Structured Abstract

Deliberate acquisition of competence in physiological breech birth: a grounded theory study

Problem: Research suggests that the skill and experience of the attendant significantly affect the outcomes of vaginal breech births, yet practitioner experience levels are minimal within many contemporary maternity care systems.

Background: Due to minimal experience and cultural resistance, few practitioners offer vaginal breech birth, and many practice guidelines and training programmes recommend delivery techniques requiring supine maternal position. Fewer practitioners have skills to support physiological breech birth, involving active maternal movement and choice of birthing position, including upright postures such as kneeling, standing, squatting, or on a birth stool. How professionals learn complex skills contrary to those taught in their local practice settings is unclear.

Question: How do professionals develop competence and expertise in physiological breech birth?

Methods: Nine midwives and five obstetricians with experience facilitating upright physiological breech births participated in semi-structured interviews. Data were analysed iteratively using constructivist grounded theory methods to develop an empirical theory of physiological breech skill acquisition.

Results: Among the participants in this research, the deliberate acquisition of competence in physiological breech birth included stages of affinity with physiological birth, critical awareness,

intention, identity and responsibility. Expert practitioners operating across local and national boundaries guided less experienced practitioners.

Discussion: The results depict a specialist learning model which could be formalised in sympathetic training programmes, and evaluated. It may also be relevant to developing competence in other specialist/expert roles and innovative practices.

Conclusion: Deliberate development of local communities of practice may support professionals to acquire elusive breech skills in a sustainable way.

Keywords

breech presentation, clinical competence, physiological birth, sustainable models of care, constructivist grounded theory, communities of practice

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Statement of Significance

Problem

Although the skill and experience of the attendant significantly affect outcomes of vaginal breech births, experience levels are minimal within many contemporary maternity care systems.

What is Already Known

Most mainstream practices recommend supine delivery or caesarean section for breech presentation at term. Some professionals have proposed understanding physiological breech birth as a variation of normal, and advocate the use of upright maternal birthing position. How practitioners develop competence in non-standard practices is unknown.

What this Paper Adds

This paper offers a learning model through which practitioners could be supported to develop skill and expertise in physiological breech birth.

1. Introduction

Approximately 1:25 women pregnant at term will carry a fetus presenting breech, bottom- or feet-first.[1] Although debates about the safety of vaginal breech birth compared to elective caesarean section have run for decades,[2] research and advocacy literature indicates that there is a demand for vaginal breech birth,[3,4] that women have difficulty accessing this service,[5,6] and that providers experience cultural resistance when attempting to facilitate breech births.[7,8] Some experienced midwives and obstetricians have advocated a change towards innovative, physiologically compatible practices for vaginal breech birth,[8–10] commonly involving upright maternal birthing positions, such as kneeling, standing, squatting, or sitting on a birth stool.

Recent research has suggested that the safety of physiological breech birth is comparable to methods involving supine maternal birthing positions, and it may afford some maternal benefits.[11,12] But implementing the option of physiological breech birth requires professionals to learn complex skills not readily available or supported within their local practice settings, with minimal opportunity to practice under the guidance of experienced mentors.

In a large randomised controlled trial,[13] the attendance of "a clinician who considers him or herself to be skilled and experienced at vaginal breech delivery, with confirmation by the individual's Head of Department" (p. 742) reduced the risk of adverse perinatal outcome at breech births to a 0.30 odds ratio compared to births where a clinician meeting this definition was not present (p=.004). Yet studies from around the world indicate that obstetric training programmes do not necessarily provide new consultants with the experience and confidence to support vaginal breech births.[14–18] A recent systematic review[19] reported no evidence that current training programmes improve maternal and/or neonatal outcomes. The review also suggested teaching breech skills as part of an obstetric emergencies training programme may reduce the likelihood of actually attending a breech birth in practice. The aim of this study was to explore how professionals acquire physiological breech experience and skill over the courses of their careers, in order to develop an empirical model which might explain and/or predict how clinicians move towards physiological breech birth competence.

2. Participants, Ethics and Methods

2.1 Research design

This study followed a constructivist grounded theory methodology.[20] Grounded theory is ideally suited to exploring processes and new understandings of social interaction, grounded in

empirical data, and expressed in the form of a theory which can be tested further.[21] A constructivist approach acknowledges the inevitable influence of personal experience and social network activity in the co-construction of shared realities, and provides a reflexive framework to maintain awareness of these influences throughout the research process.[22] The research team included a clinically active midwife, a Senior Lecturer in midwifery, and a Professor of Educational Development who is a nurse. The first author had qualitative research experience and breech experience at a level similar to the participants. The second and third authors, who had previously conducted grounded theory studies, provided methodological familiarity and professional distance from breech practice, which balanced reflexive discussions. Ethical approval was obtained (City, University of London, SHSREC Ref: PhD/15-16/06), and all participants gave consent to participate via an on-line form.

2.2 Sampling and Participants

This research sought to conduct in-depth interviews with midwives and obstetricians who had attended between 3-20 upright breech births. This range was chosen to capture the experiences of professionals who are still in the process of acquiring competence and proficiency.[23] According to Benner,[24] professionals in earlier stages of developing competence and proficiency can be expected to engage in more conscious and deliberate planning and reflection, potentially revealing more data about the learning process, than professionals who have reached the level of expertise, wherein analytic processes have been incorporated into more intuitive grasp of complex situations.

Recruitment involved purposive, network, and social media sampling.[23] Although ability to participate in an interview in English was required, recruitment was international. Information about the research and the researcher (first author) was sent via e-mail to practitioners whose

involvement with breech birth was publicly known, eg. through publications or conference activities. Those responding to an expression of interest were also invited to nominate experienced colleagues, who were each sent information about the research. A call for expressions of interest was also posted on social media sites related to breech birth, with permission of the moderators. This process resulted in 52 expressions of interest from professionals who indicated they had the desired range of experience for this study, and 32 were invited to participate [Figure 1]. If a potential participant did not respond to a request to schedule an interview, the next suitable participant was approached, until saturation was achieved.[25] Participants were selected to represent a heterogeneous range of experience levels, geographical areas and both the midwifery and obstetric professions, in order to distill common elements resonant across diversity through the constant comparative method used in grounded theory research. All participants gave consent via an on-line form. Recruitment stopped when saturation was reached, as described below.[25]

A total of 14 professionals were interviewed, including nine midwives and five obstetricians, working in Australia, Brazil, Canada, the Netherlands, New Zealand, the Philippines, the United Kingdom, and the United States. All but one of the midwives described attending breech births in both home and hospital settings. Five midwives and three obstetricians had worked in multiple geographical locations, including the developing world. Some of the participants, especially obstetricians, had significantly more experience with vaginal breech births where the woman births in a supine or lithotomy position but were beginning to change their practice to include upright positions. Three participants had attended over 20 upright breech births by the time the interview took place. The experience level among those interviewed ultimately ranged from five breech births to approximately 30 upright breech births, and this range of experience provided sufficient comparative insight to meet the objectives of this study.

Eleven of the professionals who expressed an interest in participating were professionally acquainted with the researcher conducting the interviews, through conferences and other networking activities. The potential for bias in sampling was recognised, and the first nine interviews were conducted with participants with whom the researcher had little or no previous contact. However, in the final interviews, participants were theoretically sampled in order to achieve saturation of the emerging categories; this included one participant whose background experience was known to the researcher and particularly relevant to areas requiring deeper exploration at this stage.

2.3 Data collection

Individual in-depth interviews were conducted by the first author with all 14 participants, using a semi-structured interview schedule, below.

Semi-structured interview schedule(s): ** = added/modified in second round of interviews*

How did you gain experience with upright breech birth?

Please describe some/one* of your significant learning experiences.

* Have you had any difficult breech births? Please describe what happened.

* Have you ever experienced a head entrapment?

* Do you consider yourself skilled and experienced in breech birth? Why?

What does 'upright breech expertise' mean to you?

The first nine interviews took place between June and September 2014, and the final five took place between December 2015 and February 2016. Interviews ranged in length from twenty to ninety minutes; one interview was cut short due to clinical activity, with some follow-up

exchange via e-mail. Five interviews were done via telephone (audio recording), eight via Skype (audio-visual), and one in person (audio). Consent was verbally confirmed prior to the start of the interview. Notes were made during the interviews. All were recorded and transcribed by the first author, and a transcript was returned to the participant as a courtesy where requested. Only one participant came back with a clarification, correcting the initials of a colleague mentioned in a narrative. Anonymity was maintained with pseudonyms, and data were stored on a password-protected, encrypted laptop and networked university drive, in line with the ethics approvals obtained.

2.4 Data analysis

Data analysis was facilitated by QSR International's NVivo 10 for Mac software (version 11), which provided flexibility to sort, consider, rearrange, and recode as required throughout the analytic process.[29] Analysis began following transcription of the first interview and continued in an iterative fashion throughout the conduct of the research.[26] Interviews were first coded line-by-line by the first author, using action-oriented descriptors,[27] and over 300 initial codes were identified. As connections and resonances between the codes became apparent, related codes were grouped and arranged into a coding tree in order to focus the analysis. Memos were created and linked to significant codes, chronicling the abductive reasoning behind the groupings,[27] and identifying gaps in the data. Tentative analytic categories were built up through this process, and earlier interviews were continually revisited to interrogate the emerging categories further. Following the first nine interviews, an initial framework was developed, which organised the emerging categories into stages. The interview schedule was revised, driven by the emerging theory, and a further five interviews were then conducted using a modified interview schedule. At this point, theoretical sampling of participants with minimal and maximal experience levels within the identified range allowed for testing and saturation of the categories,

particularly relating to the trajectory of competence development through stages as experience increased.

Saturation was judged to have occurred when theoretical categories were sufficiently dense and fully resonant across the diverse sample of participants, with no further insights or dimensions emerging through further analysis.[25] Saturation was also observed objectively, by recording the diminishing number coding and category changes during analysis of the later interviews, as they gradually ceased to reveal new properties within the categories under consideration.[28]

2.5 Trustworthiness

We employed a number of verification strategies throughout the research, including an audit trail, reflexive discussions, member checking, and network testing. Throughout the research, the team met monthly to review coding activity, discuss the emerging analysis, and resolve inconsistencies. The audit of the iterative decision-making process was maintained through memos, including snapshots of coding trees as emerging categories were built up into theoretical categories, and changes to the tentative theoretical framework. Reflexive awareness of network influences and personal experience was facilitated through memo writing and team discussion.[22]

In order to check for resonance and recognisability, each of the later five interviews ended by sharing a brief summary of the emerging theoretical framework with the participant at the conclusion of the interview. This activity functioned as a form of member checking[30] and enabled reciprocal shaping of the theoretical framework in line with constructivist methodology. [31] Throughout the analytic process, the emerging theory was also shared informally with other professionals in the first author's international network, and formally at the 11th Normal Labour

and Birth Conference in Sydney, Australia, in October 2016. Peer scrutiny and feedback in the early stages of analysis helped shed light on nuances which had not previously been noticed within the data, and later reassured us of the credibility of the results,[32] as fewer nuances emerged within and outside of the interviews. Public engagement also prompted consideration of the practical implications and transferability of the model.[33]

3. Results

Analysis of participants' narratives indicated that these professionals engaged in a process of deliberate acquisition of competence in physiological breech birth, involving five iterative stages: 1) affinity with physiological birth, 2) critical awareness, 3) intention, 4) identity and 5) responsibility. Figure 2 depicts these stages as spheres which grow as experience increases, and overlap to illustrate the recursive nature of the trajectory. **Key elements** of each stage are listed in a box alongside each stage, and highlighted in bold in the text below. *Participant quotes* are in italics. Any names used are pseudonyms.

3.1: Affinity with physiological birth

The midwives and obstetricians who participated in this research shared an affinity with physiological birth. This stemmed in some cases from personal predispositions, in others from early exposure to mentors and practice settings oriented towards physiological birth, although both influences appeared to enhance the other. *My own philosophy has always been very pro normal birth. Even in cephalic births, I don't do a lot of interventions. (OB4)* The obstetricians particularly reported training in settings where vaginal breech births were perceived as *a normal thing* (OB3).

Their perceptions of breech birth as a physiological process were enhanced by **understanding the mechanisms** of normal breech birth.

> *I went to the pre-conference workshop that [Midwife and Obstetrician Breech Experts] taught together … and I really understood the mechanisms of normal breech birth, and I really understood how to identify when there was a problem and what to do about it. (MW5)*

They contrasted physiological breech strategies to training in their local practice settings which focused on performing interventions.

> *They only explain what to do, like how to remove the arms. But you need to understand the mechanism, otherwise you don't recognise anything. (MW3)*

Several participants described repeatedly watching and simulating breech birth videos in order to familiarise themselves with the normal mechanisms.

These midwives and obstetricians demonstrated **flexibility** in their practice that enabled them to work to the rhythm of physiological births, particularly by *being available*.

> *Our section rate was down towards 10%. So we did everything vaginally, and it was just a matter of being available and being there to do 'em.* (OB2)

This type of flexibility was a matter of both character and circumstance, which participants identified as unique in their settings.

> *The reason that myself and my colleagues are able to do it is because we have family set-ups that allow us to drop everything at a moment's notice and come. (MW8)*

Participants in all settings described diverse ways they created **availability** for breech births which occurred unpredictably, and were continually trying to increase this availability. These included: on-call working; offering to come if available; responding to colleagues' requests for help, even when not on duty; setting up innovative continuity-based teams within maternity care

systems where the majority of care was provided by professionals working shifts; negotiating the ability to work across employment borders in collaboration with other breech colleagues.

Personal flexibility was also evident in participants' **openness to innovation** based on physiological principles, often before such practices had gained acceptance in their local practice settings. For example, several participants discussed initiating resuscitation with the umbilical cord intact. *Leave the cord attached and they do so much better … But our big universities haven't quite caught onto that. (OB2)* Despite participants' personal openness, cultural resistance around breech created barriers to innovation. One participant contrasted the ease with which other specialists were able to introduce new surgical techniques which had not yet been rigorously tested, based on experienced professional judgement, with the resistance faced when trying to introduce upright maternal position for breech births.

> *I think when you find a new operating way, or a new technique, you do it also. And my colleague who is very good in laparoscopy, does not ask, "Hey, Lilith, can I try this on Monday? Shall I call you?" You have some experience and you want to advance techniques. And [upright breech birth] is a good technique in which I really believe, and I cannot make it from a randomised controlled trial clear to my colleagues, but I want to try it, yes. (OB5)*

3.2: Critical Awareness

For these participants, **critical awareness** initiated a turn away from local practice settings to explore different understandings about breech birth. This turn often involved witnessing less-than-optimal breech practice. Several participants expressed criticism of the actions and responses of professionals they observed managing breech births, but also felt keenly aware of the inadequacy of their own preparation.

No one in the entire hospital knew what to do. A very old guy … attended the birth in a very awful, awful, awful way. And the baby was completely with bruises on the entire body. And I felt that something was wrong about that. (MW9)

Early formative events involved **recognising incoherence** in behaviour which undermined the successful physiology they observed.

It was obvious she was cracking on, she was kneeling up, she was beginning to feel pressure … And the consultant just came in and was like, "Right I need an epidural put in …" She started pushing as the epidural went in, and then she was numb … they struggled with the head, and the consultant pulled and pulled and pulled …. (MW1)

Recognising the negative effects of fear on professional decision-making, these participants began consciously **distancing fear**.

It was my first breech, I was alone. My colleague, the [senior] midwife, she told me, "I won't do it because I'm too scared. You need to do it because you are the brave one." (MW3)

Participants were aware of how communicating about breech as an emergency impacted the behaviour of their colleagues, and consciously chose to communicate about breech as normal, a choice some had also observed in their mentors.

I was like, "Oooh, what do I do? It's coming, but chaos will ensue if I pull that [emergency] bell … so I just pulled the bell as in I was just calling somebody" (MW1)

They also reflected on the effect of fear on their own actions.

In that birth, the baby was fine, the baby was coming along … I think I did something, I did an episiotomy and I did the manoeuvre because I was scared. (MW3)

Participants expressed **academic doubt** about the research and education underpinning mainstream practice for breech presentation.

> *While I was compiling this data [from a local audit], the Term Breech Trial was published suggesting we were killing or maiming 1:20 babies, and I had in my hands data from 400 [breech births] that showed that was nonsense. That piqued my critical interest, so it became an academic interest as well. (OB1)*

They began to read more widely around the research base concerning breech presentation, and questioned the legitimacy of mainstream training methods.

> *It feels like there's a whole generation of obstetrics that has taken us back to the dark ages in terms of breech. We've now got this cookie-cutter recipe for how to do vaginal breech, which sounds like it's just recited out of textbooks rather than emerging out of the depths of lots of personal experience of people. (OB4)*

3.3: Intention

Participants' critical awareness catalysed an **intention** to develop personal skill with breech birth. *So I decided to go search for courses and things like that. (MW9)* Only one participant described having received support from their employers to undertake additional learning in this area, but some participants' efforts to gain experience were supported by individual, like-minded colleagues. *What we do is we call each other. We do these births together. (M2)* Some viewed their self-determined intention as similar to other areas of advanced practice within their professions, but were aware that colleagues did not share this view.

> *That word, "brave," I hear that said to me all the time, and I find that quite insulting. It's nothing to do with being brave. I mean, I wouldn't be able to go and look after somebody on HDU [High Dependency Unit]. I would need to have extra training.*

And if for some reason or other, I suddenly woke up tomorrow and thought, "All I ever wanted was to be is an HDU obstetric nurse," then I would seek that training. If you want to do something and you want to be something, the buck stops with you. (MW8)

Participants specifically sought out **contact with experts**, professionals regarded as having genuine expertise in both breech practice and teaching skills to others.

During the conference, people would come up to him over and over again and say, "Can you show me again?" And I kinda stalked him a little bit and watched him doing it again and again 'cause I really wanted to get it down. (MW5)

In Figure 2, Breech Experts are depicted independently due to their important and on-going role in guiding participants' deliberate acquisition of competence and the trajectories of their careers: *So I would say that he changed my life in my career, something like this. (OB3)* The influence of Breech Experts operated across multiple practice settings, and a few were mentioned by multiple participants working in different geographic areas, sometimes with reverent language, eg. *guru of breech birth* (OB4). Simulations performed with Breech Experts appeared particularly meaningful.

She put her hands on my hands. And it was minute, minute traction. But it was there, and that's what I needed. In a way, that single act taught me absolutely the most of what I understand. (MW8)

At this stage, participants were **working outside boundaries** of geography, practice and standard training, in various ways. All participants in this study described travelling beyond their local practice settings, sometimes internationally, to attend breech workshops and conferences. Some travelled to work with Breech Experts, or to settings where breech births were common. *I was at a conference and saw his name there so tracked him down and asked if I could come*

and work at his unit. (OB1) Some remained within the same local geographical area but worked outside normative boundaries in other ways. One midwife and one doctor reported significant early learning experiences while caring for women whose babies had died in utero. For the midwife, attending stillbirths meant practising autonomously within an environment where midwives usually did not attend unsupervised breech births. For the obstetrician, it meant freedom to be slow and careful when applying forceps to an aftercoming head for the first time, knowing the baby could not end up, as she described, *deader than dead* (OB4). For another midwife, gaining breech experience involved working outside local regulation boundaries.

> *So I asked this OB-GYN to be with me, and here … the medical board is very against home births, so we were illegal midwife and also our illegal OB-GYN attending breech home birth. (MW9)*

Having set their intention and broadcast it in various ways, participants began **attracting breeches**. Combinations of accident, attention, receptiveness and word of mouth meant they found themselves attending more breech births than they previously expected or thought possible. *So one woman told the other one, and suddenly a lot of breech births were appearing from everywhere! (MW9)* Some participants attributed clusters of early experiences to chance; others actively created conditions that made it more likely that they would be involved in breech births, particularly by discussing their interest and extra training with their colleagues. *That basically came about from talking to the staff of my interest and pure luck that I was on shift when the women came in. (MW1)*

3.4: Identity

As colleagues in their local practice settings became aware of the participants' interest, association with breech birth became part of these participants' professional **identity**, even

before the participants owned such an association as part of their personal identity. *I had a phone call in the middle of the night when I wasn't on call … someone had decided I was the breech expert that night [laughing]. (OB4)* Despite some having attended a relatively modest number of births, participants were already beginning to operate recognisably as **specialists**. This term was used by some participants when referring to experienced mentors who were known for their skill with breech within the participants' local practice settings.

> *I had the luck to be resident where breech positions were accepted and especially because two gynaecologists were specialised in it because they had a lot of experience. (OB5)*

But awareness of this special association with breech was not always positive. *Lots of people think we're mavericks. (MW8)* While all participants in this research demonstrated an affinity for physiological birth, critical awareness and intention to develop breech skills, these later stages in the deliberate acquisition of competence featured more frequently in the narratives of more experienced participants. In data from less experienced participants, the same stages were recognisable, but in the form of shadow data [34], where participants speak about others, rather than themselves, eg. *[She] is well-known for her breech. (MW6)*

A core feature of sustaining breech identity and practice was establishment of a **community of practice** with other supportive breech-experienced professionals.

> *By e-mail or occasionally by phone and sometimes just serendipitously when we catch up with one another … we review cases, more out of interest than … some critical appraisal format. (OB1)*

They forged relationships with like-minded colleagues within their practice settings.

> *Then another consultant came along [here], who was really open to midwifery as a skill, and we'd just naturally found each other, like you do. (MW8)*

These collaborative professional associations enabled them to grow and change, acquiring additional clinical flexibility.

> *Especially one [colleague] … she is really progressing and pushing me in a new way to see things from another point of view. And she supports me and I her to do things differently. Because you need support. (OB5)*

However, sometimes cultural resistance meant they could not access support locally.

> *I think the last 20 years, if you've been prepared to stand up and be counted as an obstetrician who does vaginal breech births, you were painted as a bit of a feral risk taker … It wasn't the sort of thing that you walked into the tea room and said, "Ahh, I just did a fabulous breech!" (OB4)*

Therefore, they also maintained connections with the Breech Experts and peers they had encountered outside their local practice environment. *Some of the other midwives were really scathing … I ended up ringing up [a Midwife Breech Expert] and talking through to her. (MW6)*

As their experience and understanding grew, the participants found **increasing confidence**. Unexpectedly, this seemed to occur along with, or as a consequence, of the establishment of breech identity, rather than preceding it. Participants were often receiving referrals from other professionals before feeling fully confident as specialists themselves. Self-confidence increased following successfully resolving complications.

> *I did the [manoeuvre] for the very first time, and it worked like a charm and this 10 1/2 pound baby just popped right out. It was very affirming that what I had learned actually worked in practice. (MW5)*

Confidence to trust their own experience, intuition and problem-solving ability also grew as they learned in practice that the rules they had been taught to follow do not always work.

> *It gives you a new perspective when you realise it isn't quite the way that you were taught and that the sky won't fall in if the woman isn't flat on her back with her legs*

in stirrups. It's okay if you don't cut an episiotomy, and it's okay if you don't put forceps on and … you know, all that high intervention stuff we were taught as trainees. (OB4)

Confidence also grew as they successfully applied transferable knowledge of physiological cephalic birth to their breech practice.

My colleague wanted at first to do it the way she learned it, so asked the woman to lie down on the bed, and then after two times pushes, she said, "Well, no, this is not going to work," and asked her to sit on the birthing chair. (MW2)

3.5: Responsibility

Increased **responsibility**, and awareness of that responsibility, characterised the final stage in the deliberate acquisition of competence.

When you learn breech skills and you get to the point where others consider you experienced … with that, for me and my colleague, has come a massive sense of responsibility. (MW8)

Participants sensed others' increased expectations of their abilities, and their colleagues' doubts.

Well, it's complicated because everybody thinks it's complicated, so you get real sore on your shoulders doing the birth. So everyone is a little bit shaky, and everybody says, "She's doing it." So that makes me sometimes a little bit more nervous than it should be. (OB5)

Participants at this stage exhibited noticeable **markers of experience**, which distinguished them as the most breech experienced practitioners in their local settings, even amongst professionals with comparatively more years of experience. They were able to make comparisons between experiences: *What I had found to work with larger babies [at home] did*

not work for that one. (MW5) Their familiarity with the mechanisms and patterns of breech labours underpinned an ability to anticipate complications occurring. *I've seen so many normal breeches as well … so I know when I need to intervene now. (MW7)* These more experienced practitioners also described being able to improvise solutions in particularly complex situations, where simpler methods proved inadequate.

> *I did what felt instinctively right to me, and I … turned it posteriorly. It wasn't a conscious decision to do that … just felt which way it felt like it would go … and then as I turned it the other way, it was already delivering its own arm. (MW8)*

Participants exhibiting markers of experience had all attended at least 10 breech births and had managed multiple complications successfully.

Participants became increasingly involved in **supporting others** to develop breech knowledge and skills within their local services. *I've also been at [other births], trying to encourage other midwives, just by being in the room. (MW4)* Their capacity to describe physiological patterns, problems and solutions enabled them to teach others, which they did both formally and informally. *Then afterwards, I'm like, "I'm really not an expert in this, but I know the theory, so let's do it all together." (MW7)* Supporting colleagues' up-skilling involved continued flexibility and availability to support breech births clinically to ensure the safety of the service. *And then I have to be there because I think a lot of trouble comes from people who don't know how to do breeches and they want to pull. (OB2)*

Some participants also became involved in **leading change** at local levels and beyond. They organised conferences and training days similar to those they had attended when they first set their intention to develop breech competence. Leading change often required them to become aware of institutional politics.

It was about teaching the managers. I actually think that trying to start from the bottom up in this particular instance, with lost skills, is not helpful. You have got to engage the consultants and the senior management. (MW8)

Critical awareness also expanded with experience, and some discussed access to skilled support for a vaginal birth as a human right. *We understand breech birth as a reproductive right. So the women have the right to have a vaginal birth if they have a bottom-first breech. (MW9)* They also understood the need to think strategically beyond their local situation, although this sometimes attracted additional cultural resistance.

I can't get enough volume for other people to learn at my private hospital. So I went to the university, thinking people could just refer 'em there. The problem is that their paediatricians, they're all hyperventilating when the baby comes out. (OB2)

Finally, the evidence indicated that some participants were beginning to be regarded as specialists with expertise valued beyond their local practice settings. *On the back of [the conference], we've had so many requests, "Will you come and talk to us about what you've done, how you've done it?" (MW9)* This suggests that, for some practitioners, iterative engagement in this model develops into the deliberate acquisition of expertise, and an expanded professional identity as a Breech Expert.

Discussion

In this study, the deliberate acquisition of competence in physiological breech birth involved five iterative stages: affinity with physiological birth, critical awareness, intention, identity and responsibility. The findings lend further support for the development of specialist breech teams within each maternity care setting, as suggested by the consensus of experienced breech professionals in previous research.[23]

Unique to this research is the finding that specialist identity association with physiological breech practice does not appear to be a linear progression following achievement of a certain number of births, a prescribed training programme, or formal recognition. All but one of the participants, the least experienced, received referrals and requests to assist other professionals with aspects of breech care. This suggests the demand for breech specialists exists across very disparate maternity care environments, and is felt by professionals as well as service users. The participants' regard as somewhat specialised among their peers was evident, despite in most cases a modest amount of actual breech experience. In this model, the notion of specialist practice is reconceptualised, from an association with lengthy clinical experience, to one of engagement within a community of practice. This model resonates with Ericsson's theories of expert performance.[35] According to Ericsson, observed expert performance correlates with active engagement in deliberate practice, including feedback and guidance from teachers, time for problem-solving and evaluation, and opportunities for repeated performance to refine behaviour, rather than greater professional experience.[35] The deliberate acquisition of competence model presented in this paper also has the potential to be refined and tested in other areas where specialist skill and greater continuity might enhance safety and service provision, such as home birth, physiological twin birth and vaginal birth after caesarean section.

Lave and Wenger describe how members of a community of practice acquire an identity association by virtue of successfully navigating and negotiating participation in that community, within which learning and development continually occurs.[36,37] Through their engagement with a breech community of practice, participants in this research acquired a professional identity association with breech specialist practice, often through the eyes of their non-participating or more peripheral colleagues in the first instance. The model suggests that formal identification of a multi-disciplinary breech team may be sufficient within many contexts to initiate the attraction

of enough breech births to develop and maintain the team's expertise, although the practicalities of how this occurs will inevitably vary between settings. If implementing a breech team model, services should be aware of a window of vulnerability. Despite early professional identity association, in this research only participants who had attended approximately 10 or more births exhibited the markers of experience associated with taking on increased responsibility, due to having successfully encountered and resolved multiple complications. This corresponds to consensus research indicating that professionals gain competence to practice autonomously after attending approximately 10-13 breech births,[23] and appropriate support mechanisms should be in place as individuals within the team approach this level of experience.

With time and flexibility, the presence of a clearly identified group of experienced practitioners may enable further members of the local maternity care team to engage in situated learning with internal specialists or external breech experts. Such models of training and care should be rigorously monitored and evaluated if implemented. Many of the participants felt a heavy burden of responsibility, which in several cases was made heavier by feelings of professional isolation and cultural resistance to vaginal breech births in general. Team and workplace conflict has been shown to have a detrimental effect on safety,[38] and may furthermore reduce professional resilience,[39] leading to a reduction in the necessary flexibility and affinity required to facilitate physiological breech births.

This study has a few limitations. The in-depth interviews with a broad international sample of fourteen midwives and obstetricians practicing in a variety of settings enabled the discernment of similar stages across settings, but the heterogeneous nature of the participants' practice settings may have obscured other important aspects because they were not able to be expressed in certain contexts; this may affect transferability of the model. The results describe general principles of breech specialist skill development, but lacks specific practical detail

necessary for implementation in individual organisations. While the results suggest deliberately organising breech training and services to involve flexible specialist teams may be fruitful, they do not present evidence that such a strategy will be effective, nor do they provide safety data concerning the impact of any changes on outcomes for mothers and babies. These questions should be explored in future research.

Conclusion

The results of this research suggest that institutions wishing to implement the option of physiological breech birth may begin by identifying a multi-professional team of individuals with aptitude and flexibility, who may be supported to develop into breech specialists within a local community of practice, with guidance from internal and/or external breech experts. The five stages of deliberate competence acquisition identified were distinct enough across a variety of contexts to inform training and organisational development programmes based on this empirical model. Institutions may also consider implementing policies which reduce the burdens of isolation and disproportionate responsibility on those who attend breech births. Training models based the stages described in this research may enable more sustainable provision of vaginal breech birth support within contemporary maternity services. The impact and safety of such models should be explored in further research and evaluation.

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