RIASE
REVISTA IBERO-AMERICANA DE SAÚDE E ENVELHECIMENTO
REVISTA IBERO-AMERICANA DE SALUD Y ENVEJECIMIENTO

FREEDOM OF MOVEMENT AND POSITION IN THE FIRST STAGE OF LABOR

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VOL. 3 N.º 1 APRIL 2017

ABSTRACT

Objective: To analyse the scientific evidence, in the literature published between january 2007 and february 2016, about the benefits of freedmon of movement and position in the first stage of labor.

Method: Review of literature with articles researched in selected databases on plataforms b-On and EBSCOhost, using descriptors: first stage of labour/labor, ambulation, upright positions, benefits and midwife/midwives.

Results: Sample with 15 studies that showed, almost unanimously, that the free movement associated with the vertical position provides numerous benefits, especially in the progression of the first stage of labor, reduction of pain and increased maternal satisfaction, in the quality of uterine contractions and maternal-fetal circulation compared to the dorsal lithotomy position.

Conclusion: Woman should have the right of choice as to freedom of movement and position during first stage of labor, being informed about the benefits of this intervention by the nurse midwife who cares for her.

Descriptors (MeSH Terms): Walking; posture; labor, obstetric; nurse midwife.

INTRODUCTION

Several international organizations recommend the freedom of movement, with the woman's encouragement in adopting vertical positions as advantageous practices in the dynamics of the first stage of labor[1-2].

The influence of the body attitude assumed by the parturient and the body dynamics impressed by the movement are based on certain mechanisms: action of gravity, compression of the great maternal vessels, increase in the diameters of the birth canal and the angle of attachment of the fetal head, pulmonary ventilation and acid-base balance[3].

The pelvis is maintained by a set of ligaments, which in the course of pregnancy relax due to the action of the hormone relaxin, which promotes a greater elasticity of the pelvic joints and consequently the significant increase of the space inside the pelvic basin, especially when the parturient moves or changes position[4].

The gravid body in balance with the direction of gravitational force and the angle of incidence of the uterus facilitates the mechanisms of entrapment and fetal descent, either by the presentation pole in the maternal pelvis or by the direct support of the fetal head

on the cervix. In this way, vertical postures allow relaxation of the perineum and the sacroiliac bones can move in order to increase the diameters of the basin narrows, by counter-shifting, which increases the upper narrow (important in the interlocking phase) and nutation, which increases the middle and lower straits (important in the phase of descent and expulsion of the fetus)[5]. When the woman is in vertical position, namely in the Indian position or squatting position, she makes it possible for her legs to act as a lever for the pelvis, favoring a 28% increase in the area of the pelvic exit plane or 1 to 1, 5 cm from the diameters of the lower stratum of the pelvic basin[6].

In the parturient in movement, adopting the erect position, the angle between the longitudinal axis of the fetal spine and the maternal spine is smaller, requiring less effort of the uterus[3]. The action of gravity by promoting fetal head pressure in the lower part of the uterus triggers a reflex at the hypothalamic-pituitary level, which consequently stimulates oxytocin production and favors better uterine irrigation, enhancing the function of muscle fibers, which results in more effective contractions, becoming the first stage of labor shorter, with better parturient tolerance to pain and consequently reducing the need for analgesia[3,6-7]. The effect of force also leads to a lower risk of maternal hypotension due to non-aortocave compression, which effectively improves maternal-fetal oxygenation[8].

Free movement for vertical posture ensures maternal-fetal-placental changes over a longer period of time, thus reducing the risk of fetal distress, which is reflected by a worrying or non-reassuring fetal heart tracing. The evaluation of pulmonary ventilation and acid-base balance of the newborn proves these benefits, presenting better results when the woman remains upright during the period of dilation[3,6].

The adoption of vertical positions by the parturient represents the possibility of the process of parturition culminating in a eutocic delivery. Certain positions, specifically the hand-knee position, assume as a facilitator in the spontaneous fetal rotation of the occipito-posterior to occipito-anterior variety, avoiding instrumental or surgical deliveries. Promoting spontaneous fetal rotation in occipito-sacred or transverse presentations also facilitates biachromial detachment in shoulder dystonia and decreases the episiotomy procedure or the occurrence of perineal lacerations because it allows perineal protection during cephalic deflection[9].

Roaming, walking or moving and changing position, besides facilitating in all aspects the first stage of labor, are an excellent way of distracting the discomforts that are inherent to the whole process, allowing to improve the comfort of the woman, as well as the sense of control over one's own body and the interaction with the significant person, making the whole moment more satisfying[6-7].

To the woman it should be given the right of choice for free movement and for the position she considers to be most advantageous in the performance of her labor[10]. In this field, the Maternal and Midwifery Specialist Nurse should provide guidance on the benefits of vertical postures and ambulation during labor to ensure a conscious and informed decision on the part of the parturient[11].

The objective of the study was to analyze the scientific literature on the benefits of freedom of movement and positions in the first stage of labor, in order to transmit specific knowledge about these practices to Maternal and Midwifery Specialist Nurses; it is an area of autonomous intervention in the conduction of the parturition process.

METHODS

In order to systematize the state of knowledge associated with the theme, a review of the literature was carried out. To guide scientific research, the question of research was formulated, according to the acronym PI [C] O - Problem or Participant; Interventions; Context and Outcomes: What are the benefits (Outcomes) of ambulation and vertical positions (Interventions), promoted by Maternal and Specialist Nursing Practitioners, in women (Participants) during the first stage of labor (Context)?

Access to evidence related to the research question was made possible by searching the MedicLatina, MEDLINE and CINAHL Plus electronic databases on the b-On platform and through the aggregated databases Cochrane Database of Controlled Trials, Cochrane Database of Systematic Reviews, MEDLINE and CINAHL Plus on the EBSCOhost platform, using the descriptors: first stage of labor/birth, ambulation, vertical positions, benefits and midwife/midwives. The terms benefits and outcomes are further considered as synonyms of the benefits descriptor.

Inclusion criteria were defined as: different types of studies with scientific evidence that mentioned the benefits of walking and vertical positions in the first stage of labor, with a summary and text available in full text format and whose time limit of publications was included in the study, from January 2007 to February 2016. The exclusion criteria stipulated studies that were not written in Portuguese, English, French or Spanish.

The research by the descriptors originated 96 articles. In their selection, the abstracts were first read in order to refine the sample. Where the summary has not been considered explicit, the article was read in full. Articles that did not meet defined inclusion criteria as well as repeat articles were excluded. By means of this process, the final sample consisted of 15 articles.

Table 1 - Synthesis of literature review studies

Article Title/ Year of Publication	Design and Number of Stakeholders	Main Outcomes
The effect of ambulation on the duration of the Active Phase of Labor[12]. (2007)	**Analytical Study of Quasi-Experimental Intervention** Analysis of the association between ambulation and duration of the active phase of labor in a group of 80 primi-pregnant.	Reduction in the duration of labor, in primipregnant who wandered a greater distance in the first three hours of the active phase.
Upright Position during the First Stage of Labor: a randomised controlled trial[13]. (2007)	**Controlled Randomized Study** Evaluation of the effect of vertical position in two groups of nulliparas (Study Group - 54 women and Control Group - 53 women) in the first stage of labor, in terms of pain, satisfaction and other obstetric and neonatal outcomes.	Lower pain score and higher degree of satisfaction among women who adopted vertical positions. Groups with no difference in duration of the first stage of labor, type of delivery, request for epidural analgesia, use of oxytocin and fetal/neonatal well-being.
The Vertical Position during Labor: Pain and Satisfaction[14]. (2009)	**Secondary Analysis - Controlled Randomized Study** Evaluation of the effect of vertical position in 107 nulliparous the first stage of labor, pain, and satisfaction.	Decreased pain level and higher degree of maternal satisfaction, associated with the adoption of vertical positions.
Intérêt de la Déambulation au cours du Travail Obstétrical: Étude Prospective Randomisée de 200 cas[15]. (2010)	**Controlled Randomized Study** Evaluation of the effects of ambulation on the progression of the first stage of labor and maternal-fetal well-being, in a sample of 200 parturients divided into the Study Group and in the Control Group.	Study Group: decreased duration of latent phase, pain level, oxytocin use, dystocic/surgical deliveries, episiotomies, and maternal and fetal/neonatal complications.
Upright vs Recumbent Maternal Position during First Stage of Labour[16]. (2010)	**Systematic Review of Literature** Analysis of 21 randomized or quasi-randomized studies, including 3706 women in the first stage of labor, to realize the effect of maternal posture on the duration of labor, maternal satisfaction and other results, comparing the postures with the postures reclined.	Proven effect of vertical positions on reducing the duration of the first stage of labor and on the request for epidural analgesia. No obvious results in the type of delivery and inconclusive in maternal satisfaction and other variables.
Midwives should support Women to Mobilize during Labour[17]. (2010)	**Systematic Review of Literature** Review of studies carried out between 1978-1997 and 2002-2009, on the effects of deambulation/vertical positions on the mother and in the fetus/newborn during labor.	Women who wandered or assumed vertical positions had shorter labor, decreased use of narcotics, fewer dystocic deliveries, and increased satisfaction. Little conclusive results on the influence of mobility on oxytocin use.
What are the Facilitators, Inibitors and Implications of Birth Positioning?[18]. (2012)	**Systematic Review of Literature** Analyze in 40 studies the implications of different positions labor and maternal and perinatal well-being. Identification factors that facilitate or inhibit the adoption of various positions during the first stage of labor.	Consensus studies: shorter duration of the first stage of labor, fewer painful complaints, and greater satisfaction. The environment and the philosophy of care can influence women in the adoption of vertical postures.

Table 1 - Synthesis of literature review studies

Article Title/ Year of Publication	Design and Number of Stakeholders	Main Outcomes
Maternal Positions and Mobility during First Stage Labour[19]. (2013)	**Systematic Review of Literature** Review of 25 randomized, quasi-randomized trials (5218 women - 3337 with epidural analgesia and 1881 without epidural analgesia) to compare the effect of vertical position with recumbent position on different variables.	Women without epidural analgesia who adopted vertical positions: shorter duration of the first stage of labor, lower rate of cesarean section and fetal / neonatal complications. Women with epidural analgesia did not present significant differences regarding the different variables analyzed.
Effect of Upright Position on the duration of First Stage of Labour among Nuliparous Mothers[20]. (2013)	**Randomized Quasi-Experimental Study** Determination of the effect of vertical positions on the duration of the active phase of labor in 60 nulliparuses distributed by the Study Group and by the Control Group.	Study Group: spontaneous onset of labor, less use of exogenous oxytocin, total of euthrotic deliveries and shorter duration of the active phase, in relation to the Control Group.
A Narrative Review of Maternal Physical Activity during Labour and its effects upon length of First Stage[21]. (2013)	**Narrative Review of Literature** Compilation of 18 studies on the effect of mobility and vertical positions in the first stage of labor.	Most studies with contradictory results on the association between movement in the first stage of labor and its duration.
Healthy Birth Pratice # 2: Walk, Move Around, and Change Positions Throughout Labour[22]. (2014)	**Systematic Review of Literature** Analyze randomized and quasi-randomized studies to discuss factors that may support the adoption of freedom of movement.	Studies with no statistical inference in some results, but that advocate body movement as a strategy for coping with pain in labor. Freedom of movement depends on: permission, environment, team and practice of care.
Women´s Choice of Positions during Labour: Return to the Past or a Modern Way to Give Birth? A Cohort Study in Italy[23]. (2014)	**Observational Cohort Study** Comparison of maternal and neonatal outcomes among 225 parturients in the first stage of labor divided into two groups (Control Group - 69 women and Study Group - 156 women).	Study Group: shorter duration of labor, greater tolerance to pain, lower rate of dystocic delivery / episiotomy, fewer situations of abnormal fetal heart rate recording and persistence of the posterior occipito variety until delivery.
Effectiveness of Ambulation during First Stage of Labour, on the Outcome of Labour among Primigravid Women in selected hospitals of Palakkad District Kerala[24]. (2015)	**Quasi-Experimental Study** Determination of the efficacy of ambulation during the first stage of labor in a sample of 60 primigravidae: Study Group (30 women) and Control Group (30 women).	Study Group: shorter duration of the first stage of labor and greater tolerance to pain of uterine contractions. There was no difference between the groups regarding the type of delivery.

Table 1 - Synthesis of literature review studies

Article Title/ Year of Publication	Design and Number of Stakeholders	Main Outcomes
Maternal Positioning to correct occiput posterior fetal position during the First Stage of Labour: a randoised controlled trial[25]. (2016)	Controlled Randomized Study In 439 women, the efficacy of the position of the hands and knees on the rotation of the fetal head from posterior occipito to anterior occipito was evaluated.	The benefit of the position of hands and knees in the spontaneous correction of the posterior occipito variety has not been demonstrated. Increased pain relief in women who adopted this position.

The majority of the studies analyzed had the objective of demonstrating the influence that the ambulation associated with the vertical positions assumes in certain variables: duration of the first stage of labor; use of oxytocics or other maneuvers to accelerate labor; ache; use of epidural analgesia or opioids; spontaneous rotation of the fetal head; type of delivery; performance of episiotomy/occurrence of perineal trauma; maternal satisfaction and fetal/neonatal well-being. The benefits of freedom of movement and vertical postures were evident in relation to these variables, compared to the dorsal position. However, in some studies, not all variables showed statistically significant differences, when the study group (intervention target - ambulation and vertical positions) and control group (supine positions) were compared.

In an experimental study, which analyzed the relation between ambulation and duration of the active phase, it was concluded that women who wandered a greater distance in the first three hours of this phase had a reduction in their duration. However, the evaluation of the effect of ambulation associated with artificial rupture of the pouch and the use of oxytocin did not show statistical significance in relation to the duration of the active phase. Regarding the type of delivery, it was highlighted that the majority of the women had a eutocic delivery. The neonatal results, after evaluation at the 5th minute of life, obtained values of Apgar Index greater than or equal to 7, representing good vitality conditions. In this study, the nurse continuously encouraged all parturients to adhere to the free movement, providing them with guidelines[12].

However, in a survey of more than 100 women, no statistically significant differences were found in the duration of the first stage of labor, the type of delivery, the need for oxytocin use and the use of epidural analgesia, and the fetal and neonatal[13].

The assessment of nulliparous pain, according to the position adopted in the active phase, revealed that at 4 cm of dilation, women who presented a score 5 on the Numerical Pain Scale, remained most of the time upright (41% of the time of duration), while women with score 7 were only upright about 21% of the total time of the first stage of labor. Maternal satisfaction with the adopted position showed that, in women between 4-6 cm dilatation, there was a higher satisfaction in those who remained upright, in more than 50% of the duration of the active phase[14].

A randomized trial has confirmed that movement has beneficial effects on latent phase progression. In the women included in the Study Group the mean duration of the latent phase was approximately 10 hours and for the women in the Control Group, 15 hours. In the mean duration of the active phase, there was no statistically significant difference between the two groups. The results also demonstrated that there was a decrease in pain

scores in the latent phase, associated with ambulation, as well as a reduction in oxytocin use, number of dystocic deliveries, episiotomies and maternal complications[15].

In other systematic reviews of the literature that compiled several clinical trials, the analysis also highlighted the scientific evidence on the physical and psychological advantages of vertical positions in the shorter duration of the first phase of labor associated with the effectiveness of uterine contractility[16-18]. However, when the type of delivery was unanimous among the studies analyzed, when the woman was encouraged to walk and remain upright during the first stage of labor, the number of instrumental/surgical deliveries decreased[16], and the results of other researches, allowed to conclude that there were no differences in the type of delivery associated with the fact that women had adopted vertical positions[17].

It was also verified that women in a vertical position, presenting a greater tolerance to pain triggered by uterine contractions, were less likely to have epidural analgesia than women who remained in supine positions, as well as the administration of narcotics for the relief of pain, which has brought benefits to neonatal outcomes[17].

More recently, another literature review of research, also found that in women without epidural analgesia and have adopted different vertical positions there was a decrease in the duration of the first stage of labor, lower rate of cesarean sections and fetal/neonatal complications. However, in the parturients with epidural analgesia, there were no significant differences regarding the variables mentioned[19].

Regarding the obstetric variable related to the duration of the first stage of labor, another of the studies analyzed also showed a shortening in the duration of the active phase of approximately 2 hours for the women in the Study Group compared to the women in the study group in the Control Group. In this experimental study, 50% of women had spontaneous labor onset and the association between utero-oxytocics and other drugs to accelerate their progression was found in 13.3% of the women who remained lying down and in only 3, 3% of women who chose to wander and / or alternate different vertical positions, all of which had a vaginal delivery[20].

The correlation between the adoption of freedom of movement/position and the decrease in the use of oxytocics was also significant in some of the studies analyzed in a narrative review. However, the same research has shown contradictory results in relation to the association between maternal physical activity in the first stage of labor and its duration[21].

Similar to other investigations, the results of a cohort study showed that the adoption of different vertical positions contributed to a significant reduction in the duration of the first stage of labor, with an increase in efficacy in positive behavioral responses characterized

by a greater pain tolerance of uterine contractions; the reduction of abnormal fetal heart rate recording situations and the rate of instrumental/surgical deliveries, as well as the occurrence of severe perineal dystocias and lacerations, episiotomy and the need for maneuvers neonatal resuscitation. On the other hand, the persistence of the posterior occipito variety until the moment of delivery was observed in 39.6% of the women who had supine positions versus 28% of the women who experienced non-supine positions[23].

Contrary to this study, another quasi-experimental trial failed to prove a significant relationship between ambulation and type of delivery, however, for women who were motivated to walk, according to their tolerance, they gave them rest periods, and recommended walking as a comfort strategy[24]. Women in a clinical trial also reported greater relief from the discomfort associated with adopting vertical postures, specifically the position of hands and knees. However, the same study could not justify the benefit of this position in the correction of fetal static for the variety[25].

Some of the studies analyzed also indicated that certain factors may facilitate or inhibit the promotion of ambulation and the adoption of vertical positions, namely: the environment in which labor takes place; assistance provided by midwives; women's knowledge about the benefits of these practices and their ability to make an informed decision about certain interventions that they are routinely subjected to and that interfere with their freedom of movement and positioning[17-18,21-22].

CONCLUSIONS

The literature review allowed us to verify that in the last decades, a greater articulation between the process of clinical support, autonomy and spontaneity resulting from the search for comfort and well-being by the parturient herself has led to a new perception and understanding about the effect of certain interventions, resulting in the encouragement of practices that provide the parturient with greater involvement and empowerment in decisions about their labor and delivery.

The incentive to ambulation and the alternation of vertical positions has been re-evaluated and indicated as advantageous for the woman and for the fetus/newborn. Thus, through this systematic review of the literature, it was possible to conclude, based on the scientific data of most studies, that the physical and physiological action allied to the vertical position, compared to the dorsal lithotomy position, gives a set of beneficial effects, namely the progression of labor, the reduction of pain and increased maternal satisfaction, the quality of uterine contractions, and maternal-fetal circulation.

The transversal idea to all the studies analyzed allowed us to still infer that there is no universally accepted position and considered perfect for women in the parturients, since each woman is a unique being with different characteristics, and labor is a dynamic event. Women should realize that they are allowed to move around and choose the position or positions they wish to adopt, without there being any providers limiting their options. The care philosophy should be based on an informed and shared decision-making process between the actors, the Maternal Health Specialist Nursing and the parturient, assessing the advantages and / or implications of walking and vertical positions versus supine positions and being assured and respected alternatives chosen by the woman for her comfort and well-being throughout the labor process.

REFERENCES

1. Royal College of Midwives. Evidence Guidelines Midwifery-Led Care in: Labour. Positions for Labour and Birth. London (GB): RCM; 2012.

2. World Health Organization. WHO recommendations for augmentation of labour. Geneva (CH): WHO Library Cataloguing; 2014.

3. Mamede FV, Mamede MV, Dotto LGGI. Reflexões sobre a Deambulação e Posição Materna no Trabalho de Parto e Parto. Esc Anna Nery R Enferm. [Internet]. 2007; [cited 2 Oct 2015]; 11 (2): 331-36. Available in: http://dx.doi.org/10.1590/S1414-81452007000200023

4. Robertson A. The Midwife companion. The art of support during birth. Austrália (AU): ACE graphics; 2000.

5. Nogueira J. Posições alternativas em Trabalho de Parto. Revista da Associação Portuguesa de Enfermeiros Obstetras. 2012; (12): 25-8.

6. Mamede FV, Almeida AM, Clapis MJ. Movimentação/deambulação no trabalho de parto: uma revisão. Acta Sci Health Sci. 2004; 26 (2): 295-302.

7. Aguilar OC, Romero ALF, Garcia VEM. Comparación de resultados obstétricos y perinatales del parto en postura vertical versus supina. Ginecol Obstet Mex. 2013; 81 (1): 1-10.

8. Borde MBM, Gómez PMV, Huerta, MSM, Barbero EV, López AIT, Barreiro SA. Influencia en los resultados obstétricos de determinadas posiciones durante el trabajo de parto con analgesia epidural. Matronas Hoy. 2014; 2 (2): 8-16.

9. Soong B, Barnes, M. Maternal position at midwife-attended birth and perineal trauma: is there an association? Birth: Issues in Perinatal Care. 2005; 32 (3): 164-69.

10. Cutler L. A consideration of the positions women adopt for labour. British Journal of Midwifery. 2012; 20 (5): 346-49.

11. Roy MER, Moreno AC, Jimeno JF. Las posturas de la mujer de parto en fase de expulsivo: revisión de la evidencia científica y recomendaciones. Medicina Naturista. 2014; 8 (1), 23-30.

12. Mamede FV, Gomes FA, Almeida AM, Panobianco MS, Nakano AMS. O Efeito da Deambulação na Duração da Fase Ativa do Trabalho de Parto. Esc Anna Nery Enferm. 2007; 11 (3): 466-471.

13. Miquelutti MA, Cecatti JG, Makuch MY. Upright Position during the First Stage of Labor: a randomised controlled trial. Acta Obstetricia e Gynecologica. 2007; 86: 553-58.

14. Miquelutti AM, Cecatti JG, Morais SS, Makuch MY. The Vertical Position during Labor: Pain and Satisfaction. Rev. Bras Saude Matern. Infant. Recife. 2009; 9 (4): 393-98.

15. Regaya LB, Fatnassi R, Khlifi A, Fékih M, Kebaili S, Soltan K, Khairi, Hidar S. Intérêt de la déambulation au cours du travail obstétrical: Étude Prospective Randomisée de 200 cas. Journal de Gynécologie Obstétrique et Biologie de la Reproduction. 2010; 39: 656-662.

16. Kripke C. Upright vs Recumbent Maternal Position during First Stage of Labour. American Family Physician. 2010; 81 (3), 285-86.

17. Baker K. Midwives should support Women to mobilize during labour. British Journal of Midwifery. 2010; 18 (8): 492-97.

18. Priddis H, Dahlen, H, Schmied V. What are the facilitators, inhibitors, and implications of Birth Positioning? A Review of the Literature. Woman and Birth. 2012; 25 (3): 100-06.

19. Lawrence A, Lewis L, Hofmeyr GJ, Styles C. Maternal Positions and Mobility during First Stage Labour (Review). Cochrane Database Reviews. (10). 2013; [consult 2016 Mar 2]. Doi: 10.1002 / 14651858.CD003934.pub4.

20. Kumud, Rana AK, Chopra S. Effect of upright positions on the duration of first stage of labour among nuliparous mothers. Nursing and Midwifery Research Journal. [Internet]. 2013 Oct 9; [cited 9 Mar 2016]; 9 (1): 10-18. Available in: medind.nic.in/nad/t13/ i1/ nadt13i1p10.pdf.

21. Hollins Martin CJ, Martin CR. A Narrative Review of maternal Physical Activity during Labour and its Effects upon length of First Stage. Journal Complementary Therapies in Clinical Practice. 2013; 19 (1): 44-49.

22. Ondeck M. Healthy birth practice #2: walk, move around, and change positions throughout labor. J Perinat Educ [Internet]. 2014 Jan 1 [cited 9 Mar 2016]; 23(4): 188– 193. Available in: http://dx.doi.org/10.1891/1058-1243.23.4.188

23. Gizzo S, Di Gangi S, Noventa M, Bacile V, Zambon A, Nardelli GB. Women's Choice of Positions during Labour: Return to the Past or a Modern Way to Give Birth? A Cohort Study in Italy. Biomed Research International. 2014; ISSN: 2314-6133.

24. Prabhakar D, George LS, Karkada S. Effectiveness of Ambulation during First Stage of Labour, on the Outcome of Labour among Primigravid Women in Selected Hospitals of Palakkad District, Kerala. International Journal of Nursing Education. 2015; 7 (1), 1-6.

25. Guittier, MJ, Othenin, G, Gasquet, B, Irion, O, Boulvain, M. Maternal positioning to correct occiput posterior fetal position during the first stage of labour: a randomised controlled trial. International Journal of Obstetrics and Gynaecology. [Internet]. 2016; [consult 2016 Mar 3]. DOI: 0.111/1471-0528.13855.

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