women's experience of pain during childbirth. **Midwifery**, v. 14, n. 2, p. 105-110, Jun 1998.

MACEDO, P. O. **Significando a dor no parto: expressão feminina da vivência do parto vaginal**. 2007. 91f. Dissertação (Mestrado em Enfermagem) - Faculdade de Enfermagem, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2007.

MacEVILLY, M.; BUGGY, D. Back pain and pregnancy: a review. **Pain**, v. 64, n. 3, p. 405-414, Mar 1996.

MARTENSSON, L. The patient observer: sterile water injections for labor pain. **BIRTH**, v. 37, n. 4, Dec. 2010, p. 334-336.

MAUL, A. An evolutionary interpretation of the significance of physical pain experienced by human females: defloration and childbirth pains. **Med Hypotheses**, v. 69, n. 2, p. 403-409, Fev 2007.

MAZONI, S. R.; CARVALHO, E. C, de. Dor de parto: considerações históricas e conceituais. **Revista Dor**, v. 9, n. 1, p. 1176-1182, jan./mar. 2008.

McCAFFERY, M.; PASERO, C. **Pain: clinical manual**. 2nd ed. St Louis: Mosby, 1999.

REFERENCES

McCALLUM, C.; REIS, A. P. Re-significando a dor e superando a solidão: experiências do parto entre adolescentes de classes populares atendidas em uma maternidade publica de Salvador, Bahia. **Cad. Saúde Pública**, Rio de Janeiro, v. 22, n. 7, p. 1483-1491, jul. 2006.

McCOOL, W. F.; SMITH, T.; ABERG, C. Pain in women's health: a multi-faceted approach toward understanding. **J Midwifery Womens Health**, v. 49, n. 6, p. 473-481, Nov/Dec 2004.

MELZACK R. The myth of painless childbirth. **Pain**, v. 19, n. 4, p. 321-337 Aug 1984.

MELZACK, R. Labour pain as a model of acute pain. **Pain**, v. 53, n. 2, p. 117-120, May 1993.

MELZACK, R. Pain and the neuromatrix in the brain. **J. Dental Education**, v. 65, n. 12, p. 1378-1382, Dec 2001.

MELZACK, R. The McGill pain questionnaire: major properties and scoring methods. **Pain**. v. 1, n. 3, p. 277-299, Sep 1975.

REFERENCES

MELZACK, R. The short-form McGill pain questionnaire. **Pain**, v. 30, n. 2, p. 191-197, Aug 1987.

MELZACK, R.; WALL, P. Pain mechanisms: a new theory. **Science**. v. 150, n. 3699, p. 971-979, Nov 1965.

MeSH. MEDICAL SUBJECT HEADINGS. **Labor pain.** disponível em: <[http://www.ncbi.nlm.nih.gov/mesh?Db=mesh&Term=%22Labor,%20Obstetric%20%22\[MESH\]>](http://www.ncbi.nlm.nih.gov/mesh?Db=mesh&Term=%22Labor,%20Obstetric%20%22[MESH]>). Acesso em: 11 mar. 2008.

MEYER, M. et al. Intrapartum and postpartum analgesia for women maintained on methadone during pregnancy. **Obstet. Gynecol.**, v. 110, n. 2, p. 261-266, Aug 2007.

MEYR, A. J.; STEINBERG, J. S. The physiology of the acute pain pathway. **Clin Podiatr. Med. Surg.**, v. 25, p. 305–326, 2008.

MISSANT, C. et al. Intrathecal clonidine prolongs labour analgesia but worsens fetal outcome: a pilot study. **Can J Anaesth.**, v. 51, n. 7, p. 696-701, Aug-Sep. 2004.

MONTENEGRO, C. A. B.; REZENDE FILHO, J. **Rezende: obstetrícia fundamental**. 12. ed. Rio de Janeiro: Guanabara-Koogan, 2011.

REFERENCES

NANDA. NORTH AMERICAN NURSING DIAGNOSIS ASSOCIATION. **Diagnósticos de enfermagem: definições e classificação 2009-2011**. NANDA International. Tradução de Regina Machado Garcez. Porto Alegre: Artmed, 2010.

NANDA. NANDA INTERNATIONAL. **Nursing diagnoses: definitions and classification 2012-2014**. San Francisco: Wiley, 2012.

NANDA. NANDA INTERNATIONAL. **Nursing diagnoses: definitions and classification 2007-2008**. Philadelphia: NANDA International, 2008.

NANDA. NORTH AMERICAN NURSING DIAGNOSIS ASSOCIATION. **Diagnósticos de enfermagem: definições e classificação 2005-2006**. NANDA International. Tradução de Cristina Correa. Porto Alegre: Artmed, 2006.

NEME, B. (Org.). **Neme: obstetrícia básica**. 3 ed. São Paulo: Sarvier, 2005.

NILSEN, E.; SABATINO, H.; LOPES, M. H. B. M. The pain and behavior of women during labor and the different positions for childbirth. **Rev. Esc .Enferm. USP**, v. 45, n. 3, p. 557-565, 2011.

NIVEN, C.; GIJSBERS, K. A study of labour pain using the McGill Pain questionnaire. **Soc. Sci. Med.**, v. 19, n. 12, p. 1347-1351, 1984.

REFERENCES

NIVEN, C.; GIJSBERS, K. Obstetric and non-obstetric factors related to pain. **J. Reprod. Infant. Psychol.**, v. 2, p. 61-78, 1984.

NORMAN, D. et al. Labor epidural anesthetics comparing loss of resistance with air versus saline: does the choice matter? **AANA J**, v. 74, n. 4, p. 301-308, Aug. 2006.

NOVATO, T. S.; GROSSI, S. A. A.; KIMURA, M. Qualidade de vida e auto-estima de adolescentes com diabetes mellitus. **Femina**, v. 38, n. 10, p. 528-537, out. 2010.

OHEL, I. et al. A rise in pain threshold during labor: a prospective clinical trial **Pain.**, v. 132, Suppl 1, p. S104-S108, Nov 2007.

OLAYEMI, O. et al. Determinants of pain perception in labour among parturients at the University College Hospital, Ibadan. **J. Obstet. Gynaecol.**, v. 25, n. 2, p. 128-130., Fev. 2005.

ONAH, H. E. et al. Pain perception among parturients in Enugu, South-eastern Nigeria. **J. Obstet. Gynaecol.**, v. 27, n. 6, p. 585-588, Aug 2007.

PALOMÄKI, O.; HUHTALA, H.; KIRKINEN, P. What determines the analgesic effect of paracervical block?. **Acta Obstet. Gynecol. Scand.**, v. 84, n. 10, p. 962-966, Oct 2005a.

REFERENCES

PALOMÄKI, O.; HUHTALA, H.; KIRKINEN, P. A comparative study of the safety of 0.25% levobupivacaine and 0.25% racemic bupivacaine for paracervical block in the first stage of labor. **Acta Obstet. Gynecol. Scand.**, v. 84, n. 10, p. 956-961, Oct 2005b.

PIMENTA, C. A. de M.; TEIXEIRA, M. J. Questionário de dor McGill: proposta de adaptação para a língua portuguesa. **Rev. Esc. Enf. USP**, v. 30. n. 3, p. 473-483, dez. 1996.

PONGROJPA, W. D; SOMPRASIT, C.; CHANTHASENANONT, A. The efficacy of lidocaine-prilocaine cream to reduce pain in genetic amniocentesis. **J. Med. Assoc. Thai.**, v. 90, n. 10, p. 1992-1996, Oct 2007.

REZENDE FILHO, J.; MONTENEGRO, C. A. B. O parto: estudo clínico e assistência. In: _____. **Obstetrícia fundamental**. 10. ed. Rio de Janeiro: Guanabara-Koogan, 2006. p. 181-212.

ROELANTS, F.; LAVAND'HOMME, P. M.; MERCIER-FUZIER, V. Epidural administration of neostigmine and clonidine to induce labor analgesia: evaluation of efficacy and local anesthetic-sparing effect. **Anesthesiology**, v. 102, n. 6, p.1205-1210, Jun 2005.

REFERENCES

ROWLANDS, S.; PERMEZEL, M. Physiology of pain in labour. **Baillieres Clin. Obstet. Gynaecol.**, v. 12, n. 3, p. 343-362, 1998.

RUANO, R. et al. Dor do parto: sofrimento ou necessidade?. **Rev. Assoc. Med. Bras.** 2007, v. 53, n. 5, p. 384, 2007.

SCHYTT, E.; WALDENSTRÖM, U. Epidural analgesia for labor pain: whose choice? **Acta Obstet. Gynecol. Scand.**, v. 89, n. 2, p. 238-242, 2010.

SUNDSTRÖM, A. K.; ROSÉN, D.; ROSÉN, K. G. **Vigilância fetal**. Goteburgo: Neoventa, 2000. p. 4-40.

SUPANDJI, M.; SIA, A. T.; OCAMPO, C. E. Ropivacaine and levobupivacaine provide equally effective epidural labour analgesia. **Can. J. Anaesth.**, v. 51, n. 9, p. 918-922. Nov 2004.

TROUT, K. K. The neuromatrix theory of pain: implications for selected nonpharmacologic methods of pain relief for labor. **J. Midwifery Womens Health**, v. 49, n. 6, p. 482-488, Nov/Dec, 2005.

TSENG, Y.; JUU-SU, T. Low back pain during labor and related factors. **J. Nurs. Res.**, v. 16, n. 3, p. 231-241, Sep 2008.

REFERENCES

URCH, C. Normal pain transmission. **Reviews in Pain**, v. 1, n. 1, p. 2-6. 2007. Disponível em: <<http://pt.scribd.com/doc/20255291/Reviews-in-Pain-Issue-1>>. Acesso em: 20 nov. 2011.

VALLEJO, M. C. et al. Epidural labor analgesia: continuous infusion versus patient-controlled epidural analgesia with background infusion versus without a background infusion. **J. Pain.**, v. 8, n. 12, p. 970-975, Dec 2007.

WALDENSTRÖM, U.; IRESTEDT, L. Obstetric pain relief and its association with remembrance of labour pain at two months and one year after birth. **J. Psychosom. Obstet. Gynaecol.**, v. 27, n. 3, p. 147-156, 2006.

WALDENSTRÖM, U.; SCHYTT, E. A longitudinal study of women's memory of labour pain--from 2 months to 5 years after the birth. **BJOG**. v. 116, n. 4, p. 577-583. Mar. 2009.

WALKER, L. O.; AVANT, K. C. **Strategies for theory construction in nursing**. 4th ed. Norwalk, CT: Appleton & Lange, 2005.

REFERENCES

WEBER, S. E. Cultural aspects of pain in childbearing women. **J. Obstet. Gynecol. Neonatal Nurs.**, v. 25, n. 1, p. 67-72, 1996. Review.

WHITTEMORE, R. Combining evidence in nursing research: methods and implications. **Nurs Res**, v. 54, n. 1, p. 56-62, Jan/Feb 2005.

WHITTY, R. et al. Determination of the ED95 for intrathecal plain bupivacaine combined with fentanyl in active labor. **Int. J. Obstet. Anesth.**, v. 16, n. 4, p. 341-345, Oct 2007.

WINKELMAN, C. et al. Pain measurement during labor: comparing the visual analog scale with dermatome assessment. **Appl. Nurs. Res.**, v. 21, n. 2, p. 104-109, May 2008.

WOOD, S. **Anatomy and physiology of pain**. Disponível em: <<http://www.nursingtimes.net/nursing-practice/1860931.article>>. Acesso em: 14 dez. 2011.

ZUGAIB, M. **Zugaib obstetrícia**. 2. ed. Barueri: Manole, 2012.