



Variation in intrapartum referral rates in primary midwifery care in the Netherlands: A discrete choice experiment



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ABSTRACT

Objective: in midwife-led care models of maternity care, midwives are responsible for intrapartum referrals to the obstetrician or obstetric unit, in order to give their clients access to secondary obstetric care. This study explores the influence of risk perception, policy on routine labour management, and other midwife related factors on intrapartum referral decisions of Dutch midwives.

Design: a questionnaire was used, in which a referral decision was asked in 14 early labour scenarios (Discrete Choice Experiment or DCE). The scenarios varied in woman characteristics (BMI, gestational age, the preferred birth location, adequate support by a partner, language problems and coping) and in clinical labour characteristics (cervical dilatation, estimated head-to-cervix pressure, and descent of the head).

Setting: primary care midwives in the Netherlands.

Participants: a systematic random selection of 243 practicing primary care midwives. The response rate was 48 per cent (117/243).

Measurements: the Impact Factor of the characteristics in the DCE was calculated using a conjoint analysis. The number of intrapartum referrals to secondary obstetric care in the 14 scenarios of the DCE was calculated as the individual referral score. Risk perception was assessed by respondents' estimates of the probability of eight birth outcomes. The associations between midwives' policy on management of physiological labour, personal characteristics, workload in the practice, number of midwives in the practice, and referral score were explored.

Findings: the estimated head-to-cervix pressure and descent of the head had the largest impact on referral decisions in the DCE. The median referral score was five (range 0–14). Estimates of probability on birth outcomes were predominantly overestimating actual risks. Factors significantly associated with a high referral score were: a low estimated probability of a spontaneous vaginal birth ($p=0.007$), adhering to the active management policy Proactive Support of Labour (PSOL) ($p=0.047$), and a practice situated in a rural area or small city ($p=0.016$).

Key conclusions: there is considerable variation in referral decisions among midwives that cannot be explained by woman characteristics or clinical factors in early labour. A realistic perception of the possibility of a spontaneous vaginal birth and adhering to expectant management can contribute to the prevention of unwarranted medicalisation of physiological childbirth.

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Implications for practice: awareness of variation in referrals and the associated midwife-related factors can stimulate midwives to reflect on their referral behavior. To diminish unwarranted variation, high quality research on the optimal management of a physiological first stage of labour should be performed.

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Introduction

Background

In midwife-led care models of maternity care, midwives are the primary caregiver during childbirth for healthy women with uncomplicated term pregnancies. In these models, the attending midwife is responsible for the decision to refer her client to the obstetrician or obstetric unit, in order to give her access to secondary obstetric care. If childbirth is planned at home or in a birth centre or unit without obstetric, anaesthetic and neonatal services, this referral implies also a transfer to a secondary obstetric care unit. Primary midwifery care in the Netherlands is such a model. In the Netherlands, regardless whether a home birth or a hospital birth is planned, the primary care midwife needs to refer her client to an obstetrician to give her access to augmentation by oxytocin, pharmaceutical pain relief by opioids or epidural anaesthesia, or other obstetrical interventions. A primary care midwife is not authorised for these interventions.

The number of referred clients in Dutch primary midwifery care provides information about the level of medical assistance or surveillance that midwives seek for their clients that were considered at low risk of complications at the onset of labour and therefore eligible to give birth in a non-medical setting. This information helps to reflect on the level of medicalisation of childbirth for healthy women in maternity care systems.

Variation in referral rates

Recent cohort studies from various countries and settings (Amelink-Verburg et al., 2008; Lindgren et al., 2008; Hutton et al., 2009; Overgaard et al., 2011; Patterson et al., 2011; Rowe et al., 2012; Gaudineau et al., 2013; Offerhaus et al., 2013b; Stapleton et al., 2013; Cheyney et al., 2014; Geerts et al., 2014) and one systematic review (Walsh and Downe, 2004) report on intrapartum referrals of women who were considered as low risk at the onset of labour. The referral rate in these studies ranged from 11 per cent in the US (Cheyney et al., 2014) to 38 per cent in the Netherlands (Offerhaus et al., 2013b). In all studies referrals were mainly for non-urgent reasons such as failure to progress in the first stage, and nulliparous women were referred more often.

The lowest referral rates were found in studies performed in countries where planning an out of hospital birth is an unusual or even controversial choice for women (Johnson and Daviss, 2005; Lindgren et al., 2008; Stapleton et al., 2013; Cheyney et al., 2014). Women included in these studies are likely to have a strong preference for giving birth out the hospital, and the threshold for referral and transfer to the hospital is probably high. This might also be the case for women in rural or remote areas in developed countries who choose to give birth in a local birth centre instead of a distant hospital (Overgaard et al., 2011; Patterson et al., 2011).

In the UK Birth Place Study referrals to an obstetric unit were less frequent from home and freestanding midwifery units (FMUs), compared to alongside midwifery units (AMUs). Differences in admission and transfer thresholds between these settings may contribute to this finding. There was also a wide range in referrals within comparable birth place settings. Referral rates ranged from 10 to 50 per cent in AMUs, and from zero to 36 per cent in FMUs. The authors suggest that these wide ranges may be explained by differences in thresholds for intervention in non-urgent situations

such as failure to progress and meconium stained liquor (Rowe et al., 2012). In primary midwifery care in the Netherlands mean referral rates are lower for planned home births compared to planned hospital births (Offerhaus et al., 2013b; Geerts et al., 2014). The planned home birth group had a more favourable socio-demographic profile in both studies, which may have contributed to this difference in mean referral rates.

Variation between primary midwifery practices in the Netherlands

Variation is also observed between primary care practices in the Netherlands. Practice quality reports, comparing midwifery practice results with national statistics based on the National Perinatal database, describe a range in intrapartum referral rates from 17 to 35 per cent in 2008 (PRN, 2011). This variation in referral rates can partly be attributed to differences between midwifery practices in client characteristics such as parity, maternal age, ethnicity, and preferences for home birth. However, these quality reports describe that variation is still considerable after correction for these factors. Clients in midwifery practices may also vary in other aspects that are not registered in the National Perinatal database. For example, overweight and obesity, increasingly present among pregnant women, can also contribute to the variation.

The organisational context in which midwifery practices operate may also play a role. For instance, the permanent availability of epidural anaesthesia for labouring women has recently been recommended in a national guideline and is being introduced in the Netherlands (CBO, 2008). The use of pharmacological pain relief during labour is increasing (Christiaens et al., 2013). Women who want to use epidural anaesthesia or other pharmacological pain relief during labour need to be referred to secondary obstetric care. The availability of epidural anaesthesia can vary regionally, which leads to variation in referral rates from practice to practice.

Another factor might be variation in routine management during the first stage of labour in midwifery practices. Internationally, there is no clear evidence for several aspects of routine management of the first stage of labour (Bugg et al., 2011; Brown et al., 2013; Smyth et al., 2013; Wei et al., 2013). In the Netherlands this has resulted in two competing policies. The first policy is the guideline of the national midwifery association KNOV. This guideline recommends expectant management, based on the WHO partogram (WHO, 1985; Offerhaus et al., 2006). The other policy, Proactive Support of Labour (PSOL), is an adapted version of active management of labour that was first introduced by O'Driscoll in 1973 (O'Driscoll et al., 1973; Reuwer et al., 2009). This policy is not an official guideline, but has been developed by some Dutch obstetricians and promoted as a complete package of care, aimed at reducing caesarean section rates (Reuwer et al., 2009). One element of this package of care is a strict definition of adequate progress in labour, which is cervical dilatation of one cm. per hour. Early intervention, using amniotomy and augmentation with oxytocin, is recommended as soon as cervical dilatation progresses slower than one cm. per hour. It is unknown to what extent these policies are used routinely by primary care midwifery practices.

Several studies suggest that midwives themselves also contribute to variation in intervention and referral rates. Mead and Kornbrot (2004), for instance, observed that midwives' perceptions of risk were associated with intervention rates in maternity

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