

2018

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[10.12968/bjom.2018.26.3.145](https://ro.ecu.edu.au/ecuworkspost2013/4185)

This is an Author's Accepted Manuscript of: Nel, S., & Geraghty, S. (2018). Are midwifery students adequately prepared for vaginal breech birth in clinical practice?. *British Journal of Midwifery*, 26(3), 145-149. Available [here](#).

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Are Midwifery Students Adequately Prepared for Vaginal Breech Birth in Clinical Practice?

Abstract

Whilst the value of the clinical skills and expertise required to enable safe Vaginal Breech Birth remains high, midwives who possess these skills are becoming a scarce commodity. Additionally, for many midwifery students vaginal breech birth is becoming somewhat of an elusive event, rarely experienced in clinical practice whilst completing their training. Not so long ago this was a standard competency taught and held by obstetricians and midwives alike, but for those in developed nations working within robust health care systems, the frequency of planned vaginal breech birth is on a downward trend reflected in midwifery educational curriculums.

Introduction

The current heightened focus on risk, impacts upon maternity care providers' attitudes towards Vaginal Breech Birth (VBB) (Berhan & Haileamlak, 2016), and this professional apprehension may have the potential to limit the vital support, advocacy and empowerment of women's choices. In relation to current and future midwifery practice, these professional attitudes coupled with tertiary and clinical organisational teaching methods may be significantly influential. Simulation is a particular teaching tool with a long history in obstetric and midwifery education (McKenna et al., 2011), and continues to play a significant role in training within contemporary educational institutions and clinical environments. Education, and the enabling of sharing of knowledge, is often a major deciding factor regarding certain clinical skills being imparted to the next generation of clinicians. This raises the question as to whether midwifery students are being adequately prepared to apply VBB skills to clinical practice or not, and ultimately if planned VBB is facing extinction.

The Historical Perspective

Simulation has a long history within midwifery and obstetric education, with models and props being faithful tools used by educators for centuries. Lack of diagnostic technologies and interventions in the past required birth attendants to be skilled and prepared for breech presentations. Models, purposely designed for both demonstration and interaction with learners, and have been used for obstetric training

for both doctors and midwives throughout the years (Owen, 2012). The limited literacy and formal education possessed by midwives, who often assisted medical accoucheurs, was recognised by Giovanni Antonio Galli in the 1700's. To address this gap in theoretical knowledge, he constructed a birth simulator complete with a glass uterus and fetal mannequin, and assessed pupils on their ability to successfully birth the fetus whilst blindfolded (Owen, 2012).

Eighteenth century French royal midwife, Madame du Coudray, used materials including leather, bones and fabric, to create life-sized models known as obstetric machines for the purpose of training midwives in France, including the knowledge and skills required to manage deviations from the normal mechanisms of birth (Yuill, 2017). Madame du Coudray also documented the importance of providing accoucheurs with regular opportunities to practice and refresh skills required for complex birth scenarios, and later editions of du Coudray's models were even able to release fluids to mimic amniotic fluid and blood.

In 1742 William Smellie, who was credited with designing some of the most intricate simulation models, advertised courses in the art of midwifery, utilising practical simulation covering multiple potential presentations and complexities in the United Kingdom (UK). He received criticism for using replica fetuses made from materials including wood and rubber, rather than using fetal cadavers as was common practice at the time, and these natural mannequins continued to be used into the twentieth century (Owen & McDonald, 2013). In 1755, a former student and assistant of Smellie, Colin Mackenzie, opened a school of midwifery in London. One of Mackenzie's students, William Hey, noted that observing others mistakes during simulations was beneficial to his own learning experience (Owen, 2016). In 1767, surgeon John Leake discussed the advantage of simulation to one's education and development of safe clinical practice. He suggested that practitioners' initial introduction to invasive technical skills is more appropriate on artificial bodies rather than "on real subjects, to the manifest danger of the patient and the ruin of their own reputation..." (Owen, 2016, p. 106). This suggests that individuals required repeat opportunities to hone their skills prior to being considered proficient practicing on real life patients.

The acquisition of obstetric simulators by training institutions continued to rise throughout the nineteenth and twentieth centuries and were improving in fidelity (Ennen & Satin, 2010). Some surviving examples are displayed in museums in Europe

and Australia, and one particular exhibit is a leather fetus complete with digits and skull suture lines housed inside a torso. This was used to teach birth attendants how to determine fetal presentation and practice manoeuvres such as those applied to VBB (Owen & McDonald, 2013).

Current midwifery student training

Simulation training has become a standard feature of contemporary midwifery training and education programs. From du Coudray's humble yet pioneering obstetric machines, twenty first century technology now provides clinicians with high-fidelity equipment which can be programmed to respond to real time interventions (Yuill, 2017). Within busy maternity hospitals, increasing numbers of midwifery and medical students in clinical environments are all vying for experiences to gain skills in normal and complex cases. Additionally, clinical placement shortages further reduce student's chances of witnessing and/or participating in more complex situations alongside experienced clinical staff (McKenna et al., 2011). The current climate in midwifery education relies on simulation training in order to provide students with opportunities to develop relevant practical skills, including the management of both undiagnosed breech presentation and planned VBB, and may aid in relieving some of the potential tensions associated with these student saturated environments (Bogossian et al., 2012). While it has been suggested that simulation training may be a solution to the declining numbers of current clinicians retaining proficiency in VBB, it limits support and supervision available to students. Concern has been expressed in relying on simulation training alone, which may not provide adequate levels of competence to sufficiently prepare students to safely transfer skills to clinical practice (Hunter, 2014). Therefore, this increases the importance of protecting and increasing existing skill mixes as a strategy to improve learning opportunities for students.

Another important role of simulation in midwifery education is to provide opportunities for hands on experiential learning, which enables students to develop and refine practical skills, which can be translated to safe clinical practice (Yuill, 2017). This pedagogical approach is based upon scenarios that can be replicated, and mistakes can be made in a supportive and controlled environment. Performance can then be improved upon without causing harm or compromising the safety of actual women and babies, allowing individuals and teams to attain greater confidence and

competence in these skills prior to their application to real life clinical situations (Lendahls & Oscarsson, 2017). Simulation activities also allow for students to gain familiarity in identifying and using specialised equipment which is useful when emergencies arise in the clinical setting and timely interventions are critical. Therefore, simulation of scenarios provides opportunities for students to learn, practice and demonstrate the knowledge and skills required of them, including specific management and specialised manoeuvres pertaining to VBB, and may also be beneficial in reducing students' anxieties associated with limited exposure to this while on clinical placement (Vermeulen et al., 2017).

Another intrinsic function of simulation as an educational strategy, is to assist students in developing their ability to link theory to practice, which can be further enhanced by providing opportunities for reflection and critical thinking (Lendahls & Oscarsson, 2017). The provision of interactive scenarios, requiring team work, also helps to improve team coordination, delegation of roles and communication (Shepherd, King, Servais, Bolack, & Willoughby, 2014). It is understood that reflection is a crucial element of improving practice, confidence for future situations and events, and debriefing following drills. This also facilitates educators and participants in assessing the efficacy of their actions on outcomes, by identifying what went well and areas requiring improvement.

In the context of the midwifery philosophy of being 'with woman', technology has its limitations, and the human interaction and intimate nature of maternity care may be omitted when attempting to replicate clinical situations in non-clinical settings (Sanders & Steele, 2014). Therefore, some argue that some vital aspects of midwifery care cannot, and perhaps should not, be replaced by simulation as it cannot adequately substitute the educational value of real life clinical experiences (Yuill, 2017). However, as tertiary teaching methods continue to move away from face-to-face classroom settings into increasingly isolating external self-directed formats, simulation can provide valuable activities accommodating for different learning styles and promote interaction with peers, which is essential to working within multidisciplinary teams (Bogossian et al., 2012). It has also been reported that some students report hesitation in engaging with simulation training when other participants are strangers, or they feel intimidated by their perceived limited abilities, compared to more experienced staff while participating in interprofessional drills (Vermeulen et al., 2017).

Current clinical climate, practice trends and the impact of a professional culture preoccupied with risk

Breech presentation occurs in approximately 3-5% of singleton pregnancies at term. The results of the Term Breech Trial (Hannah et al., 2000) had a profound impact on changes to clinical guidelines of management of breech presentations globally, as it concluded that planned caesarean section (C/S) was the safest method of birth for breech presentations and asserted compelling evidence existed to recommend this as a universal approach to management (Sanders & Steele, 2014). Despite the subsequent recognition of the study's flaws and unsubstantiated evidence, many clinicians still consider planned C/S best practice and continues to be the routine, and sometimes only, recommendation presented to women (Petrovska, Watts, Catling, Bisits, & Homer, 2017). Professional dilemmas arise in regards to respecting and advocating for women's autonomy when standard care is declined and their preferences are beyond individual clinicians' skillsets (Jenkinson et al., 2015). Since the Term Breech Trial, global rates of CS have increased significantly, although research evidence such as that presented in the PREMODA study (2006), which was considered to the 'antidote' to the Term Breech Trial, supports VBB as a safe birth option for women who have otherwise uncomplicated pregnancies and can be referred to the care of midwives and obstetricians who possess appropriate expertise (Hunter, 2014). Research also suggests strong correlations exist between the level of clinical skill and experience held by maternity care providers and outcomes of VBB (Walker, Breslin, Scamell, & Parker, 2017). If accessibility to care facilitated by competent and experienced practitioners was increased, more women would opt for VBB, and data supplied by a Finish hospital showed that one in every three women with breech presentation met prescribed eligibility and were willing to consider VBB (Toivonen, Palomäki, Huhtala, & Uotila, 2014).

Routine C/S for breech presentations becomes problematic in that the scope for the sharing of knowledge, clinical expertise and skills in the management of VBB is reduced and limits opportunities for future generations of accoucheurs to gain proficiency in these skills through observation and hands on involvement in these cases (Antomarchi, Delotte, Jordan, Tran, & Bongain, 2014). Unless intentional efforts are made to provide access to women wanting VBB, exposure to these births will continue to be reduced, and the opportunities for senior clinicians to mentor and supervise junior staff become increasingly rare (Sanders & Steele, 2014). Consequently, the skill mixes within

organisational staffing and professions will collectively continue to be depleted, and these skills are at risk of being lost altogether (Sloman, Wanat, Burns, & Smith, 2016). Therefore, clinical staff who do possess expertise in VBB are invaluable resources to the clinical environments they work in and to other staff members (including the few students who get an opportunity to experience VBB in practice), who receive clinical support and supervision from them (Walker et al., 2017). Vaginal Breech Birth will continue to be the preferred mode of birth for some women, therefore, staff proficient in these skills are also invaluable to midwifery, women and society as a whole as leaders that can champion VBB within the paradigm of complex normality.

Current literature surrounding student's preparedness for vaginal breech birth

Current literature specific to theoretical and practical preparation for midwifery students in regards to breech birth is limited. One qualitative study exploring qualified midwives' feelings and confidence surrounding VBB observed that some midwives felt that their pre-registration training was inadequate in preparing them for facilitating VBB, as skill competency acquired via simulation is not realistically transferrable in deeming clinicians safe and competent practice in real cases (Sloman et al., 2016). Most available literature focuses on simulation as an educational tool incorporated into the training of midwifery students (Norris, 2008; Stone, Craig, Crane, & Johnston, 2017), and provides evidence which endorses these activities in the development of deeper understanding of theory and critical thinking, in addition to facilitation of hands on opportunities to learn and refine practical skills. Current evidence suggests simulation is a valuable tool and solution, particularly for training midwifery students in responding to high-risk, low-frequency clinical situations, which may not be seen during their time as students (Bogossian et al., 2012). Midwifery student's participation in experiential learning opportunities, such as simulation of VBB, not only enables the practice and increased familiarity of the associated manoeuvres, but also enhances other skills vital to the safe and effective management of this situation including effective communication and team work. Whilst simulation training may be a valuable contribution to preparing midwifery students for these clinical situations, there is no evidence to suggest it can replace the value of real experience gained within the clinical setting entirely (Cooper et al., 2012).

Conclusion

The clinical skills, knowledge and expertise required to facilitate safe VBB are currently endangered of becoming extinct in developed nations. An active approach to facilitate the preservation of these skills also serves to protect women's choices surrounding their births. Changes in attitudes and practice regarding VBB need to occur to ensure these clinical skills are not lost and can continue to be passed on to future generations of accoucheurs. High numbers of medical and midwifery students, in addition to limited skill mixes amongst existing staff, within contemporary clinical environments present challenges for students in achieving adequate preparation and support in regards to gaining experience in VBB which contributes to potential future proficiency. Therefore, simulation training continues to prove its value as a pedagogy which promotes cognitive processes linking theory to practice, and provides midwifery students with opportunities to learn and practice technical manoeuvres involved with the management of breech presentation. Sentiments regarding the importance of training and preparedness from centuries earlier still ring true and are reflected by investments in technology resulting in the development of high fidelity simulators available today. Gaps in research exist in the evaluation if midwifery students feel adequately prepared and/or what contributes to this, in regards to participating in the care and management of women having VBB and justifies further research. Interviewing students or recent graduates who have experienced VBB whilst students in the clinical setting to assess the standard of theoretical knowledge possessed and practical skills training they had received prior to the event may provide a valuable contribution to the current body of knowledge.

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