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Non-invasive care technologies used by obstetric nurses: therapeutics contributions

Tecnologias não invasivas de cuidado utilizadas por enfermeiras obstétricas: contribuições terapêuticas

Tecnologías de atención no invasiva utilizadas por las enfermeras obstétricas: contribuciones terapêuticas

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Abstract

Objective: to describe the therapeutics contributions of the use of non-invasive care technologies offered by obstetric nurses during labor. **Method:** a qualitative and descriptive study, with eight obstetric nurses from a birthing center in Rio de Janeiro. Data were collected from September to December 2018, through semi-structured interviews, and subjected to thematic analysis technique. **Results:** to relieve pain and promote relaxation, they resort to encouraging the companion's participation and conscious breathing, the application of massage, the promotion of a supportive environment and the use of warm water and essential oils. To activate labor, assist in descending the presentation and correction of fetal positioning, they encourage vertical positioning and body movements, with some instruments. **Conclusions and implications for practice:** non-invasive care technologies have therapeutic contributions and form a not medicalized, respectful and women-centered care that promotes female autonomy.

Keywords: Humanization of Assistance; Nursing Care; Obstetric Nursing; Pregnant Women; Biomedical Technology.

Resumo

Objetivo: descrever as contribuições terapêuticas da utilização de tecnologias não invasivas de cuidado, oferecidas por enfermeiras obstétricas, durante o trabalho de parto. **Método:** estudo qualitativo e descritivo, com oito enfermeiras obstétricas da casa de parto do Rio de Janeiro. Os dados foram coletados de setembro a dezembro de 2018, através de entrevistas semiestruturadas, e submetidos à técnica de análise temática. **Resultados**: para aliviar a dor e promover relaxamento, recorrem ao estímulo à participação do acompanhante e à respiração consciente, à aplicação da massagem, à promoção do ambiente acolhedor e ao uso da água morna e dos óleos essenciais. Para ativar o trabalho de parto, auxiliar na descida da apresentação e correção do posicionamento fetal, incentivam posicionamentos verticalizados e movimentos corporais, com alguns instrumentos. **Conclusões e implicações para a prática:** tecnologias não invasivas de cuidado possuem contribuições terapêuticas e conformam um cuidado desmedicalizado, respeitoso e centrado na mulher, que promove a autonomia feminina.

Palavras-chave: Cuidados de Enfermagem; Enfermagem Obstétrica; Humanização da Assistência; Gestantes; Tecnologia Biomédica.

Resumen

Objetivo: describir las contribuciones terapéuticas de la utilización de tecnologías de atención no invasivas que ofrecen las enfermeras obstétricas durante el trabajo de parto. **Método:** estudio cualitativo y descriptivo, con ocho enfermeras obstétricas de una casa de partos de Río de Janeiro. Los datos fueron recolectados de septiembre a diciembre de 2018, a través de entrevistas semiestructuradas, y sometidos a la técnica de análisis temático. **Resultados:** para aliviar el dolor y favorecer la relajación, se recurre a fomentar la participación del acompañante y la respiración consciente, la aplicación de masajes, la promoción de un ambiente acogedor y el uso de agua tibia y aceites esenciales. Para activar el trabajo de parto, facilitan en el descenso de la presentación y corrección del posicionamiento fetal, fomentan las posiciones verticales y los movimientos corporales, con algunos instrumentos. **Conclusiones e implicaciones para la práctica:** las tecnologías de atención no invasiva tienen aportes terapéuticos y conforman un cuidado desmedicalizado, respetuoso y centrado en la mujer que promueve la autonomía femenina.

Palabras clave: Atención de Enfermería; Enfermería Obstétrica; Humanización de la Atención; Mujeres Embarazadas; Tecnología Biomédica.

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INTRODUCTION

The Brazilian obstetric model is characterized by medicalization that, historically, has shown unfavorable maternal and perinatal results. In this context, initiatives for the qualification and humanization of childbirth care stand out, which drive the reduction of unnecessary interventions and encourage the use of appropriate technologies and the performance of obstetric nursing[1-3].

The insertion of obstetric nurses in the parturition process is associated with care developed from a humanistic perspective, which promotes autonomy and well-being, with satisfaction of parturient women and positive outcomes compared to the medicalized model. Furthermore, there is an increase in women's access to practices considered beneficial, such as companion presence, the offer of non-pharmacological methods for pain relief, freedom of movement and food[2-6].

For obstetric nursing, this way of care is based on the concept of demedicalization, understanding that the phenomena of life and the health-disease process require approaches that go beyond the clinical-biomedical approach, admitting that care strategies must coexist with the woman's autonomy and right to choose. In this light, they offer different Non-Invasive Technologies of Nursing Care (NITNC), defined as structured knowledge that materializes in actions that nurses develop in a shared way with parturient women to favor parturition, with minimal intervention and invasion of the body, encourage their leading role and promote the pleasant experience of childbirth[2,4,7].

Based on the above, this article aimed to describe the therapeutic contributions of the use of non-invasive care technologies offered by obstetric nurses during labor. This research is relevant, as scientific publications commonly refer to NITNC as non-pharmacological methods for pain relief; however, it is believed that the intention of offering it during parturition goes beyond the objective of minimizing the painful sensation, as the practices of these specialists have several benefits and, therefore, are recognized worldwide as strategic to drive change in the obstetric care model[2,3,5,7].

METHOD

Descriptive and qualitative study, with eight obstetric nurses from a birthing center of the Municipal Health Department of Rio de Janeiro (MHD/RJ). Those who work in the direct care of women were included, excluding those who have less than four years in the institution. Thus, of the 15 specialists from the birthing center, four were excluded due to length of service, two due to health and maternity leave during data collection and one refused to participate.

Data collection took place from September to December 2018, through semi-structured interviews with an average duration of 60 minutes, based on the following script: Do you use non-invasive nursing care technologies with women during the parturition process? What technologies do you use and for what purposes? What are the contributions of using these technologies for women?

Participant gathering began with a face-to-face approach during the work shift, for a brief presentation of the research, followed by an invitation to participate. In case of acceptance, a telephone contact was requested for later scheduling of the individual interview.

The interviews took place at the institution, before or after working hours, in an environment chosen by participants and ensuring their privacy. They were performed, digitally recorded and transcribed by one of the authors, a resident in obstetric nursing at the time of data collection, who was previously trained for this stage of the field research.

Transcriptions were made at the end of the interviews, which allowed a glimpse of the moment of redundancy of the speeches, indicating data saturation and determining the end of the collection[8]. It is noteworthy that there were no losses during the research and that a pilot interview was carried out, which was included in the study for not pointing out the need for changes in the instrument.

The material from the interviews was submitted to thematic analysis[8]. This process began with the organization and systematization of the interviews, followed by data classification and thematic grouping, ending with the elaboration of interpretative summaries that culminated in two categories: *Objective contributions of the use of NITNC for women* and *Subjective contributions of the use of NITNC for women*.

The study was approved by the Institutional Review Boards of the *Universidade do Estado do Rio de Janeiro* and MHD/RJ, under Opinions 2.665.608 and 2.883.593. To preserve participants' anonymity, the letter I was adopted, referring to interviewed, followed by figures, representing the order in which the interview was carried out.

RESULTS

Participants are female, of which five are in the age group of 30 years and three are over 45 years old. Regarding the length of experience in labor and birth care, three obstetric nurses are between 18 and 28 years old, of which 14 are in the delivery room, and five specialists are between 5 and 7 years old, 4 in the institution where this study is carried out.

Objective contributions of the use of NITNC for women

In participants' perception, the use of NITNC contributes to promoting relaxation and comfort, alleviating the painful sensation, assisting in the descent of the presentation and correction of fetal positioning, as well as activating labor.

> *If the baby is tall and has good expansion, I use the stool. If the woman is very uncomfortable, I use massage and the bathtub because their use provides relief from the pain of the contraction.* (I1)

> *I use the dim lighting a lot, the aromas, offered according to the woman's wishes. Music to relax. Sometimes it will*

need a rebozo… when the baby is asymptomatic or in a variety of unfavorable positions, change her position or with spinning babies! (I2, I6, I7)

The vast majority love a dim lighting because of the most welcoming and relaxing environment! […] *the birthing stool, the ball, the rebozo to help the baby descend when the dilation is advanced.* (I3, I7)

The companion is very important! When she is in affinity with those who accompany her in labor, she usually flows very well! She gets much more empowered! (I4)

Massage to relieve lower back pain. [...] *in the bathtub, they report pain improvement. Scents come in as a relaxant or activator of labor! We use the foot bath to trigger labor.* (I5, I6)

We have exercises to get the baby better in the pelvis! The ball to strengthen the musculature and expand the space in the pelvis! (I8, I7)

Subjective contributions of the use of NITNC for women

Participants recognize that the use of NITNC translates into offering sensitive, respectful and individualized nursing care, which favors women's role, the exercise of their rights, freedom of decision and choice, access to information and satisfaction with parturition.

If we think that the concept of humanization is for women to be protagonists, to live the moment in an active way... guaranteeing her this right to choose is the main contribution of technologies. (I4, I2)

Guarantee women's right to knowledge and choice! Here, they have autonomy in decisions and, even when intervention is needed, they are told why, for what purpose… they have the knowledge to know which technologies they want to use, which ones they don't like, what they are for. The leading role that all knowledge brings to them is one of the contributions! It's showing them that we are mere spectators, that they may or may not need to intervene! (I5, I3)

It is differentiated and unique care! Through these technologies, we are able to offer everything that women need in this process: knowledge, empowerment, freedom of choice, decision-making power. (I6, I1)

These technologies rescue their leading role that, at times, was lost throughout their lives! It's a more unique care! Every woman has a different physiology and every birth will take place in a different way! So, the use of these technologies will be unique! […] *and they feel it! Give them the autonomy to live this process! The security and satisfaction they mention!* (E7, E1, E2, E8)

DISCUSSION

The analytical process revealed that obstetric nurses use different NITNC with women during parturition in the birthing center, recognizing their objective contributions, which correspond to the relationship between actions and concrete results; and subjective, which result from the worldview that guides them in the care process, adding meanings to the experiences and generating abstract results.

In order to promote comfort and relaxation, participants use the following NITNC: encouraging companion's presence, participation and involvement; encouragement to conscious breathing; promotion of a welcoming environment; and application of knowledge about essential oils, associated or not with the massage technique. These technologies were presented in the speeches, respectively, through the terms "accompanying people", "breathing", "dim lighting", "songs and incense" and "smells or aromatherapy".

The participation of women's choice of companion during childbirth is a right and a recommended obstetric practice, as it translates into emotional support, physical comfort, informational support, motivation, security, confidence, relaxation and tranquility, perception of the role of the mother and a positive experience of childbirth. This NITNC is related to an increase in spontaneous births, reduction in the duration of labor and the occurrence of complications, analgesia, unnecessary interventions, cesarean sections, instrumental deliveries and neonatal asphyxia[9-12].

Encouragement to conscious breathing in parturition is a technique that consists of alternating periods of relaxation of the body muscles with different respiratory patterns[9,10,12]. Generally used in association with other techniques, it acts as a mechanism for controlling the nervous system that, through the activation of mental processes that make labor sensations more pleasant, promotes reduction of circulating levels of stress hormones and release of endorphins, lowering blood pressure and increasing oxygen levels[13,14].

Despite the low quality of the available scientific evidence, conscious breathing promotes emotional balance, relaxation, encouragement, vigor, comfort and well-being, decreasing the level of anxiety and helping to cope with contractions, reducing labor duration[12-14].

The offering of music and dim lighting express nurses' concern with the parturition environment as a factor that influences women's well-being of women, since childbirth involves a process of activation of the primitive region of the brain to achieve hormonal balance necessary for physiological evolution. On the other hand, the lack of privacy and attention given by professionals, unnecessary interventions, excessive light and noise, anxiety and stress can negatively interfere, inhibiting the primal cortex and encouraging the neocortex, a region of the brain responsible for reasoning[15].

Thus, it is recommended that the delivery environment be welcoming and comfortable, with low light, being a care that contributes to humanization of care, with respect to women's physiology, privacy and individuality, besides transmitting tranquility,

minimizing the painful sensation, favoring their concentration, improving body perception and autonomy[9,10,15].

Corroborating for a pleasant environment, music therapy stands out, which is the use of music to trigger areas of the brain related to emotions and the reward system. In parturition, it minimizes anxiety, stress and fear, increases stamina and mood, decreases the heart pulse and respiratory efforts, presenting positive results on painful perception[13,16].

In addition to low light and ambient music, participants also scored the use of aromas, through incense or oils, to create a relaxing atmosphere. According to traditional Chinese therapy, aromatherapy consists in the application of essential oils to regain the balance and harmony of the body aiming at promoting physical and mental health[4,17].

It is found that essential oils act in the release of encephalins and endorphins, which have analgesic effect and produce a feeling of well-being and relaxation, with actions on physiological parameters and stress response. By inhaling, there is encouragement of olfactory nerve cells that activate receptors of the limbic system, responsible for emotions, feelings and motivational impulses[16].

Considering each oil's therapeutic properties and each woman's singularities, the offer in obstetric care can be through of environmental diffusion, inhalation, topical use or dilution in water, being common the association with massage or scalding feet[4,16,17].

Another contribution of NITNC pointed out by participants is to relieve the painful sensation through: the use of warm water in an immersion bath, called by them as a bathtub; the application of massage; encouragement to walk; and encouraging conscious breathing, which is also used to promote comfort and well-being.

Hot bath or hydrotherapy is an affordable, low-cost and high-effective technique, which consists of using water around 37ºC for at least 20 minutes to slow the nociceptive afferent transmission of epidermal thermoreceptors and reduce sympathetic activity, reducing levels of stress-related neuroendocrine hormones and raising the levels of encephalins and endocrine ines[12,16,18].

The use of warm water during parturition promotes peripheral vasodilation, relaxation of local muscles and increased tolerance to pain. Therefore, it has benefits on the physiological progression of labor, because, by improving the distribution of muscle blood flow, it reduces stress caused by contractions, regulates uterine contractility, favors cervical dilation and assists in the rotation of the cephalic pole, especially in later fetal presentations[16,18].

In the form of a sprinkle or immersion bath, the use of warm water is recommended as a non-pharmacological method of pain relief during labor[9,10]. However, its use exceeds this benefit, being one of the NITNC most demanded by parturient women, because it is associated with the feeling of invigoration, comfort, relaxation and well-being, perception of autonomy, companion participation and satisfaction with parturition[4,18].

Massage is a sensory encouragement technique, based on systemic touch and tissue manipulation, which activates the sympathetic and parasympathetic systems, reducing adrenaline and norepinephrine secretion as well as increasing the release of endorphins and oxytocin[19]. Its use is recommended to reduce anxiety and stress, promote relaxation and comfort, relieve pain and discomfort, decrease muscle fatigue and provide body awareness and emotional balance[12,19]. During childbirth, the application of massage favors physiological evolution, reduces labor duration, improves uterine contractions, strengthens bond with professional and reverts to greater satisfaction[9,10,16].

Encouragement to walking is related to the encouragement of women's freedom of movement during labor. Historically, horizontal positions predominated, in which women's vertebrae remained aligned between 0 and 45 degrees[20]. However, current recommendations point to encouraging free movement, including walking, and for the adoption of comfortable, mainly vertical placements[9,10].

Vertical positions (standing, sitting on a chair, stool or birthing stool, kneeling, squatting or on all fours) should be encouraged, as by enabling the vertebrae alignment at an angle equal to or greater than 90 degrees and favoring pelvic mobility concomitant with gravity action on the central axis of the body; they present important benefits for the physiological progression of childbirth, with women's satisfaction for providing comfort, active participation, greater perception of respect and control over the process[20].

Freedom of movement allows walking and changing positions, relating to improved uterine dynamics, increased pain tolerance, optimization of cervical dilation and fetal descent, acceleration of the active phase and reduction of labor, the use of analgesia and the occurrence of cesarean sections. In the expulsive period, it improves maternal pulls, fetal oxygenation and perineal results, favors sacral mobility and the expansion of anteroposterior and transverse pelvic diameters[16,20].

With the intention of assisting in the descent of the presentation and in the correction of fetal positioning, participants resort to the following NITNC: encouragement of walking, also used to relieve pain; application of knowledge about essential oils' properties, associated or not to the massage technique; incentive to vertical positions, with the use of a ball, stool or birthing stool; and encouragement of women's specific body and pelvic movements, called by them as *rebozo* and *spinning babies*.

When incentive to vertical positions exceeds the objective of alleviating pain, obstetric nurses use the Swiss ball, a playful instrument that shifts the focus of unpleasant sensations and presents therapeutic actions[12,18]. In obstetrics, the use of the ball provides the active participation of women, improves uterine circulation and contractions, assists in fetal descent and progression, promotes comfort, relieves pain, favors the progression of labor and is associated with reduced use of analgesia and oxytocites, as well as the occurrence of episiotomy, maternal traumas, instrumental deliveries and surgical outcomes[16,18].

These benefits come from the verticalized positioning, which provides the action of gravity and the alignment of the fetal axis with the maternal pelvis, and the relaxation of perineal muscles, provided by active pelvic exercises of stretching and mobility on the ball[16,18]. In association with the massage technique, with the incentive to conscious breathing or with the use of warm water in

the dilation phase, reduction of pain, promotion of comfort, lower rates of epidural analgesia and higher occurrence of vaginal delivery were identified[12,18].

The stool and birthing stool are instruments with benefits similar to the use of the ball and vertical positionings. The first is a low bench in the shape of a half moon, which favors the descent of fetal presentation in labor or in the expulsive period. The second is similar to a chair with an inverted seat and armrest, which provides forward chest tilt and pelvic balance, as well as relaxation of the lower back muscles during labor[16].

As *rebozo* and *spinning babies* appear in participants' speeches, the encouragement to specific body and pelvic movements is a NITNC that consists of relaxation and mobility exercises used during pregnancy and labor, including: walking; calf stretching; squat; lunge-type mobilization; hip opening; leg swing; forward tilted inversion; elevation of the belly, in a position of four supports; static myofascial stretching; and release from the sacrum[21,22].

Rebozo is a technique that uses a shawl to move the pelvis in a rhythmic, smooth and controlled way, in order to promote muscle and ligament relaxation in the lumbar and pelvic region, help in the descent of the fetal presentation or correct cases of asynclitism, being contraindicated in the face of maternal discomfort, non-tranquilizing fetal heart rate, abnormal vaginal bleeding, and risk of prolapsed cord or placental abruption[21].

Spinning babies is a knowledge-based approach to anatomy and physiology to favor parturition with natural resources, which encourage body awareness, optimize the alignment of maternal and fetal positions, assist in fetal accommodation, promote muscle and ligament relaxation and stretching, increase flexibility and mobility of the pelvis, providing comfort and minimizing pain[22].

Despite the lack of clinical studies, the benefits of *rebozo* and spinning babies are documented in experience reports and women's narratives that reveal positive results on the progression of labor, uterine dynamics and pain relief, associated with pleasant bodily sensations, perception of emotional support, empowerment, pleasure, well-being, cooperation and safety[21]. Although not mentioned in official recommendations, it is understood that these techniques are close to obstetric practices that promote and protect the physiological process of childbirth, such as encouraging walking, freedom of movement and vertical positions[9,10].

To activate labor, in addition to encouraging body and pelvic movements and applying knowledge about essential oils, associated or not with the massage technique, participants also use the technique of immersing their feet in warm water, such as a NITNC which they call "foot bath".

This technique is indicated to relieve edema and discomfort in the lower limbs, because warm water promotes vasodilation and favors blood circulation. Furthermore, by evoking pleasant sensations, it promotes relaxation and reduces fatigue and anxiety by increasing parasympathetic activity, with the release of endorphins accompanied by decreased cortisol and adrenaline levels[23].

In addition to the therapeutic contributions evidenced in this study, participants' statements also show the recognition of the role of women in parturition. This finding reveals that the use of NITNC forms a respectful and woman-centered care process, which has demedicalized characteristics and presents as subjective contributions the development of individualized, singular, sensitive, educational and emancipatory nursing care, which promote female autonomy.

Pointed out as a strategy to qualify obstetric care and improve the satisfaction of parturient women, the promotion of respectful maternal care consists of an approach to women based on fundamental human rights, which considers their needs and preferences, as well as provides equitable access to care based on scientific evidence[2,6].

Women-centered care is a theoretical model of practices in childbirth care, strongly associated with obstetric nurses' work and adopted in several countries, such as the USA, New Zealand, Scotland, Sweden, Iceland, and South Africa, which involves welcoming, bonding and communication as fundamental elements for establishing a relationship in which women are treated in a dignified manner and actively participate in decision-making about their health[5,24].

As characteristics observed in obstetric nurses' speeches, in this study, respectful and woman-centered care permeates attitudes, behaviors and practices that: provide a safe environment; show kindness, availability and security; share information on the possibilities of assistance; ensure informed consent and continuity of family support; provide clear, effective and judgment-free communication; ensure privacy, confidentiality and dignity; involve women in decision-making processes; support their choices; respect their culture, beliefs, desires, and subjectivities[5,6,9,11,24].

Thus, it is noted that these principles of obstetric care are aligned with the conception of demedicalization, which presupposes incorporating premises of the humanistic model and knowledge from different fields of knowledge to understand parturition as a natural phenomenon of life, valuing female leading role, presenting care options and sharing decisions[2-5,7].

Considering the above, this research revealed that the provision of NITNC by obstetric nurses in the delivery room is part of demedicalized, respectful and woman-centered care, which is based on an interactional process with intentionality, production of subjectivities and negotiated actions to achieve therapeutic goals in parturition. Thus, through association of knowledge, techniques and procedures with dialogical and sensitive attitudes and behaviors, care aggregates noninvasive attributes, achieves the comprehensiveness of the human being, guards the physiology of the female body and, above all, ensures the exercise of citizenship of women.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

Obstetric nurses use different NITNC with women during the parturition process in the birthing center, which present

specific indications, objective contributions that substantiate its therapeutic use and subjective contributions, which permeate a relationship of demedicalized care, respectful and centered on women, with obstetric practices aligned with the principles of integrality, humanization and autonomy.

As a limitation of this study, the gap in knowledge about NITNC stands out, as most publications address them as non-pharmacological methods for pain relief, disregarding their subjective and transformative potential for women. Thus, it is suggested to conduct research to validate the NITNC, in order to produce scientific evidence that relates its contributions to women's satisfaction, quality and safety of obstetric care.

Furthermore, it is noteworthy the fact that participants predominantly refer to the NITNC as instruments arising from the industrial process and integrative and complementary practices. This finding needs further reflection, as the adoption of this discursive resource can interfere with the social recognition of obstetric nurses and the professional autonomy of the specialty.

AUTHORS' CONTRIBUTIONS

Study design. Juliana Amaral Prata. Nayara Diniz Pamplona.

Data collection or production. Nayara Diniz Pamplona.

Data analysis. Juliana Amaral Prata. Nayara Diniz Pamplona.

Interpretation of results. Juliana Amaral Prata. Nayara Diniz Pamplona. Jane Márcia Progianti. Ricardo José Oliveira Mouta. Luiza Mara Correia. Adriana Lenho de Figueiredo.

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