

🏆 **BEST IN CATEGORY PRIZE: HEALTH SERVICES DELIVERY**

TEACHING EFFECTIVE PELVIC FLOOR MUSCLE EXERCISES IN ANTENATAL CARE: DESIGN AND DEVELOPMENT OF A TRAINING PACKAGE FOR COMMUNITY MIDWIVES IN THE UNITED KINGDOM.

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HYPOTHESIS / AIMS OF STUDY

Urinary incontinence (UI) is common in women during childbearing years, onset of UI for many women occurs postpartum, but may also commence during pregnancy. Evidence suggests antenatal pelvic floor muscle exercise (PFME) is effective for preventing UI during and after pregnancy in women with no previous symptoms [1]. However, midwives lack access to adequate training to support implementation of PFME in antenatal care [2]. The study aim was to develop a comprehensive training package for midwives and resources for pregnant women to support teaching of PFME within the antenatal care pathway to be evaluated in a feasibility and pilot randomised controlled trial (RCT). This study is being reported for the first time, it is part of the six-year research programme leading up to the RCT.

STUDY DESIGN, MATERIALS AND METHODS

The study comprised four iterative phases of intervention development, including a stakeholder event and multiple patient and public involvement and engagement (PPIE) activities. The PPIE advisory group included mums with young children, with meetings held in the community.

Phase 1: focus groups with women and midwives

Women who were pregnant or had given birth within the previous 12 months, and midwives providing antenatal care were invited to take part in separate focus groups in three sites (small city, inner city and rural town) in England. Data were analysed using thematic analysis.

Phase 2: development of a training programme including intervention mapping

Data from phase 1 and from previous studies in this research programme were mapped to the Behaviour Change Wheel (BCW) informed by the Capability-Opportunity-Motivation and Behavioural Skill (COM-B) model, Theoretical Domains Framework and Behaviour Change Technique (BCT) taxonomy (v1) and used to develop the intervention. Extensive input from PPIE and stakeholder consultations included PPIE advisors trying out mobile phone Apps to support PFME and stakeholders considering training needs and service provision.

Phase 3: practice training event

A member of the research team delivered the draft training package in person to a cohort of midwives. Midwives rated their confidence before and after training regarding pelvic floor knowledge and teaching PFME using a 5-point Likert questionnaire (0 = not at all confident, 4 = completely confident) designed for the study. After training, participants were asked to provide feedback on intervention format, content and methods of delivery in one of two discussion sessions. Participants completed an anonymous evaluation questionnaire with options to rate the training and provide free text comments.

Phase 4: intervention refinement

Findings from Phase 3 and further PPIE helped refine format and content of the intervention package. Additional refinements, made in response to the COVID-19 pandemic, enabled online intervention training delivery as in person meetings were not permitted.

RESULTS

In Phase 1, 12 women (age range: 20-44 years; education range: secondary education to postgraduate degree; ethnicity: white (n = 11), multiple ethnicity (n = 1)) and 14 midwives (age range: 25-59 years; range of experience in midwifery: 3-32 years) took part in six focus groups. The practice training in Phase 3 was attended by 18 midwives (age range: 25-60 years; range of experience in midwifery: 2-20 years). Of the 32 midwives who took part in Phases 1 and 3 of the study, eight (25%) did not provide data regarding previous PFME training, 13 (41%) reported no previous PFME training (formal or informal), two (6%) had attended specific pelvic floor rehabilitation courses, and the remaining nine (28%) reported varying amounts of training from various sources.

Data from Phase 1 and previous research in this programme were mapped onto the BCW, and ideas for possible intervention content and BCTs were discussed by the research team. This resulted in the first iteration of the intervention. Intervention materials included a midwife training programme and resources for midwives to support PFME implementation, and a package of resources for women to be given out by midwives during the antenatal booking appointment.

The training programme for midwives included five steps for putting PFME into antenatal clinical practice: 1. Raise the topic of PFME early in pregnancy; 2. Screen for UI at each appointment; 3. Teach PFME at 16 weeks gestation; and throughout pregnancy 4. Prompt/remind women about how to perform PFME and 5. Refresh women's understanding about PFME and refer on to specialist services if required. Midwives were provided with a training handbook containing session slides, summary leaflets and additional resources about PFME and UI.

Resources for women, co-developed with PPIE advisors, included a bag provided at the antenatal booking appointment. The bag contained a leaflet with information about PFME and how to perform a correct pelvic floor muscle contraction, stickers to use as prompts/reminders for PFME, and an app decision card, with QR code, with details of three high-rated smart phone apps chosen by PPIE advisors to support PFME.

Evaluation scores indicated that midwives participating in the practice training event (n = 18) found it useful, with positive ratings for content and delivery. Post-training qualitative feedback noted that midwives recognised the importance of taking the lead regarding PFME, but lack of time, confidence, and skills to raise the issue presented challenges for implementing PFME in practice. Following training, participants reported an increase in total confidence relating to PFME from 2.70 (range 1.18 to 3.50) before training to 3.68 (range 3.37 to 4.00) after training, indicating potential for the training programme to address some of these challenges.

Practice training event participants raised additional considerations for implementation of PFME, including:

- Time constraints of antenatal appointments
- Information overload for women in this phase of their maternity care
- Concerns regarding continuity of care
- Importance of establishing PFME champions within midwifery teams
- Need for buy-in from senior midwives / clinical managers to support implementation and delivery

Intervention materials and content were modified and refined by the research team and PPIE advisory group in response to feedback from the practice training event, for examples: including anatomy refresher and more detail on muscle training physiology; to package resources for women in a cloth bag big enough to hold a clean nappy. A trainer manual was developed to support fidelity of training delivery. Additional training and resources were developed to support a PFME champion role. Further modifications were made at the onset of the COVID-19 pandemic to enable training delivery via Zoom online virtual platform, and to support midwives to deliver intervention elements via telephone appointments.

INTERPRETATION OF RESULTS

Despite challenges identified by midwives regarding wider system pressures [3], past difficulty accessing training, and time constraints within clinic appointments, midwives and women believed that implementing PFME in the antenatal care pathway would be beneficial for large numbers of women. This study aimed to ensure that whatever was asked of women and midwives for implementing PFME was evidence based, with sound theoretical underpinnings and consensus acceptance from experts and lay members of the public. We benefitted from working closely with the PPIE advisors and drew upon known BCTs throughout the four developmental phases to develop a comprehensive understanding of the needs of midwives, women and stakeholders within the current organisational context. The BCW and COM-B helped us to identify how these could be brought together into a training package for midwives and resources for supporting women to address these needs.

CONCLUDING MESSAGE

After extensive iterative refinements of the training package and resources the success of this approach to development is now being tested in the feasibility and pilot RCT.

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