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Maternal attitudes towards home birth and their effect on birth outcomes in Iceland: A prospective cohort study

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ABSTRACT

Objective: to examine the relationship between attitudes towards home birth and birth outcomes, and whether women's attitudes towards birth and intervention affected this relationship.
Design: a prospective cohort study.
Setting: the study was set in Iceland, a sparsely populated island with harsh terrain, 325,000 inhabitants, high fertility and home birth rates, and less than 5000 births a year.
Participants: a convenience sample of women who attended antenatal care in Icelandic health care centres, participated in the Childbirth and Health Study in 2009–2011, and expressed consistent attitudes towards home birth ($n=809$).
Findings: of the participants, 164 (20.3%) expressed positive attitudes towards choosing home birth and 645 (79.7%) expressed negative attitudes. Women who had a positive attitude towards home birth had significantly more positive attitudes towards birth and more negative attitudes towards intervention than did women who had a negative attitude towards home birth. Of the 340 self-reported low-risk women that answered questionnaires on birth outcomes, 78 (22.9%) had a positive attitude towards home birth and 262 (77.1%) had a negative attitude. Oxytocin augmentation (19.2% ($n=15$) versus 39.1% ($n=100$)), epidural analgesia (19.2% ($n=15$) versus 33.6% ($n=88$)), and neonatal intensive care unit admission rates (0.0% ($n=0$) versus 5.0% ($n=13$)) were significantly lower among women who had a positive attitude towards home birth. Women's attitudes towards birth and intervention affected the relationship between attitudes towards home birth and oxytocin augmentation or epidural analgesia.
Key conclusions and implications for practice: the beneficial effect of planned home birth on maternal outcome in Iceland may depend to some extent on women's attitudes towards birth and intervention. Efforts to de-stigmatise out-of-hospital birth and de-medicalize women's attitudes towards birth might increase women's use of health-appropriate birth services.

Introduction

The outcome of planned home births has increasingly been the subject of observational studies in recent years. Those studies have revealed lower rates of interventions such as oxytocin augmentation, epidural analgesia, and instrumental or caesarean births in planned home births, compared to planned hospital births (Lindgren et al., 2008; Hutton et al., 2009; Janssen et al., 2009; Kennare et al., 2010; Wax et al., 2010; Brocklehurst et al., 2011, Brocklehurst et al., 2011; Davis et al., 2011; Blix et al., 2012; Cheng et al., 2013; Homer et al., 2014; Halfdansdottir et al., 2015).

Maternal morbidity such as postpartum haemorrhage, episiotomy, or obstetric anal sphincter injury (OASI) has also been significantly less frequent in planned home births than planned hospital births (Lindgren et al., 2008; Hutton et al., 2009; Janssen

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et al., 2009; Kennare et al., 2010; Brocklehurst et al., 2011; Davis et al., 2011; Blix et al., 2012; Nove et al., 2012; de Jonge et al., 2013; Homer et al., 2014; Halfdansdottir et al., 2015). Rates of neonatal morbidity in planned home births such as low Apgar scores or admission to neonatal intensive care units (NICU) have been significantly lower than in planned hospital births in some countries like the Netherlands and Canada (Janssen et al., 2009; de Jonge et al., 2015), whereas neonatal morbidity and mortality has been significantly higher in other countries, like the United States and Australia (Kennare et al., 2010; Malloy, 2010; Wax et al., 2010; Chang and Macones, 2011; Cheng et al., 2013; Grunebaum et al., 2013, 2014). Researchers studying home birth have suggested that these inconsistencies may be due to variations in home birth services and study populations (Malloy, 2010; Wax et al., 2010; Chang and Macones, 2011; Cheng et al., 2013; de Jonge et al., 2015).

It has been suggested for some time that the attitudes of women selecting home birth are in some way different from the attitudes of women who select hospital births (Dowswell et al., 2001; Lindgren et al., 2008), and that the psychological factors behind their selection could influence the outcome of planned home birth (Mehl-Madrona and Madrona, 1997; Hutton et al., 2009). The notion that attitudes can affect birth outcomes has since been confirmed in a study that significantly related an increase in English women's positive attitudes towards intervention to higher rates of instrumental or caesarean births, statistically mediated by the use of epidural analgesia (Green and Baston, 2007). Similarly, Swedish and Australian women who saw childbirth as a natural event, valued control, and had low levels of childbirth fear were found to be more likely to have vaginal birth, whereas women with opposite attitudes had higher rates of elective caesarean birth (Haines et al., 2012). Two studies on Dutch women's attitudes towards place of birth, manifested in women's preferred place of birth at the onset of pregnancy rather than actual place of birth, have revealed lower rates of intervention such as instrumental or caesarean births among women who preferred home birth with a midwife compared to those preferring hospital birth (van Der Hulst et al., 2004; van Haaren-Ten Haken et al., 2015).

Attitudes of women preferring or choosing home or hospital birth have been studied in recent years, revealing substantial differences between the two groups. Women who prefer home birth have positive expectations about the approaching birth (Wiegers et al., 1998; Hildingsson et al., 2003) and believe in the body's ability to give birth (Regan and McElroy, 2013). They see birth as a natural process that can be enhanced by their choice in setting (Fordham, 1997; Murray-Davis et al., 2014). Women who choose home birth find safety in trusting the natural, uninterrupted processes of birth, want to avoid using technology and interventions that they believe increase rather than decrease risk (van Der Hulst et al., 2004; Miller and Shriver, 2012; Regan and McElroy, 2013; Murray-Davis et al., 2014), and prefer avoiding pharmacological pain relief in labour (Hildingsson et al., 2003).

Women who prefer home birth have low expectations of hospital care in labour (Fordham, 1997; Wiegers et al., 1998). They highly value receiving continuous care from a midwife (Longworth et al., 2001; Regan and McElroy, 2013; van Haaren-ten Haken et al., 2014) and the support of the birth partners of their choice (Hildingsson et al., 2003; Regan and McElroy, 2013). Women who choose home birth see medical authority as oppressive, would like to make decisions regarding the care provided to them and their infant (Longworth et al., 2001; Miller and Shriver, 2012; van Haaren-Ten Haken et al., 2012; Regan and McElroy, 2013), and relate those values of control to the home setting (Fordham, 1997). Multiparous women who prefer home birth may have had previous home births and have generally had positive previous birth experiences, but may have had a negative previous experience in hospital (Wiegers et al., 1998). They rarely see themselves at risk for instrumental birth (Wiegers et al., 1998; van Der Hulst et al., 2004).

Women choosing home birth value the privacy and familiarity of a suitable home or home-like setting (Wiegers et al., 1998; van Haaren-Ten Haken et al., 2012, 2014). They do not object to being transported in labour if needed (van Haaren-ten Haken et al., 2014), and long distances from hospital may even be a factor supporting their preference for home birth (Wiegers et al., 1998).

Women who prefer hospital birth have a tendency to see birth as inherently dangerous and not to trust the body's ability to birth without assistance (Miller and Shriver, 2012; Regan and McElroy, 2013). They find safety in the availability of technology and hospital medical staff, and perceive home birth as risky (Miller and Shriver, 2012; van Haaren-Ten Haken et al., 2012; Regan and McElroy, 2013; Murray-Davis et al., 2014). Women who prefer hospital birth also prefer to have access to pain medication in labour (Longworth et al., 2001; Murray-Davis et al., 2014).

Women who choose hospital birth expect good hospital services. They take responsibility and control by choosing to trust medical authority (Miller and Shriver, 2012). When deciding on hospital birth, these women are motivated by their worries about the mess of a home birth (Murray-Davis et al., 2014). Nulliparous women who choose hospital birth are prone to health-related worries and are motivated by their reluctance to be transferred in case of emergency (van Haaren-Ten Haken et al., 2012). The multiparous women in this group have either had a positive previous hospital birth experience or a previous complicated birth (Murray-Davis et al., 2014).

The authors of recent studies on home birth outcomes in two Nordic countries, Sweden and Iceland, have suggested that the link between planned place of birth and outcome may in part be due to differences in women's attitudes (Lindgren et al., 2008; Halfdansdottir et al., 2015). Such confounding could not be adjusted for in an Icelandic home birth study that was based on information obtained from maternity notes. The study, which was a retrospective cohort study comparing the outcome of planned home and hospital birth in 2005–2009, revealed that the rates of oxytocin augmentation, epidural analgesia, and postpartum haemorrhage were significantly lower in planned home birth than in planned hospital birth, and that these rates were interrelated (Halfdansdottir et al., 2015). A content analysis on home birth discussion in Icelandic media has indicated that women-centred care, safety, and choice are prominent topics among the Icelandic people (Gottfredsdottir et al., 2015).

The purpose of this study was to examine the relationship between attitudes towards home birth and birth outcomes, and whether women's attitudes towards birth and intervention affected this relationship. The aim of the study was to answer the following research questions (Fig. 1):

1. Do women who have a positive attitude towards home birth have different attitudes towards birth and intervention than women who have a negative attitude?
2. Do women who have a positive attitude towards home birth have different birth outcomes than women who have a negative attitude?
3. Is the relationship between attitudes towards home birth and birth outcomes affected by women's attitudes towards birth and intervention?

Methods

This prospective cohort study on birth outcomes and women's attitudes towards birth, intervention, and home birth uses

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