

Midwives should support women to mobilize during labour

Abstract

This article analyses why midwives should encourage and support women to mobilize during labour and maintain upright positions during labour and childbirth. A systematic analysis of the literature regarding this issue will be constructed. An outline of the role of the midwife and why it is important that they encourage and support women to mobilize during labour and maintain upright positions is presented.

From analysis of the literature, it is evident that there is no universal definition of an upright position during labour and childbirth. To avoid confusion, the term upright will refer to the sitting position, with the woman constantly at an angle of 45 degrees or more, kneeling, squatting, on all-fours, and the standing position. Non-upright positions refer to recumbent, semi-recumbent, lithotomy, supine or the lateral position. Mobilizing refers to walking and moving freely.

Towards the end of pregnancy, changes in a woman's hormones cause relaxation of the ligaments and cartilage in her pelvic joints. This allows more movement during childbirth in the sacro-iliac joints and the pubic symphysis, resulting in slight changes in the shape and diameters of her pelvis (Russell, 1969; Michel et al, 2002; Simkin, 2003). These changes facilitate the passage of the baby through the pelvis (Simkin and Ancheta, 2005).

When a woman mobilizes during labour and adopts upright positions during labour and childbirth, these changes to the ligaments and cartilage in the pelvic joints are optimized (Simkin and Ancheta, 2005). Furthermore, the adoption of upright positions employs the effect of gravity to apply the presenting part to the cervix, improving the effectiveness of contractions in dilating the cervix. These affects will aid descent of the fetus through the birth canal. Thus, the woman's ability to birth her baby more effectively and without medical intervention is enhanced. Conversely, a lack of movement coupled with maintaining non-upright positions will reduce the available space within the woman's pelvis. Furthermore, it will not take advantage of the benefits of gravity, making the contractions less effective.

Many other adverse effects of a lack of movement coupled with maintaining a non-upright position have also been documented in the literature. These adverse effects will reduce the woman's ability to birth her baby without medical intervention.

Mobilizing and medical intervention

Early studies on childbirth evaluating the effect of mobilizing in the first stage of labour found that walking is associated with less frequent use of narcotic analgesia (Flynn et al, 1978; Albers et al, 1997). The reduced use of narcotics during childbirth has important implications, as the administration of narcotics is associated with an increased incidence of abnormal fetal heart rate patterns (Hill et al, 2003), which may lead to a cascade of intervention during childbirth, increased incidence of babies admitted to the neonatal unit and adverse neonatal neurological effects that may last for days, such as decreased alertness and impaired rooting and sucking reflexes, which affect the woman's ability to breastfeed (Sosa et al, 2004). There may also be an association between the fetus's exposure to narcotics during labour and adult drug abuse (Jacobson et al, 1990, Nyberg et al, 2000). Interventions to increase breastfeeding rates and reduce adult drug abuse also have substantial public health implications.

Operative delivery

Albers et al's (1997) and Flynn et al's (1978) studies also found a lower rate of operative delivery when women were encouraged to walk during the first stage of labour. Albers et al's (1997) controlled trial consisting of observational data, comparing 771 women who walked for a significant portion of the first stage of labour with 907 women who laboured in bed. Flynn et al's (1978) randomized prospective study consisted of 68 women. Half of these women walked during the first stage of labour and half laboured in bed in the recumbent position. This study also found that women who walked during the first stage of labour had a shorter first stage, the fetal heart rate patterns during labour were reassuring, the baby's apgar scores were higher and

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women had more effective uterine contractions. A study by Read et al (1981) also found such women had more effective uterine contractions.

Oxytocin

Read et al's (1981) study was a randomized controlled trial involving 14 women who were either encouraged to walk during the first stage of labour or confined to bed with the administration of oxytocin for labour augmentation. The study found that walking during the active first stage of labour was as effective, if not more so, than an intravenous infusion of oxytocin. This finding was also supported by Hemminki et al's (1985) study. However, the studies by Flynns et al (1978), Hemminki et al (1985) and Read et al (1981) were small randomized controlled trials, so the generalizability of the findings may be limited.

By contrast to the above studies, two larger randomized controlled trials by Bloom et al (1998) and Hemminki and Saarikoski (1983) found no benefits when women walked during the active first stage of labour compared with women labouring in bed. Hemminki and Saarikoski's (1983) study found no reduction in oxytocin use (to augmentate labour), instrumental delivery, or caesarean section and Bloom et al (1998) found no reduction in length of first stage of labour, use of oxytocin, analgesia, or instrumental or caesarean section delivery.

However, both studies were flawed. In Hemminki and Saarikoski's (1983) study, 315 women were encouraged to walk or sit during labour and 312 women received the usual care of lying on their side during labour and walking on request. Approximately half the women who were encouraged to walk did so during early labour and less than 10% chose to walk during the later part of dilatation. In Bloom et al's (1998) study, 536 women were encouraged to walk during labour and 531 received usual care, consisting of lying or sitting in bed during labour. Of the 536 women who were encouraged to walk, the mean walking time was 56 minutes, furthermore, 22% of these 536 women chose not to walk. Hence, these studies are not a true reflection of the effect of mobility and upright positions on labour outcomes.

From analysis of these studies regarding the effects of walking in the first stage of labour, it is evident that walking during this period has many beneficial effects on the birth outcome and on the woman's and her baby's wellbeing. At the very least, walking during the first stage of labour was not identified with any adverse

effects, which could not be said for use of narcotic analgesia or oxytocin.

When labour is augmented by oxytocin, the woman needs continuous fetal heart rate monitoring, which is associated with an increased risk of caesarean section and instrumental deliveries, all of which increase the morbidity of mother and baby (Alfrevic et al, 2006; National Institute for Health and Clinical Excellence (NICE), 2007). If the woman's membranes have not ruptured, she will need to have them artificially ruptured (ARM) before administration of the oxytocin infusion (NICE, 2007). She will also need to have a cannula inserted. ARM and the insertion of a cannula are painful, invasive procedures and using oxytocin to augment labour is also highly prescriptive. These interventions may increase a woman's risk of infection and labour may be more painful for her (Bricker and Lucas, 2000; Howarth and Botha, 2001; NICE, 2007; 2008; Brown et al, 2008).

Furthermore, continual electronic fetal monitoring and an intravenous infusion will reduce a woman's ability to mobilize (Garcia et al, 1985; Newburn and Singh, 2003; 2005). This is important, as Bloom et al (1998) concluded that women valued mobilizing in labour. They reported that 99% of the women who walked during their labour said they would choose to walk again (Bloom et al, 1998). Furthermore, it has been commented that mobilizing during labour may also distract the woman from her discomfort and may increase her sense of control during labour (Alber et al, 1997). Thus, aspects of care that increase rather than decrease a woman's ability to mobilize during labour will increase her satisfaction with her care.

Women's views

A questionnaire survey by Newburn and Singh (2005), on behalf of the National Childbirth Trust (NCT), was sent out in January 2005–April 2005 to women in the UK following the birth of their baby (it was also available on the NCT's website). Six hundred and seventy-six women responded to the questionnaire. Findings from this study reported that women valued being able to move freely during labour. Interestingly, women who reported that they were not able to move freely during labour had a greater risk of an emergency caesarean section than those women who were able to mobilize during labour (Newburn and Singh, 2005). This study was a follow-up of a previous survey conducted by Newburn and Singh (2003) on behalf of the NCT. Although the findings in both surveys

were similar, their 2005 study findings were more generalizable, as the questionnaires completed were from a broader and more representative range of women. Thus, Newburn and Singh (2003; 2005) and Bloom et al (1998) demonstrate that women value being able to mobilize during labour. Furthermore, Newburn and Singh's (2005) survey also provides more evidence that enabling a woman to mobilize during childbirth is an influential factor in assisting women to have a vaginal birth.

Effects of adopting upright positions in labour

Other studies (Simkin and O'Hara, 2002; Simkin and Bond, 2004; Lawrence et al, 2009) assessed the effects of mobilizing and posture during the first stage of labour. They compared upright positions in the first stage of labour with labouring in bed, adopting one or more non-upright positions.

Simkin and O'Hara (2002) conducted a systematic review of five non-pharmacological measures for pain relief during the first stage of labour. They assessed maternal mobility and positioning as one of these non-pharmacological measures. The overall findings of the review were that mobilizing and upright positions during the first stage of labour increased maternal comfort and might increase the progress of labour.

Simkin and Bond's (2004) systematic update regarding approaches for relieving labour pain and suffering further conclude that mobilizing and upright positions were more comfortable for women and their labours may be shorter. However, 13 of the 14 trials identified in this review were also included in Simkin and O'Hara's (2002) study, therefore, it is not surprising they had similar findings.

Lawrence et al's (2009) study consisted of a Cochrane review; these reviews are influential in providing evidence to changing practice, as they define best practice based on randomized controlled trials. Lawrence et al's (2009) review identified 21 randomized controlled trials that took place within a hospital setting, in a variety of countries between 1960–2007. In total, 3706 women were assigned to upright or non-upright positions during the first stage of labour; walking was identified as one of the upright positions in this study. All women were cared for in bed during the second and third stages of labour.

Lawrence et al (2009) identified that, overall, the first stage of labour was approximately one hour shorter for women who were allocated to upright positions as opposed to non-upright posi-

tions. Women who adopted upright positions were also less likely to have epidural analgesia. There was little evidence in this review to show that the positions adopted or walking during the first stage of labour had any effect on the duration of the second stage of labour, mode of delivery, interventions in labour, or on the wellbeing of mothers and babies.

However, what is surprising in the Lawrence et al (2009) review is that it found an increase in the epidural rate when women laboured in the recumbent position, but it did not find an increase in the incidence of instrumental deliveries. As the findings of an earlier study by Anim-Somuah et al (2005) concluded, epidural analgesia during childbirth is associated with an increased incidence of instrumental vaginal deliveries, which are associated with an increased risk of maternal and neonatal morbidity. Hence, if the epidural rate was found to be increased, there should be an associated increase in instrumental vaginal deliveries, resulting in an increased risk of maternal and neonatal morbidity.

Other studies such as De Jonge et al (2004) and Gupta et al (2004) have demonstrated beneficial effects of upright positions regarding the second stage of labour, such as shorter second stage of labour, fewer episiotomies and assisted births, less severe pain, they found bearing down easier and had fewer fetal heart rate abnormalities. This suggests that maintaining upright positions has maximum effect when continually adopted throughout labour and childbirth.

Both De Jonge et al (2004) and Gupta et al (2004) were meta analyses. De Jonge et al's (2004) analysis consisted of nine randomized controlled trials and one cohort study and involved 2843 women. The analysis by Gupta et al (2004) was a Cochrane review, consisting of 20 randomized controlled trials conducted between 1963 and 1999 and involving 6135 women.

It was also found in De Jonge et al's (2004) and Gupta et al's (2004) studies that women experienced an increase in blood loss greater than 500 mls and an increase in second degree tears. The former may have been owing to the more efficient collection of blood loss and the latter to a reduced number of episiotomies carried out when the woman adopts upright positions. These similar findings in De Jonge et al's (2004) and Gupta et al's (2004) meta analysis are not surprising, as many of the studies identified in them were the same. All nine of the randomized controlled trials identified in De Jonge et al's (2004) study were included in Gupta et al's (2004) analysis.

Perineal trauma

Other studies (Soong and Barnes, 2005; Terry et al, 2006) have found that upright birth positions reduce perineal trauma. This has important implications for the woman, as injury to the genital tract during childbirth can result in adverse health outcomes for the woman, for example, temporary pain and discomfort to severe pain, bleeding, dyspareunia and infection (Shorten et al, 2002).

Soong and Barnes (2005) conducted a quantitative study of 3756 women and found that women who birthed their babies in the semi-recumbent position had a higher incidence of perineal trauma that required suturing, whereas the all-fours position was associated with reduced perineal trauma. Terry et al's (2006) study, a non-randomized controlled trial, found that upright positions during labour and childbirth resulted in less perineal trauma and less vulva oedema than supine positions.

Left-lateral position

A multiple regression analysis of 2891 normal vaginal births by Shorten et al (2002) found a statistically significant reduction in perineal trauma when women adopted the left lateral position to give birth, rather than an upright position. Furthermore, this study found that women who gave birth in the squatting position experienced the most perineal trauma, and women who adopted other upright positions did not experience less perineal trauma than those who gave birth in the recumbent position. However, in Shorten et al's (2002) study, the majority of the women gave birth in non-upright positions (semi-recumbent $n=1619$; lateral $n=353$) and only 2.1% ($n=62$) gave birth in a squatting position. Hence, the unequal sample size reduces the reliability of the study's findings.

It is not possible to compare Shorten et al's (2002) findings regarding the benefits of the lateral position with Soong and Barnes' (2005) and Terry's (2006) research findings, as none of the women in their studies adopted the lateral position. However, Gupta et al's (2004) meta analysis included women who adopted the lateral position in the second stage of labour and found no benefits to the perineum. Thus, although Shorten et al's (2002) study provides some evidence that the left lateral position during childbirth protects the perineum, other studies do not support this finding, so Shorten et al's (2002) findings have limited value at present.

All-fours position

The benefits of women adopting the all-fours position for one hour in labour with women who did not

use this position has been highlighted in a study by Stremmer et al (2005). This study consisted of a randomized controlled trial, involving 147 women whose fetus was in the occipital-posterior position (OP). It compared women who adopted the all-fours position for one hour in labour with women who did not use this position. Stremmer et al (2005) found that this position significantly reduced back pain and that there was a trend towards fetal rotation to the occipital-anterior position (OA). This finding is valuable as the optimal position for the baby during labour and birth is the OA position. The OP position can be associated with more painful, longer and obstructed labours, and difficult deliveries (Hunter et al, 2007). These associated factors of the OP position will influence the mother's and her baby's ability to cope during labour and delivery, effecting their wellbeing.

A Cochrane Review by Hunter et al (2007) which analysed Stremmer et al's (2005) study and confirmed their findings regarding reducing back pain. However, it did not support Stremmer et al's (2007) comment regarding a trend towards fetal rotation to the OA position. Hunter et al (2007) recommended that larger trials were needed to analyse this.

Promoting normality

From the analysis of these research studies, it is evident that when women mobilize and maintain upright positions throughout labour and birth it increases normal birth and maternal satisfaction with the childbirth event. It will also reduce inter-



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Maintaining upright positions during labour and childbirth supports normal birth and enhances maternal satisfaction with the experience

women who adopted the all-fours position [had] significantly reduced back pain and ... there was a trend towards fetal rotation to the occipital-anterior position

ventions. Normal birth and reduced intervention rates are crucial as childbirth that does not involve medical intervention has substantial benefits for mother and baby. These benefits include faster rates of recovery postpartum, increased maternal self-esteem, improved maternal-infant attachment and enhanced adaptation of the baby to extrauterine life (Mercer and Skovgaard, 2004).

However, despite the advantages of women mobilizing and maintaining upright positions during childbirth, a recent survey (Commission of Healthcare Audit and Inspection, 2007), involving over 26 500 women who completed a postal questionnaire describing their experiences of maternity care in England during January and February 2007, found that 57% of women gave birth lying down or lying with their legs supported in stirrups, adopting a non-upright position. This is in spite of NICE (2007) recommending that this position should be discouraged, although the study did report that 61% of women felt they were able to move around and adopt positions that made them feel comfortable. The question must be asked how the other 39% felt about being restricted. Furthermore, Waldenstrom and Gottvall (1991) highlighted that the majority of women will choose to do what they think is expected of them, both culturally and socially, and that women are least likely to adopt positions that are unfamiliar to them. It would be interesting to know how many of the 61% of women did adopt positions that made them feel comfortable.

It is evident from the Commission of Healthcare Audit and Inspection (2007) report that more needs to be done to promote normal childbirth and support women to birth their babies while avoiding unnecessary intervention. What is worrying, but not surprising, is that midwives may not regard encouraging women to labour and give birth, adopting a non-upright position in a bed as intervening, as this position has clearly become an accepted part of normal intrapartum care.

Nevertheless, in the UK, care during child-

birth for women with normal pregnancies and births, is provided by midwives (Nursing and Midwifery Council (NMC), 2004). Women who are identified as having medical and obstetric complications are cared for by midwives in collaboration with medical staff. The midwives' role during childbirth is identified within the *Midwives Rules and Standards* (NMC, 2004). NICE (2007) also outlines what care women should receive during childbirth from the NHS and by whom. It is clear from analysing these documents that midwives are perceived as the experts in normal pregnancy, labour and postnatal period, that promoting normality is a fundamental aspect of midwifery care and that midwives should promote practices that encourage normality. Clearly, supporting women to mobilize and maintain upright positions during labour and childbirth is one such practice that is fundamental to promoting normal childbirth.

Conclusion

What is evident is that mobilizing during labour and maintaining upright positions during labour and childbirth enhances the woman's birth experience, and supports the normal physiology of birth. However, there is no one optimal labour and birth position for all women, as women are individuals and labour and childbirth is a dynamic event. Therefore, midwives need to encourage and support women in exploring positions that are optimal for them during labour and childbirth, and to inform women of practices that will affect their ability to mobilize and maintain upright positions.

Midwives should inform women of the many short- and long-term advantages of mobilizing during labour and adopting upright positions during labour and childbirth. Furthermore, midwives must highlight the adverse effects to women of labouring and giving birth in bed, adopting non-upright positions. This will enable women to make informed decisions regarding their care.

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Key points

- Mobilizing and upright positions during labour and birth increases physiological birth.
- Physiological birth has substantial benefits for mother and baby and also has substantial public health implications.
- Mobilizing and upright positions during labour and birth has no known adverse effects.
- Women's satisfaction with their birth experience is increased when they are able to move freely during labour and birth.
- Midwives should promote mobilizing during labour and upright positions during labour and birth, as promoting normal birth is a fundamental aspect of midwifery care.

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