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Creating Guardians of Physiologic Birth: The Development of an Educational Initiative for Student Midwives in the Netherlands

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Women want positive birth experiences with high quality maternity care that is neither too much, too soon, nor too little, too late. Research confirms the effectiveness of midwifery care, and the midwifery approach to birth as physiologic may counter the upward trend of the unnecessary medicalization of birth. The role of guardian of physiologic birth is seen as central to midwifery practice; however, medical hegemony has led to the subordination of midwives, which inhibits them in fulfilling the role as guardian of physiologic birth. Learning to become powerful advocates of physiologic birth creates midwives able to speak up for effective, evidence-based maternity care and challenge the unnecessary use of obstetric intervention. Midwifery education has a role to fulfil in molding midwives who are able to assume this role. This brief report describes the development of an educational prototype aimed at increasing student midwife agency as an advocate of physiologic birth. This was done using rapid prototyping (RP) methodology, in which important stakeholders gave input and feedback during the educational design and development process. Input from stakeholders led to the inclusion of persuasive communication strategies and discussion and debate as teaching methodologies in order to increase student midwife agency to argue for physiologic birth. Reflective evidence-based practice, using the Optimality Index-Netherlands, allowed students to reflect on their practice while providing a framework for discussion. Working with the RP methodology allowed for the development of a prototype that reflected the needs of midwifery stakeholders and was mindful of material and human resources.

Keywords: student midwives, physiologic birth, rapid prototyping, midwifery education, stakeholders, communication skills, reflective practice, optimality

Introduction

Physiologic birth can be a transformative and empowering experience for women.¹ Because physiologic birth is considered as a health-producing, rather than a risk-producing, event, it is the cornerstone of international midwifery policy.² In high-income countries, research confirms the effectiveness of midwifery care,³ and in low- and middle-income countries, midwives have played a critical role in reducing maternal and perinatal mortality and morbidity.⁴ Investigators have documented women's desire for a positive birth experience that includes birthing a healthy newborn in an environment that is both clinically and psychologically safe, supported by competent and kind professionals.⁵ These findings are in line with recent guidance from the World Health Organization,⁶ which notes that, for many women, birth is about more than mere survival.⁷

Central to midwifery care is a philosophy that emphasizes supporting healthy physiology, including the biological, social, and psychological processes of childbirth, and focuses on tailoring interventions to the minimum required for optimal, safe care.⁸ Medical hegemony is embedded in the maternity care systems of many high-income countries.⁹ Obstetric dominance in maternity care in the second half of the twentieth century saw an expansion of a technocratic approach to birth, resulting in a sharp increase in the use of interventions during birth, despite evidence that routine, often unnecessary, interference in the birth process leads to iatrogenic harm and significantly increases the cost of health care.¹⁰ Correspondingly, in health care settings, midwives are challenged by gender in-equality and unequal power relations with other professionals, diminishing their power and influence.¹¹ Dutch midwives and student midwives view guardianship of physiologic birth as central to their role.^{12,13} However, like midwives elsewhere,¹¹ they also describe being influenced by health care hierarchy and experiencing feelings of powerlessness. These inhibit their agency and hence their power to¹⁴ promote physiologic birth.

Midwifery education can, and should, provide expertise and leadership to meet these challenges. Essentially, midwifery education is responsible for molding students into professionals who meet the needs of women for positive birth experiences that are as physiologic as possible⁵ while navigating the challenges presented by medicalization. This requires the development and internalization of an attitude that reflects the midwifery ethos of physiologic birth.² Dutch midwifery curricula provide a sound theoretical basis in the physiologic approach to birth¹⁵ and give student midwives opportunities to participate in physiologic births. However, some studies from the Netherlands suggest that a perceived lack of agency may be the root cause of some of the challenges that Dutch midwives¹² and student midwives¹³ face, inhibiting their ability to advocate for physiologic birth.

This brief report describes the steps taken, using a rapid prototyping (RP) methodology,¹⁶ to design an educational initiative aimed at increasing the agency of student midwives to advocate for physiologic birth. The finalized prototype is presented together with reflections on the design process and the resulting educational initiative.

Quick Points

- Increasing student midwife agency as advocates of physiologic birth is an important component of midwifery education.
- Specific educational initiatives can be designed using rapid prototyping methodology, which includes the views and feed-back of important stakeholders.
- A focus on communication skills such as discussion and debate may increase student midwife agency as guardians of physiologic birth.
- The Optimality Index is a useful tool that can be used to structure evidence-based reflection by student midwives on their own care processes.

Process

Rapid Prototyping

In a fast-paced and knowledge-based world, developing interventions must be efficient in both time and human resources. RP has its origins in software design, in which expeditious design solutions (prototypes) for a rapidly changing environment are of key importance.¹⁶ It is now gaining traction as a method for designing and developing education programs and courses.¹⁷

RP is characterized by an iterative approach with overlapping steps, including a needs assessment and input from key stakeholders (such as future users and experts) on each iteration to design an initial prototype. This initial prototype is a representation of how the designer thinks the output (end product) should look based on the input of the stakeholders. This is then presented to stakeholders for them to offer feedback in as many iterations as are necessary to achieve a final prototype. The final prototype can then be implemented and evaluated (Figure 1). RP shares some similarities with participatory action research methodologies, in particular, stakeholder involvement. It differs from other consensus methodologies in that it does not seek to evaluate or improve upon an existing product or generate preliminary findings for further investigation.¹⁸

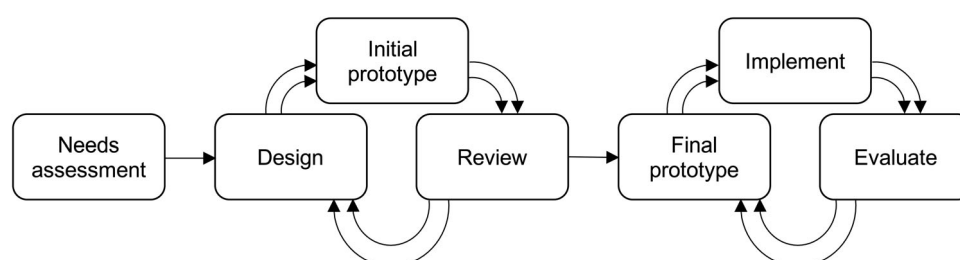


Figure 1. Rapid Prototyping Design Methodology as Used in the Development of an Educational Prototype Aimed at Increasing Student Midwife Self-Efficacy for Physiologic Birth

Needs Assessment

The first step in the RP process is a comprehensive needs assessment via analysis of the issue that the prototype aims to address and the setting of objectives. A needs analysis should include research to uncover the complexities of the problem that a prototype aims to address.¹⁶

The needs assessment began with earlier work around this topic with midwives and students in the Netherlands. One such study explored midwives' attitudes toward promoting physiologic birth and identified factors that facilitate or inhibit midwives in this role.¹² Another looked at what student midwives need from midwifery education to advocate for physiologic birth.¹³ Using the findings from these studies (Table 1), ideas were generated for inclusion in an initial prototype.

Table 1. Earlier research findings used to inform prototype development

Community and hospital midwives in the Netherlands^a

- Feelings of confidence and clinical competence important for feeling able to promote physiologic birth
- Need to learn how to effectively challenge routinized care processes with evidence
- A need to teach strategies for empowerment
- The importance of role models among midwife colleagues

Student midwives in the Netherlands^b

- Being able to develop, internalize, and express midwifery philosophy of care important for confidence and competence
- Reflection, in particular with regard to learning to use evidence to challenge
- Feelings of personal power mitigates some of the challenges faced by students in hierarchical practice settings
- The importance of role models—in particular, those with a clearly expressed midwifery vision

^a Thompson et al, 2016.¹²

^b Thompson et al, 2019.¹³

Another important aspect of the needs assessment was ascertaining organizational needs, in this case, the needs of the midwifery bachelor program for which the finalized prototype was intended.

Midwifery program managers (n = 2) and curriculum leaders (n = 4) from a Dutch midwifery academy were consulted to establish organizational needs that the prototype initiative would need to fulfil. The midwifery program managers stressed the importance of a lean design, mindful of human and material resources. Additionally, they requested an end product (an educational initiative) that would be attractive and relevant for students by creating an innovative prototype that would enrich the existing education about physiologic birth and not simply repeat material already covered.

To meet these conditions, the existing program was screened for its content relating to physiologic birth, ensuring that the likelihood of repetition of material was reduced or eliminated. This also allowed the determination of at which point in the bachelor program the prototype should be included. The bachelor program is based on a number of central pillars, of which physiologic birth is one. Educational content related to physiologic birth is integrated within the program, including theory blocks and the acquisition of skills during clinical placements in the hospital and community settings. It was decided to offer the prototype in the second semester of the third year of the 4-year program. This is a point at which student midwives have covered the majority of theoretical components and have had a range of clinical placements, both in the hospital and in community settings. In addition to this, the second semester includes both theory and clinical placements, allowing for application of theory to practice, increasing the educational value.

Stakeholder Input

Stakeholder participation in RP offers the possibility of rapid feedback¹⁶ and close involvement of stakeholders to contribute to an initial and final prototype that addresses their needs. Stakeholder inclusion also allows for the generation of the input (such as conditions, requirements, and ideas) needed to create a prototype.¹⁷ Additionally, including stakeholders increases the intrinsic motivation of these groups¹⁹ and creates feelings of ownership²⁰ for eventual use of the finalized prototype. Importantly, the iterative nature of stakeholder feedback replaces linear and time-consuming sequence approaches such as Analyze-Design-Develop-Implement-Evaluate (ADDIE),²¹ a common approach in curriculum design, reducing both development time and costs.²²

Given the involvement of stakeholders in this project, the university ethics committee (Zuyderland Zuyd) reviewed and approved the prototype development process.

Important midwifery stakeholders with a vested interest in midwifery education were recruited. These included student midwives, midwifery lecturers from the bachelor program, and midwife preceptors in practice settings (community and hospital).

Group interviews with student midwives (n = 4) and midwifery lecturers⁺ (n = 4) and individual interviews with community and hospital midwife preceptors (n = 2 + 2) were held to generate content for the prototype. Groups of 4 to 8 stakeholders are appropriate for the generation of input within RP methodology.²³

The midwives and student midwives were self-selected, having received information about the project and an invitation to participate that was sent to all 35 fourth-year students in their final placement and to the midwives precepting these students (n = 35). The midwifery lecturers were approached based on their areas of expertise to gain broad input, reflective of important areas of the bachelor program. Each session lasted between 60 and 90 minutes and was audio recorded. The interviews were conducted by the first author, an experienced interviewer. Field notes were taken by the second author. Each interview commenced with a short presentation of the information generated by the needs assessment. Following this, a

topic list was used to guide discussion, which focused mainly on the generation of material or content for inclusion in the prototype.

Input Generated by the Stakeholders

The data from all group and individual interviews (the field notes and recordings) were analyzed using deductive content analysis.²⁴ The choice for a deductive approach was made, as it seemed an appropriate choice to incorporate earlier published findings^{12,13} and to further develop those findings into an initial prototype. Input from each session was organized into a content framework, offering an overview of suggested educational content and didactic form. These were then synthesized into one document and examined in relation to the bachelor program content already on offer.

Student Input

The student midwife participants offered a number of suggestions for the prototype. These focused primarily on creating opportunities for students to learn from each other in both face-to-face and online settings. In particular, students indicated the value of peer-to-peer reflective learning activities, particularly during clinical placements, as an activity in which students could reflect on their own practice and share and learn from each other's experiences. Student midwives also highlighted the importance of structured discussion or debates as a part of the prototype. Learning to discuss and debate was linked to physiologic midwifery content and developing the necessary communication skills to discuss and debate effectively. Last, student midwives requested the inclusion of designated, explicit theme days relating to physiologic birth, rather than implicit educational activities that are woven into the bachelor program. Other suggestions included using case histories, skills trainings, and assignments during clinical placements, all of which are already included in the bachelor program.

Lecturer Input

Input generated from the lecturers concentrated on supporting students in the development of a midwifery philosophy of care, including activities in which students consider themselves in relation to the type of professional they wish to become. This included creating space in the prototype for students to develop interest in an area of physiologic birth care, through either written or discussion work. Lecturers also indicated that discussion and debating the evidence that underpins physiologic birth in a persuasive or convincing manner would be a valuable activity.

In addition to this, the lecturers emphasized the importance of developing clear intended learning outcomes (ILOs) for the prototype as a first step. Discussion focused around the importance of ILOs focusing on student behavior rather than purely cognitive processes. Miller's Pyramid of Clinical Competences²⁵ and Bloom's Taxonomy²⁶ were used to shape the development of ILOs. Four overarching ILOs were devised, and these were reviewed and provided with written feedback by the lecturers (included in Table 2).

Input from Practicing Midwives

Input from the individual interviews with midwives emphasized 2 areas in particular: the use of evidence supporting physiologic birth to underpin clinical decision making and the further development of skills to speak up for physiologic childbirth and communicate or discuss this with other professionals involved in maternity care and with women. To achieve this, a greater emphasis on debate and discussion strategies needed to be included. Midwives also highlighted reflective practice as an important learning activity for discussion and learning about various strategies that support healthy physiologic childbirth. All of the midwives interviewed talked about ways in which they try to share their enthusiasm and passion for midwifery with the students whom they precept. They felt that a plenary activity, perhaps in round table discussion form, could be an activity in which students could be inspired and enthused. Other input included use of role play and skills training, both of which are already included in the bachelor program.

Overall, the stakeholder groups generated a significant amount of input for the prototype, including the formulation of ILOs, educational activities about physiologic birth to support students in developing a personal expression of the midwifery philosophy of care, discussion and debating skills to better communicate evidence-based practice, and peer-to-peer reflective learning activities. This input was then used to craft an initial prototype.

Table 2. Prototype Educational Initiative

Intended Learning Outcomes: The student midwife can . . .	Theoretical	Clinical Placements	Didactic Methodology
Use the Optimality Index-Netherlands and interpret findings in relation to optimal care processes	<p>Concepts of optimality in maternity care</p> <p>Introduction to the Optimality Index</p> <p>Advantages to use during clinical Placements</p> <p>Instructions for use</p>	The student midwife completes 5 Optimality Index-Netherlands forms in either primary or hospital care setting	<p>Face to face</p> <p>Presentation and workshop</p> <p>Recording of session for use</p> <p>online</p>
Distinguish between the diverse approaches to maternity care (physiologic, biomedical) and question when each approach might be appropriate	<p>Communication training: communicating the evidence</p> <p>Synthesizing midwifery evidence from different sources</p> <p>Integrating knowledge plus own experience to underpin argument and discussion</p>	<p>Peer-to-peer reflective Activity</p> <p>Reflection on own care using Optimality Index-Netherlands</p> <p>Awareness of care processes to increase optimality in all birth settings</p>	<p>Face to face</p> <p>Workshop</p> <p>Online session</p>
Select and critique the evidence that underpins physiologic childbirth	<p>Debating physiologic childbirth practices</p> <p>Reading assignment as preparation</p> <p>Debate with motions to defend or rebut</p>	Experiment with learned techniques during clinical placements	<p>Independent reading and study</p> <p>Debate</p>
Argue and justify actions and care processes that support physiologic childbirth	<p>Communication training: communicating with conviction</p> <p>Persuasive communications Techniques</p> <p>Presentation skills</p>	Experiment with learned techniques during clinical placements	<p>Face to face</p> <p>Workshop</p>

The prototype

In synthesizing the input from participating stakeholders, 2 main areas for inclusion in the initial prototype emerged: the application of reflective evidence-based practice and the skills needed to communicate the evidence with conviction, including discussion and debating skills.

A framework was identified that was considered to best support reflective evidence-based practice. The Optimality Index²⁷ is validated for use in the United States²⁸ and the Netherlands.²⁹ The Optimality Index has been described as an evidence-based tool maternity care professionals can use to appraise both processes and outcomes of maternity care for women at low and medium risk. Additionally, the Optimality Index is useful for experienced midwives with routinized care practices who may be less confident with evidence-based ways of working,²⁸ allowing for reflection on care practices and creating awareness of adaptations to practice that facilitate optimal birth. Moreover, the concept of optimality complements a physiologic approach to midwifery. Optimality is defined as the maximal perinatal outcome with minimal intervention, placed within the context of the woman's social, overall health, and maternal health history.³⁰ Not least, the Optimality Index has also shown potential as an educational tool for student midwives.³¹ Reflection allows professionals to become aware of their implicit knowledge and develop the ability to think on their feet.³² Structured reflective discussions encourage student midwives to develop the critical decision making skills necessary for autonomous practice in the Netherlands, a core professional skill.³³ Structured peer-to-peer reflective sessions contribute toward increased self-awareness and the development of personal skills and are a means of linking theory to midwifery practice.³⁴

Debate and discussion are effective skills for settings in which complex discussion and decision making inform clinical practice.³⁵ Student midwives must develop the ability, and the agency, to debate and engage in dialogue with other professionals in the maternity care domain, as well as with pregnant women and their families, about the likely benefits of physiologic childbirth. Debate and discussion are active learning activities that allow for the development of critical discourse.³⁶ A pedagogy that develops the ability to challenge practice through discussion and debate is an appropriate choice for the realities of contemporary health care and the promotion of professional (midwifery) practice.³⁷ These 2 aspects were central to the design of initial prototype, along with some of the other input generated by the stakeholder interviews.

From Initial to Final Prototype: Review and Iteration

In this step in the RP process, the initial prototype is presented to stakeholders so that they can review it and provide further input. The prototype is then modified in as many iterative cycles as is necessary, involving the stakeholders, to create a final product that is ready for real world testing.²⁰

The initial prototype was presented to stakeholders, and they were asked to consider whether the initial prototype met their needs. A group interview was organized for the lecturers to review the initial prototype. For practical reasons relating to clinical placements (student midwives) and professional commitments (midwives), written input, rather than interviews, was requested and obtained.

Lecturers were positive about the prototype but pointed out that activities that contribute to achieving increased agency as an objective must be paramount. It was felt that using the Netherlands version of the Optimality Index (OI-NL)²⁹ in combination with reflective practice would be innovative, as it would encourage discussion and reflection on the evidence base for physiologic birth practices.

Student and practicing midwife stakeholders welcomed the idea of activities in which enthusiasm and passion for midwifery could be shared and considered such an activity within the context of a theme day. Lecturers were slightly less enthusiastic about explicit theme days but saw value in a plenary kick-off to the prototype that would be inspiring for student midwives to attend. Other significant feedback related to the prototype's size. It was felt, in particular by the lecturers, that some activities were already extant in the bachelor program. Suggestions were made with regard to creating a leaner design to ensure that further development time would be used efficiently and that a final prototype would be mindful of available human and material resources.

Three iterations were needed to arrive at a finalized prototype that was ready for testing in the bachelor program.

The Finalized Prototype

The finalized prototype reflected the input delivered during each iteration. Care was taken to ensure that the prototype maintained a focus on educational activities aimed at developing and supporting student agency and advocacy of physiologic birth. Attention was also paid to selecting the most relevant activities, linked to the ILOs, to streamline the finalized prototype (Table 2).

From finalized prototype to the essential program

Educational content was then developed to be able to implement the finalized prototype early in 2019 as a pilot within the bachelor program (Table 3). The finalized prototype initiative was named the ESSENTIAL program (ESSENTIAL being an acronym for the working title of the project: IncrEaSing Self-Efficacy in sTudent midwives for PhysiologicAl chiLdbirth).

A number of didactic approaches were considered. To achieve the ILOs (Table 2), content needed to be directed toward learning in the higher echelons of Miller's Pyramid²⁵ (*shows, does*). These echelons go beyond knowing about a task and require a student to show how a task is performed and to be able to perform it. This justifies the significant number of activities offered as workshops, communication skills trainings, role play, and discussion in which students are encouraged to participate. Communication skills trainings in particular were directed toward content in which convincing or persuasive communication is central to learning how to increase influence.³⁸ Being in a position, through either formal or grassroots means, to influence others is associated with feelings of well-being³⁹ and may increase self-efficacy as a result.^{38,39}

Educational content was organized into 3 half-day sessions; these were scheduled at times in which students on clinical placements were expected to be present for link days (teaching sessions offered during clinical placements to link theory and practice). Each session contains a plenary session, either as inspiration (session 1) or as a short introduction to theory (sessions 2 and 3). In session 1, the concept of optimality is introduced, and in the second and third sessions, reflective activities allow students to reflect on the optimality of their own cases, based on OI-NL data sheets that they have been tasked to complete during ongoing clinical placements. Communication training content is themed, allowing students to develop agency skills as a convincing communicator (session 1), develop skills to persuade or convince another person (session 2), and participate in an assimilation (session 3) in which learned communication skills are applied to a formal debate setting.

An evaluation is planned to assess the effect of the ESSENTIAL program on the agency of third-year student midwives. Using a mixed methods approach, agency outcome measures such as self-efficacy and perceived empowerment will be assessed and compared with a cohort of student midwives who were not offered this initiative as part of their bachelor program. These findings will be reported in a separate publication.

Table 3. ESSENTIAL^a Program Content

Educational Content	Short Description
Inspiration and motivation	Program kick-off in plenary form, led by high-profile midwives. Highlighted the importance of midwifery leadership, midwives with power and influence being at the table, involved in decision making and policy at all levels. Power in the midwifery context was discussed, in particular the link between power and personal agency.
Developing personal agency skills	Communication skills training in groups of 12 students led by a midwifery lecturer and a communication skills trainer. Focus on developing agency, including insights in personal power or powerlessness; developing credibility, and using structure to build argumentation.
Developing persuasive and convincing communication skills	Communication skills training in groups of 12 students led by a midwifery lecturer and communication skills trainer and actress. Recognizing and applying strategies linked to persuasive and convincing communication. Focus on both verbal and nonverbal techniques.
Discussion and debating skills	Developing skills to construct adequate argument, including the ability to assert claims in a convincing manner and select appropriate data to be able to support claims. Ability to anticipating counterargument and have rebuttals prepared.
Reflective practice	Reflective discussion facilitated by midwifery lecturer. Using the Optimality Index-Netherlands during placement and reflecting upon Optimality Index scores; discussing care processes that may increase likelihood of optimal outcomes.

^a Description of the educational content of an educational initiative aimed at Increasing Self-Efficacy in Student midwives for Physiologic birth (acronym ESSENTIAL).

Reflections on this process: lessons learned

Using RP methodology, a finalized prototype for an educational initiative was created, addressing the need to strengthen student midwife agency as advocates of healthy physiologic birth. The finalized prototype was effectively linked to existing educational activities on physiologic birth within the current midwifery program, ensuring that content was added or innovated, rather than repeated. Additionally, organizational demands in terms of producing a prototype that was mindful of human and material resources were met. By listening to program managers, lecturers, student midwives, and preceptors, it was possible to ensure a prototype design and content that met their needs.

Reflecting on the development process, RP methodology¹⁶ was an appropriate choice for creating and refining a finalized prototype. Although there is a precedent for RP use in the design of adult education programs in the maternity care domain,⁴⁰ this is, as far as is known, the first time it has been used in an undergraduate midwifery program. Three iterative cycles were needed, over a period of 4 months, in order to finalize the prototype, which met the needs of the bachelor program with regard to resource efficiency while also meeting program goals for midwifery students.

Engaging and working with various stakeholders was important for a number of reasons. One success factor was early consultation with the management team responsible for the bachelor program. Ensuring their support for the necessity of the initiative and obtaining and maintaining ongoing commitment for both development and implementation of the initiative was central to its acceptance and success. Another success factor was the inclusion of lecturer and student midwife stakeholders. Aside from the importance of lecturers and student stakeholders in generating content, their inclusion created a degree of ownership that is important for the acceptability of new initiatives.²⁰

Sensitivity toward the stakeholders as a human resource was paramount. Dutch midwives perceive their workloads to be high.⁴¹ This resulted in a choice to use individual interviews and written feedback, rather than organizing group interviews for the midwife and student midwife stakeholders. It was not an aim of this process to seek data saturation, as in traditional qualitative methodologies. The group and individual interviews were aimed at confirming the findings of earlier studies^{12,13} that were used to inform the prototype development. Ensuring relevant stakeholder involvement in the generation of ideas for an educational initiative, its content, and its pedagogy was considered essential. Larger group interviews may have generated greater amounts of input and more confirmed consensus. However, this was mitigated by incorporating significant amounts of qualitative data generated in earlier studies,^{12,13} ensuring an evidence base for the development of the initial prototype and subsequently reducing any possible impact on the workload of Dutch midwives who precept student midwives.

The choice was made to focus the finalized prototype initiative solely on student midwives. Increasing student agency for physiologic birth may produce a ripple effect among precepting midwives as preceptors come into contact with students who are aware of their personal power as agents of physiologic birth. Although student midwives are influenced by the attitudes of the midwives who serve as clinical preceptors,¹³ midwives may also benefit from role models in developing their own feelings of competency for physiologic birth. However, reflecting on this approach, the development of a parallel intervention for midwife preceptors is something that should be the focus of further research.

Conclusion

For midwives to fulfil their role as guardians of physiologic birth in settings that are increasingly technocratic, midwifery education must focus on developing midwifery education that prepares professionals for this role. The stakeholder input generated in this RP design methodology suggests that a focus on reflective practice and debate and discussion skills linked specifically to optimality in birth is central to efforts to develop professionals who are strong advocates for healthy physiologic birth.

Conflict of interest

The authors have no conflicts of interest to disclose.

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