Midwifery 27 (2011) 104–111

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/midw

The Scottish Trial of Refer or Keep (the STORK study): midwives' intrapartum decision making

Maggie Styles, MPhil, BSc, RM (Lecturer in Midwifery)[a,*], Helen Cheyne, PhD (Programme Director)[b], Ronan O'Carroll, BSc, MPhil, PhD (Professor in Psychology)[c], Fiona Greig, MSc, BSc, RGN, RM (Consultant Midwife & Supervisor of Midwives NHS Tayside)[d], Fiona Dagge-Bell, RN, RM (Professional Officer)[e], Catherine Niven, PhD (Director)[b]

[a] *Department of Nursing & Midwifery, University of Stirling, Stirling FK9 4LA, UK*
[b] *NMAHP Research Unit, University of Stirling, Stirling FK9 4LA, UK*
[c] *Department of Psychology, University of Stirling, Stirling FK9 4LA, UK*
[d] *Perth Midwife Unit, Perth Royal Infirmary, Perth PH11NX, UK*
[e] *Maternal & Child Health, NHS Quality Improvement Scotland, Edinburgh EH7 5EA, UK*

ARTICLE INFO

Article history:
Received 25 May 2009
Received in revised form
23 November 2009
Accepted 6 December 2009

Keywords:
Intrapartum
Risk/risk perception
Decision making
Midwifery
Personality

ABSTRACT

Objectives: to explore midwives' intrapartum referral decisions in relation to their dispositional attitude towards risk.
Design: a web-based correlation study examined the association between midwife's personality (personal risk tendency), place of work (location), years of experience and the timing of their decisions to make referrals (referral score) in a series of fictitious case scenarios (vignettes).
Participants: 102 midwives providing labour care in both consultant-led units (CLU) and community maternity units (CMU) from four Scottish health board areas.
Analysis: a correlational analysis was carried out to test the association between total risk scores and midwives' referral scores. Between-group comparisons were also conducted for experienced vs inexperienced midwives, midwives practising in CLU vs CMU settings and between the four health board areas.
Findings: despite being presented with identical information in the vignettes, midwives made a wide range of referral decisions. There was no association between referral scores and measures of risk, personality or years of experience. No statistically significant difference between the referral scores of midwives working in CLUs or CMUs was observed. However, a statistically significant difference did emerge between the four health board areas, with midwives from one area making referrals at a significantly earlier stage. The maternity services in this area had experienced several high profile adverse events prior to this study; this may have influenced their referral behaviour (the availability heuristic), in terms of making more cautious decisions.
Key conclusions: there was no evidence that variability in the range of referral decisions was due to personality factors, risk propensity, experience or whether the midwife worked in a CLU or CMU. Local factors such as recent adverse events may significantly influence subsequent referral behaviour. Further research is required to identify why the midwives showed so much unexplained variability in their responses to the vignettes.

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Introduction

Labour and childbirth have typically been regarded as the periods of greatest risk to the mother and infant, with a major concern being the risk of perinatal death or the birth of an asphyxiated infant. A series of government reports throughout the last century culminated in the recommendation for 100% hospital confinement due to the perceived risks of childbirth (Tew, 1979). Much of the care in labour is directed at detecting fetal distress, as well as observing the progress of labour, with subsequent management and/or referral; therefore, midwives must be able to identify when a deviation from normal occurs in order to take appropriate action and make timely referrals. In Scotland, a referral can simply mean a transfer of care to an obstetrician who

* Corresponding author.
E-mail address: maggie.styles@stir.ac.uk (M. Styles).

0266-6138/$ - see front matter © 2009 Elsevier Ltd. All rights reserved.
doi:10.1016/j.midw.2009.12.003

is on site, but for many women in labour, this referral can also mean a transfer to another maternity unit due to the country's geography.

There is an increasing expectation of the public that, as medical science becomes ever more sophisticated, most perinatal deaths can be prevented (Johanson et al., 2002). With this increase in public expectation has come an increase in medical negligence claims against the National Health Service (NHS); the fear of which is believed to be a major driver of midwifery and obstetric practice (NHS Litigation Authority, 2008). In turn, this fear of litigation has led to a rising level of intervention in labour, even in women whose pregnancy and labour are considered 'normal' (Bassett et al., 2000). For example, in Scotland, the induction of labour rate is currently around 34% in some health board areas, with a national average rate of 22% (ISD, 2009). In 2008, 15.2% of women underwent an emergency caesarean section compared with 8.9% in 1990 (ISD, 2009). Similarly, there has been an increase in elective caesarean section rates from 5.3% in 1990 to 10.7% in 2008, as well as an increase in ventouse delivery from 1.2% to 3.5% over the same period. Figures from the Royal College of Midwives detail the rates of normal birth, with no intervention, as 47% in England, 38% in Scotland and 39% in Northern Ireland (RCM, 2007). However, despite the rising rate of litigation and apparent defensive practice, the RCM (RCM, 2007) states that the health and safety of women and their infants has not improved, and that the incidence of cerebral palsy as a result of intrauterine hypoxia remains at 2–3 per 1000 births.

A 'cascade of intervention' has been described, where one intervention in a labouring woman leads to another and so on (Mold and Stein, 1986; Hundley et al., 1994). It is therefore clear that the first judgement made by a midwife to intervene in labour or to make a referral is of key importance.

Judgement and decision making

Judgements and decisions made by midwives can positively or adversely affect the well-being of women and their infants. However, currently, there is little published research on the way in which midwives make these judgements and decisions during intrapartum care; in particular, their judgement and decisions about the need to refer to medical staff for support or intervention and what factors influence these decisions. Although guidelines which identify the parameters of normal labour are readily available (Scottish Executive, 2001), as are those which define abnormality and recommend appropriate action (RCOG, 2001), the process by which a midwife judges that a woman's labour is moving from normal to abnormal is unclear.

Sox et al. (1988, p. 17) state that clinical decisions have been described as 'the art of making decisions without adequate information'. It has been suggested that in these situations, health professionals may rely upon intuitive forms of judgement based on heuristics – rapid forms of cognitive reasoning or mental shortcuts/rules of thumb – to assist in their clinical decision making, rather than slower more analytical forms of judgement (Kahneman et al., 1982; Sox et al., 1988; Cioffi and Markham, 1996; Cioffi, 1997, 2000). It has been proposed that factors which influence decision making include experience (Buckingham and Adams, 2000), preferences of the individual (Raynor and Marshall, 2005) and characteristics of the judgement task (Hamm, 1988).

Risk

Decision making and risk are inextricably linked; perception of risk influences judgements and decisions while, if inappropriate decisions are made, there is a risk of a poor outcome (Raynor and Marshall, 2005). It is also possible that the way in which health professionals perceive risk may explain some of the variation in midwives' decision making and referral behaviour.

Studies have shown that people are not good at estimating probability with regards to risk and that they tend to inflate the likelihood of rare events (Hastie and Dawes, 2001). Although obstetric emergencies such as post partum haemorrhage and shoulder dystocia occur rarely, they may be perceived as more or less likely depending on the personal experience or attitude of the midwife. For example, a newly qualified midwife working in a small maternity unit in Scotland with 400 annual births may fear the occurrence of severe post partum haemorrhage despite the risk of such an event being less than 10 per 1000 births (SPCERH, 2001).

Research has also shown that people vary in their risk-taking preferences and attitude towards risk (MacCrimmon and Wehrung, 1990; Weber and Milliman, 1997; Slovic et al., 2005; Soane and Chmiel, 2005). Although limited, risk research in clinical settings does suggest that health professionals' attitudes towards risk can lead to significant variations in the way that decisions regarding patient care are made. For example, Pearson et al. (1995) examined the relationship between one particular risk-taking measure and physicians' decisions about whether or not to admit patients presenting at hospital with acute chest pain. They found that physicians' risk propensity correlated significantly with admission rates, and that the risk-seeking physicians admitted significantly fewer patients at low, medium and high risk of myocardial infarction than the low-risk-seeking physicians. It is therefore possible that midwives' judgements and decision making during the care of a woman in labour will be influenced by midwives' general attitudes to risk, i.e. whether they are dispositionally risk averse or risk takers. Would midwives who perceive the world as a less risky place refer later than those who perceive the world as a more risky place? A better understanding of the attitudes and behaviour of midwives in relation to decision making and risk during the intrapartum period may diminish the likelihood of misjudgements being made.

Aim

The Scottish Trial of Refer or Keep (STORK) aimed to examine whether midwives' decision making during the intrapartum period was affected by midwives' attitudes towards risk; specifically, whether those midwives scoring highly on risk propensity would delay referring/transferring a woman in labour, compared with those who have a lower propensity for risk. A secondary aim of the study was to explore whether years of clinical experience or location of practice (urban or rural) had an effect on midwives' decisions to refer. The following three hypotheses were made regarding general risk propensity and decision-making behaviours of the participating midwives:

1. Midwives will vary in their general risk propensity, attitudes towards risk and personality traits; as assessed by scores on a questionnaire developed to measure risk propensity, attitudes towards risk and personality.
2. Midwives' risk propensity scores will be related to the timing of their decisions to seek medical assistance or transfer women to medical care during labour (transfer decisions expressed as referral score); high risk propensity will be associated with late (high) referral scores.
3. 'Referral/transfer' decisions will be related to the experience of the midwife and the type of maternity unit in which she practices.

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