Midwives' perceptions of the Hegenberger Retractor for perineal repair following online clinical training: a mixed methods study

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ORIGINAL

Introduction

Perineal trauma following a vaginal birth affects around 350,000 women in the United Kingdom (UK), of which approximately 70 per cent will require suturing (Kettle et al 2002, Thiagamoorthy et al 2014). If perineal trauma is misdiagnosed, misclassified and inadequately repaired, as described in the NHS Litigation Authority (NHSLA) report (NHSLA 2012), it can lead to lifelong consequences such as incontinence of faeces and/or flatus, chronic perineal pain, rectovaginal fistula, colostomy as well as sexual and psychological sequelae.

Studies have also shown poor repair can have negative emotional or psychological impacts on: experiences of labour and birth (Lindgren et al 2011); breastfeeding (Priddis et al 2014); bonding with the child (Bick et al (2019); emotional recovery following birth (Shoorab et al 2019); and represents a neglected aspect of postnatal care. Consequently, improved techniques for facilitating diagnosis, classification and repair are urgently needed to support established national initiatives, such as the Maternity Perineal Assessment and Repair Longitudinal Study (PEARLS) training package (Ismail et al 2013), National Institute for Health and Care Excellence (NICE) guidelines for intrapartum care (NICE 2017) and the Royal College of Obstetricians and Gynaecologists (RCOG) Obstetric Anal Sphincter Injuries (OASIs) Green Top guideline (RCOG 2018).

Midwives are on the frontline when it comes to preventing, diagnosing and repairing childbirth-related perineal injuries. However, in line with European standards for midwifery (Keighley 2009), the Nursing and Midwifery Council (NMC) does not require student midwives to demonstrate clinical competency in perineal repair at the point of registration (NMC 2009). This is further compounded by post-registration preceptorship, which usually includes perineal trauma diagnosis, repair, training and assessment, but is not a statutory requirement (NMC 2006). This has resulted in considerable variation in competence of perineal assessment, management and repair techniques which affects midwives' confidence in their post-registration careers (Hunter & Bick 2019).

Midwives' perceptions of undertaking perineal assessment and repair

Midwives routinely assess, classify and suture most perineal trauma following childbirth, with escalation of suspected third- or fourth-degree tears (also known as OASIs) to the obstetrician (NICE 2017). This practice, although firmly within the midwife's role and realm of 'normality', can leave midwives vulnerable to erroneously misdiagnosing OASIs as first- or second-degree tears as reported by NHSLA (NHSLA 2018). This is perpetuated by visual and digital examination being the most common methods to assess and classify trauma (Jaiyesimi 2007) which has been shown to be vulnerable to misclassification and misdiagnosis (Groom & Paterson-Brown 2002, Morris et al 2013).

A systematic review by Scandinavian research group Morris et al (2013) found self-reported 'inadequate' knowledge of pelvic floor anatomy in 62 per cent of clinicians (Cornet et al 2012) and poor anatomical knowledge of the key muscles which need to be repaired during suturing (Sultan & Thakar 2005). In relation to classification, the literature shows that many clinicians classified perineal tears incorrectly (Fernando et al 2002, Andrews et al 2005, Sultan & Thakar 2005, Mutema 2007) with regional difference in the misclassification rates.

In the UK, midwives' perceptions of knowledge showed that 34.3 per cent felt confident in assessing perineal trauma 'all the time', 55 per cent 'most of the time' and 10.7 per cent 'some of the time'. This, together with 42.4 per cent performing rectal examination during assessment of trauma 'all the time', 13.1 per cent 'most of the time', 27.2 per cent 'some of the time' and 17.3 per cent 'never' (Bick et al 2012) further increases the odds of misdiagnosing OASIs as routine first- or second-degree tears, leading to litigation claims citing clinical negligence (NHSLA 2018).

These findings are further supported by a prospective study of UK midwives (n=592) which found that, although 87.2 per cent believed midwives should routinely repair second-degree tears (the most common type of perineal trauma in maternity), only 63.5 per cent felt competent to undertake such a repair — and just 38.5 per cent felt their training was adequate (Selo-Ojeme et al 2015).

This insecurity creates a source of anxiety among midwives (Campbell 2016), particularly for early-career midwives with less than five years post-qualification experience. Hunter & Bick (2019) showed that early-career midwives, with less than five years post-qualification experience, found pre-registration training poor preparation for practice due to low priority on the curriculum, while post-qualification preceptorship programmes often did not meet their needs or expectations. Although further training and support was desired, protected time for learning and maintenance of skills and confidence was often overshadowed by clinical priorities. Together, this resulted in a significant theory–practice gap, leading to perceptions of suturing practice being 'surgical' and therefore outside the realm of midwifery practice. This was also noted by Campbell (2016) who found midwives had difficulty handling suturing instruments.

This significantly hinders midwives from following evidence-based guidelines set up in the Maternity PEARLS, ROCG and NICE guidelines, all of which stipulate the use of surgical instruments as best practice.

These findings create a strong argument for improved focus on the assessment and repair of the most common perineal injuries (first- and second-degree tears and episiotomies) that the majority of women suffer following vaginal birth. Evidence shows that attendance at training workshops, particularly hands-on sessions, significantly increases the use of recommended best practice, which includes use of surgical instruments for repair (Selo-Ojeme et al 2009, Wilson 2012) with potential to reduce risk of clinical negligence claims and needlestick injury (NHSLA 2018).

Effectiveness of current educational programmes in perineal repair for midwives

A systematic review of midwives undertaking perineal trauma assessment and repair educational workshops showed improvement in competency, classification, knowledge, diagnosis, assessment and repair as well as confidence to use recommended evidence-based techniques ($p<0.05$) (Diaz et al 2021). No statistical difference was seen between one- or two-day workshops on study outcomes, skills or knowledge which appeared to be retained for up to six months post-intervention (Diaz et al 2021).

Bridging the gap between theory and clinical practice

Despite midwives demanding an overhaul in pre- and post-registration perineal repair training to tackle their educational and continuous professional development needs, there is no nationally accredited standard, leaving considerable variation in access and availability of such educational interventions. Any future educational interventions require active engagement of key stakeholders (frontline midwives), to tailor quality improvement initiatives ensuring they are fit for purpose (Bick et al 2011).

To input into any future suturing interventions, this study aimed to investigate midwives' perceptions of the Hegenberger Retractor for perineal repair (Figure 1), which allows for increased visibility and accessibility to the trauma area being sutured.

Figure 1. The Hegenberger Retractor



The Hegenberger Retractor has previously been evaluated in Scandinavia (location of its inception and initial clinical use), with findings showing a positive improvement in clinicians' visualisation, accessibility and aides' practice of evidence-based technique as per clinical guidelines (Kozlyk 2022).

Further research is needed to investigate midwives' perceptions of clinical or service need, to inform quality improvement initiatives to implement the Hegenberger Retractor into formal perineal trauma training and clinical practice.

Methods

Research aims

To investigate midwives' perceptions of the Hegenberger Retractor for perineal repair following online clinical training.

Hypotheses

Null hypothesis: the Hegenberger Retractor is negatively perceived by midwives in relation to perineal suturing.

Alternative hypothesis: the Hegenberger Retractor is positively perceived by midwives in relation to perineal suturing.

Primary outcomes

1. Initial reaction
2. Appeal
3. Uniqueness
4. Relevance to practice
5. Likelihood of use.

Secondary outcomes

1. Understanding the perceived benefits of the retractor
2. Understanding the perceived limitations of the retractor.

Training format

A formal training package was delivered remotely via a live weekly webinar facilitated by co-author and inventor MH. This training was composed of sections relating to maternal positioning for perineal suturing, analgesia and correct use of the Hegenberger Retractor to improve visualisation, accessibility and systematic examination and repair.

This training was not aimed at teaching participants how to perform a perineal suturing technique, but rather to support existing learning initiatives delivered via the Maternity PEARLS, RCOG and NICE guidelines to facilitate the use of both hands to hold surgical instruments with safeguarding against needlestick injuries.

Study period

This study took place between April 2021 and July 2022 (total of 15 months).

Sample size

During the study period, 1644 potential participants signed up to the clinical training webinar. Of these 1644, 893 participants (54.3%) went on to attend the webinars and 490 (54.9%) consented to participate in the questionnaire. One hundred and sixty-eight student midwives were excluded from the data analysis as they did not have practice-based suturing experience, resulting in a sample of 322 qualified midwives.

Sampling

The target population was practising, qualified midwives. This ensured that participants forming the achieved sample were representative of the target population, had received some previous perineal repair training, were aware of national initiatives and clinical guidelines and had performed perineal repair at some point during their careers.

A snowballing approach was used to make up the achieved sample; training was disseminated through direct communication with senior midwives in the NHS and private hospitals around the UK. Potential attendees signed up to the webinar and disseminated information to colleagues in their hospitals. This was further encouraged through social media campaigns. None of the target population had formal training on the Hegenberger Retractor prior to the training session. Clinicians who formed the achieved sample were approached by the researcher at the end of the training session and offered the chance to take part in the study.

Design

A mixed-method design was employed to answer the research question, using a self-administered questionnaire comprised of a quantitative element: a modified five-point Likert-type scale with five questions, and a qualitative element: two open-ended questions.

The modified Likert-type scale items were generated using Qualtrics Systems software to address primary research outcomes and edited, following review by an expert panel, to ensure content validity and rigour on construction of the scale. The open-ended questions aimed to generate rich free-text responses for thematic analysis in relation to the secondary research outcomes.

Data collection

Immediately upon training webinar completion, participants self-administered a questionnaire via an anonymous online link, to remove the influence of the researcher or any discussion with colleagues which could have influenced the validity of the results. Completed questionnaires were recorded within the Qualtrics Systems software and stored for analysis until the end of the study. Submission was anonymous to protect the confidentiality of participants.

Data analysis

Quantitative data from the modified Likert-type questionnaire were imported into Stata/MP (version 16) for quantitative data analysis to tabulate and produce the tables and figures included in this study.

Qualitative data from open-ended questions were imported into NVivo (version 12) qualitative data analysis software. This allowed for thematic analysis based on Braun & Clarke's six-step inductive method (Braun et al 2019) to systematically code the entire dataset, identify and group emerging features of the data and generate emerging themes. These were then further refined and grouped into sub-themes which were reflective of the whole dataset. Coded transcripts and collated themes were checked by, and discussed with, the research team to resolve any disagreements through discussion.

Ethical considerations

Consent was sought from individual participants by the webinar host, as well as the researcher, prior to completion of the questionnaire. The device has a CE mark and can be implemented into clinical practice on this basis. This study had no external funding.

Results

A description of the participants in the achieved sample is displayed in Figure 2. The 322 participants were made up of 241 (74.9%) qualified, practising NHS midwives within the UK, 44 (13.7%) midwives working outside the NHS in Europe, Africa, the United States (US), Canada, United Arab Emirates (UAE), Australia and New Zealand and 37 (11.5%) academic midwives representing UK, US, Australian and New Zealand-based higher education institutions.

Quantitative analysis

The quantitative section of this study was made up of five key questions: initial reaction; appeal; uniqueness; relevance to practice; likely usage.

Initial reaction

Of the participants, 228 (70%) were extremely positive, 84 (27%) were somewhat positive, 11 (3%) were neither positive nor negative and none were somewhat negative or extremely negative about the Hegenberger Retractor

Appeal

Of the participants, 144 (45.2%) ranked the Hegenberger Retractor as extremely appealing to use, 140 (43.8%) ranked it as very appealing, 36 (9.9%) ranked it as somewhat appealing, two (0.6%) ranked it as a little appealing and none ranked it as not appealing at all.

Uniqueness to clinical practice

Of the participants, 161 (50%) ranked it as extremely unique to practice, 137 (42.5%) ranked it as very unique, 23 (7.1%) ranked it as somewhat unique and one (0.4%) ranked it as a little unique.

Relevance to clinical practice

Of the participants, 231 (71.6%) ranked it as extremely relevant, 87 (27.0%) ranked it as moderately relevant, five (1.5%) ranked it as neither relevant nor irrelevant and none ranked it as moderately or extremely irrelevant.

Likely usage

The final question asked participants to indicate how likely they were to use the Hegenberger Retractor if available in their workplaces. Figure 3 shows the frequency of responses from the Likert scale by participants in this study.

Figure 2. Bar chart of participants included in the study

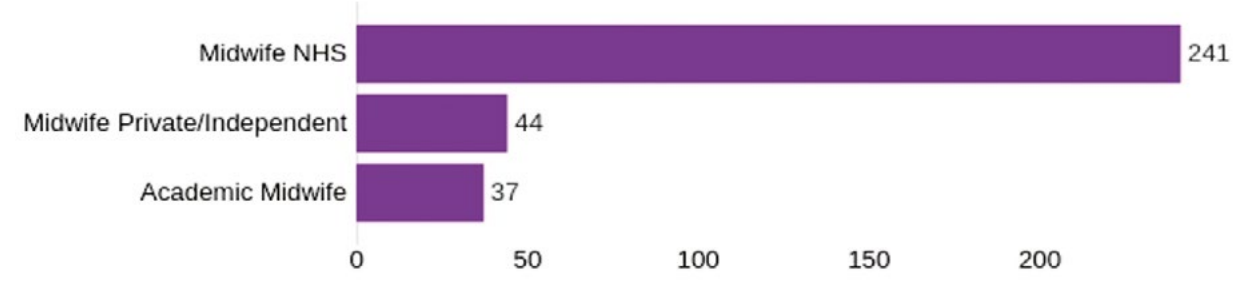
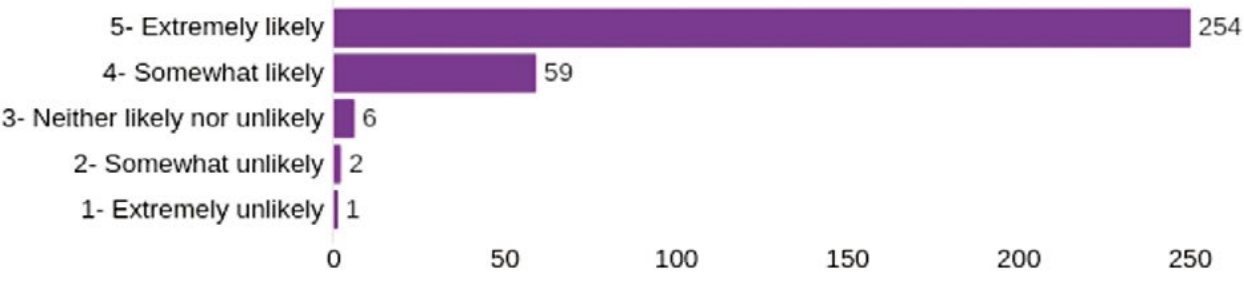


Figure 3. Bar chart ranking for likelihood of use



To calculate the summary score for each question, each answer on the five-point modified Likert-type scale was attributed a numerical value which was tabulated to give a final score. For example, extremely positive/appealing/unique/relevant/likely to use were given a value of five each while extremely negative/ unappealing/not unique/ irrelevant and unlikely to use were given a value of one each.

For each question, the sum of each value was added together and divided by the total number of participants (n=322) to give a final score, presented in Table 1.

Table 1. Scoring from the modified Likert-type scale

Question	Numerical total	Final score
1. Initial response	1509	4.68
2. Appeal	1390	4.32
3. Uniqueness	1424	4.42
4. Relevance	1514	4.7
5. Service need	1509	4.69
		Median score: 4.56 out of 5

Overall, these findings show that each of the five elements were approved by the participants, with a median score of 4.56 out of 5. To further explore the slight variations in final scores, as well as gain an understanding for the few neutral or negative responses, we undertook a qualitative analysis as outlined below.

Qualitative analysis

Two superordinate themes emerged from the analytical process, with each theme containing four constituent themes. The first theme, 'benefits', relayed midwives' perceived benefits of the Hegenberger Retractor, including the constituent themes of exposure, hands-free element, safety and repair. The second theme, 'limitations', reflected midwives' perceived limitations of the device, including maternal pain and discomfort, usage, clinical acceptance and manufactured material. Each theme is presented below with sub-themes ordered by most-to-least coded frequency.

Theme 1: Benefits

1. Exposure

Visualisation

Visualisation was the most frequently coded benefit of the Hegenberger Retractor. Participants responded 'good', 'excellent', 'better', 'more', 'clear' and 'improved' visualisation of both the trauma and the anatomy that needed to be repaired. This improvement in visualisation led to reports of clinicians being better able to see what they were doing as the tissue was retracted throughout the duration of repair.

Accessibility

Participants perceived that the Hegenberger Retractor 'solves the problem of access', 'opens up the suturing area' and 'keeps the area retracted in a self-retaining way'. Participants also thought that it 'will not get in the way of suturing'.

Autonomous practice

As a result of the above visualisation and access, participants reported that the Hegenberger Retractor would promote autonomous practice for the clinician by enabling 'work without someone else to help' or 'without needing further assistance' — a limitation in current practice.

Simplicity of use

Participants viewed the Hegenberger Retractor as 'easy', 'clear', 'straightforward', 'intuitive', 'simple' to use, due to its 'innovative' and 'user-friendly design that fits the shape of the birth canal'.

2. Hands free

Use of both hands

Having 'both hands free', 'two hands free', 'hands-free element/concept/suturing' and not having to 'use hands/fingers when suturing' or 'holding tissue open' was the second most frequently coded text.

Ergonomics

Participants reported that the 'user friendly design' was 'convenient' and 'practical' to promote 'ergonomics in the workplace' and 'avoiding bad positions/postures' that come with repeated tissue manipulation during the suturing process.

3. Safety

Reduced risk of needlestick

Participants perceived the retractor to carry a reduced risk of needlestick injury due to 'not inserting fingers' into the birth canal and 'increased safety' in relation to working conditions for staff. Suggestions of 'reduced infection' due to prevention of needlestick injury was also a perceived benefit of the Hegenberger Retractor, and compliance with infection control in terms of reducing exposure of staff to needlestick injuries.

Responses also highlighted the increased safety of autonomous suturing at home with the Hegenberger Retractor where suboptimal suturing conditions exist.

Reduced swabbing

Participants responded that a reduction in 'tissue touching/handling/swabbing' during the procedure was beneficial in perceived 'reduction in tissue damage and oedema'.

Identification of cause of tear-related PPH

Participants reported that the Hegenberger Retractor may be useful in cases of postpartum haemorrhage caused by perineal tears, as this may allow the repair to be identified more quickly and to start treatment sooner to improve outcomes for the woman.

Reduced time

Participants reported that the Hegenberger Retractor may lead to a 'quicker repair' and fewer interruptions due to 'reduced swabbing' or 're-finding of the tear'.

Obese patients

Participants reported that the Hegenberger Retractor may be 'good for raised BMI' patients where the anatomy is more difficult to manually retract and further hinders grading, diagnosis and repair in current practice.

4. Repair

Anatomy

Participants perceived that the Hegenberger Retractor may allow for the 'identification' and 'following of the anatomy/perineal structure' during the suturing procedure by enhancing the visibility of how these key muscle groups align.

Classification and grading

Participants perceived that the Hegenberger Retractor may provide 'good access to assess trauma', leading to 'easier repair' and 'less likely to misdiagnose grade of trauma'.

Repair technique

Participants perceived that the Hegenberger Retractor provides a 'more effective/efficient two-handed suturing technique' which 'supports taught technique' and promotes an 'easier to treat/suture repair' which is 'less likely to be ineffective'.

Women's outcomes

Participants responded that the Hegenberger Retractor has the potential to provide 'benefits for women' and 'better outcomes' as it 'supports women's sexual health'.

Severe tears

Respondents felt that the Hegenberger Retractor would be 'helpful/handy' for 'complex tears', such as OASIs, or for 'more than one tear' in the same patient.

Theme 2: Limitation

1. Maternal pain or discomfort

Pain

Pain was the most frequently coded limitation of the Hegenberger Retractor. The perceived pain the woman will endure during usage led to some respondents being worried that the woman may decline the retractor.

Discomfort

'Discomfort' was also raised as a potential concern, with respondents worried about the 'uncomfortable' and 'invasive' nature of the device.

2. Usage

Insertion

Insertion of the retractor was another area of concern for respondents, who linked this with being 'painful after giving birth' and would 'need practice/training' to ensure it is used properly and 'does not fall out' or 'make the woman more uncomfortable'.

There was an awareness about 'adequacy of analgesia' to ensure women are comfortable during insertion. Other respondents acknowledged that the insertion is 'like a speculum' and 'not more uncomfortable' than repeated 'insertion of fingers/hands into vagina' as per current practice.

Removal

As above, removal was similarly evaluated as being potentially 'painful for the woman' and the 'need for practice' to ensure smooth and efficient removal without further discomfort to the woman.

Need for training

Participants reported the strong need for training and support to prevent 'further damage' during usage. There was a perceived 'lack of support' from within their own hospitals to carry this out effectively. Participants felt 'needing practice' and 'taking a few times to become confident' as it 'may be difficult at the beginning' due to the concept being brand new to practice was important.

Some concerns were also raised about the suitability of this for lone practitioners, who are not exposed to colleagues and sharing experiences to support each other in the use of the device.

Size

The 'one size fits all' design of the retractor was raised as being potentially 'too big for Asian and petite women' by the respondents.

Pressure of stitches

One response related to the potential of the Hegenberger Retractor to 'over-stretch' the stitches or trauma, which could lead to poor outcomes for the patient.

3. Clinician acceptance

Acceptance

Participants responded that acceptance may be 'controversial with senior' staff but no elaboration

as to why was provided. 'Organisational approval barriers', 'need a learning curve' and 'motivation for management to see the need for change' were more comments in relation to potential acceptance issues by the maternity units of this new device.

Cost

Cost was another potential barrier, with respondents citing the price as an additional cost for which maternity units would need to secure funding and that may be unaffordable for 'independent midwives' who buy their own equipment.

Evidence

During the data collection period of this study, there was no published data evaluating the retractor and so, at that time, concern was raised about a new product with 'no evidence-base' or 'patient feedback data'. This has subsequently changed with emerging publications.

Single-use plastic

Participants reported that 'single use plastic' which is 'not disposable/sterilisable/biodegradable' is a limitation of the device and reduced the appeal of use.

Discussion

This study addresses some key areas of future research identified in previous work (Kozlyk 2022) by measuring midwives' perceptions and service need of the Hegenberger Retractor following clinical training.

Overall, the quantitative results show that the retractor is positively perceived by midwives. This is in line with our previous work in Scandinavia: clinicians who used the device during clinical practice made positive reflections on increasing visualisation and accessibility of trauma and aiding in the implementation of evidence-based perineal repair and teaching (Kozlyk 2022).

However, thematic analysis also revealed midwives' perceptions that the retractor may be painful or uncomfortable for women. A study by Steen (2008) describes perineal pain as a personal experience, with great variance between individuals, making it impossible for a person to truly understand what another person's pain feels like. This is a concern if the woman has inadequate pain relief for suturing, their pain is normalised, or they are not feeling heard by the health care professional (Briscoe et al 2015).

The training programme in this study emphasises that adequate pain relief, in the form of local intramuscular lidocaine infiltration, should be provided to the woman and tested for effectiveness before use of the retractor in order to minimise any pain or discomfort the women may experience.

The UK-based PRAISE study (n=40) measured perineal pain and anxiety during routine second-degree tear repair with findings showing that pain and associated anxiety may still be apparent for some women, despite seemingly adequate analgesia, and that this was further perpetuated by the manner in which health care professionals acknowledged the woman's pain and communication style during the procedure (Briscoe et al 2015).

A partnership style of communication, where both the woman and clinician share their expectations and responsibility for pain management in a conversational style, showed a positive difference to pain scores. Together with effective analgesia administration, this is a proposed solution to address concerns around pain or discomfort associated with use of the retractor.

An area for future research could be comparison of pain or discomfort using the Hegenberger Retractor with standard practice, which involves continuous digital manipulation.

In relation to usage of device, limitations around positioning, insertion and removal centred around training needs. As a result, the training programme in this study has been adapted to focus on these core actions and a CPD accredited certificate programme follows with an 80 per cent pass mark in order to obtain a competency certificate.

To encourage clinical acceptance, a stakeholder investment into the rationale for quality improvement initiatives is vital to overcoming any organisational barriers that may come with change being disruptive to practice.

To address concern over single-use plastic material, the Hegenberger Retractor is manufactured from polystyrene plastic, similar to other vaginal speculums currently on the market. The reason for not using metal (which can be sterilised and re-used) is that achieving the flexibility required for the retractor to collapse and expand during use would require a thinness of material that will be fragile and prone to breakage if too much tension is applied. This is a safety hazard which is not present with the current material. Continuous innovation in the field of medical engineering suggests there may be an eco-friendlier material suitable for use in the future.

Strengths and limitations

This study used an online questionnaire compliant with GDPR to capture data remotely which otherwise would have been difficult to collect during a study period which included lockdowns and pandemic restrictions. This design also allowed for participants to be included from multiple countries, providing a richer source of data, heterogenicity and increased generalisability outside the UK.

The skewedness in participant background towards NHS midwives (74.9%, n=322/n=241) was sufficiently large for generalisability and capture of

reliable evidence to support quality improvement initiatives to be implemented in UK maternity units. However, the clinical experience within this group was not further explored nor directly measured, including the number of perineal repairs previously completed, which does not allow for cross-analysis of perceptions based on seniority or experience of clinician.

The mixed-methods design was employed to draw on the strengths and perspectives of both quantitative and qualitative methods (Östlund et al 2011). A parallel design was used to enhance the validity of the quantitative questionnaire with qualitative open-ended questions, by developing rich and illuminating data, adding to the growing body of evidence around midwives' perceptions of confidence and competence in perineal repair. This design also aids exploration of quantitative findings by putting them into context and providing a more in-depth understanding of the context in which the responses were made; providing a completeness of insight into different aspects of the same phenomenon (Parahoo 2014).

This study employed a modified Likert-type scale (Parahoo 2014), moving away from the standard 'agree' and 'disagree' responses to include statements that the researchers believe better represent the concept being measured. This design allows the gauging of attitudes among groups of people in a relatively short time, cheaply and systematically.

A limitation of this design is that total scores, which result as the sum of a combination of the scores of individual items, do not reflect the strength in agreement with individual scores (Parahoo 2014). For this reason, we employed the modified Likert-type scale and presented results as the sum of individual items, as well as with a final score, to highlight the subtle differences in scores between the five questions.

A five-point, rather than seven-point, modified Likert-type scale was used to ask questions in direct relation to the primary research aims and to avoid respondent burden/frustration/question fatigue. It may also be less confusing and simpler to select a response. To that effect, we believe the questions were valid in addressing the research question and adequately represented different attributes.

To control for memory distortion/gaps and selective memory, participants were asked to complete the questionnaires immediately after the training session. To further ensure validity of results, questionnaires were self-administered online in order to remove the influence of the researcher. However, we could not control the environment in which participants were viewing the training and undertaking the questionnaire, where situations of colleagues conferring about responses could influence the results.

Implications for future research

Future work is required to quantify the perceived benefits and limitations reported in this study once trained clinicians have performed perineal repair in clinical practice. Research on patients' experiences and outcomes is also vital to understand how the device could potentially benefit women's experience of perineal repair, as well as the short- and long-term physical, psychological and sexual health benefits.

Conclusion

The Hegenberger Retractor was positively perceived by midwives as an appealing, unique and clinically relevant device with a high likelihood of uptake in use if available in the clinical environment to facilitate postpartum perineal repair.

Midwives perceived that the particular benefits of the device to improve exposure, allow hands-free work and improve safety and support repair were attractive. Potential maternal discomfort, the need for clinical training and practice on usage and acceptance in the workplace, as well as single-use plastic material, were perceived limitations of the device.

Further research is needed to quantify reported perceived benefits and limitations following clinical use in practice from both the clinicians' and women's perspective.

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