Identifying the factors that influence midwives' perineal practice at the time of birth in the United Kingdom.

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Author contributions

Sara Stride: Conceptualization, Methodology, Validation, Funding acquisition ,Formal analysis, Investigation, Resources, Data Analysis, Data writing original draft. **Vanora A. Hundley:** Conceptualisation, Methodology, Validation, Formal analysis, Visualization, Writing review and editing. **Susan Way:** Conceptulaization, Validation, Supervision, Writing review and editing. **Zoë A Sheppard:** Methodology, Software, Validation.

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Abstract

Objective
The Obstetric Anal Sphincter Injuries (OASI) Care Bundle is designed to reduce the incidence of obstetric anal sphincter injuries. However, introducing behavioural change requires an understanding of current practice. This study aims to establish midwives practise at the time of birth, and the factors that influence this.

Design
Quantitative research - a national online survey.

Setting
Nationwide - United Kingdom (UK).

Participants
563 midwives from across the UK.

Methods
An online survey of midwives' practice. Midwives were invited to participate through the Supervisor of Midwives network. Consent was sought on the landing page. Data analysis using descriptive and inferential statistics, with sub group analyses were used to explore variations in practice.

Measurements
Number of midwives using "hands on" the perineum and the influences on midwives' perineal practice at the time of birth.

Findings
Most midwives preferred to use "hands on" the perineum at the time of birth (61.4%). "Hands on" practise was significantly associated with where midwives worked ($p<0.001$), risk factors for OASI ($p<0.001$), and the approach that they were taught in their midwifery training ($p<0.01$). Midwives expressed lack of confidence in some areas with a third unsure that they could identify the third degree tear category b (38.2%) or c (34.3%).

Key Conclusions
There has been a growth in the number of midwives using "hands on" at the time of birth but midwives feel that they require additional training in regards to identifying an OASI. The study should be repeated following the roll out of the OASI care bundle, to identify its impact on midwives' perineal practice.

Implications for practice: The study identified that there needs to be an improvement in the recognition of OASI by midwives, and in future repeating the study would identify whether the OASI care bundle has influenced midwives' practice.

Keywords
Midwives' perineal practice, "hands on", United Kingdom, online survey, obstetric injury.

Tweetable abstract
A study to identify the factors that influence midwives' perineal practice at the time of birth in the UK.

Introduction

It has been identified that over 90% of primiparous women, and 70% of multiparous women sustain some form of perineal trauma including tears at the time of birth (Smith et al 2013). However it is the noticeable increase in the rate of third and fourth degree tears known as obstetric anal sphincter injuries (OASI), from 1.8% in 2000 to 5.9% in 2012 (RCOG 2015) that is a cause for concern. Although the reason for this rise is poorly understood it could be attributed to an increased detection of OASI (Gurol-Urganci et al 2013) and reporting (Baghurst 2013, Ampt et al (2013).

Third and fourth degree tears are associated with long term physical health consequences for women such as pain, discomfort, and an increased risk of anal incontinence (RCOG 2015). Women who experience such tears are also more likely to report psychological issues (Way 2012). Whilst some women may have long term bowel problems which can have a devastating impact on a women's quality of life (Lawrence et al 2016). Having an OASI injury can also affect subsequent vaginal birth, as the risk of repeat injury is four times more likely (Woolner et al 2019); with some women being advised to have an elective caesarean section to avoid the risk of another OASI (Webb et al 2017).

A variety of risk factors have been associated with OASI such as maternal age and weight (RCOG 2015, Gurol-Urganci et al 2013), prolonged second stage of labour (Samarasekera et al 2009), being a primigravida, having a fetus in the occipito posterior position at the time of birth (Aukee et al 2006), or experiencing an instrumental delivery (Simic et al 2017) However, these factors do not explain the varying rates of trauma reported in different maternity units or geographical areas (Simic et al 2017). Interest is therefore focusing on variations in practice and whether a standardised method of care could improve outcomes.

In the UK a national quality improvement project to reduce the incidence of OASI, using the OASI Care Bundle (RCOG 2017, Bidwell 2018) has been reported on. A key component is the use of "hands on" where midwives place their fingers on the advancing fetal head and support the perineum with the other hand. Previous research suggests that this approach has not been common practice in the UK (Trochez et al 2011). National guidelines currently recommend that the decision whether to use a "hands on" approach is left to the midwife to discuss with the woman (NICE 2017), this may have contributed to the variety of practice between practitioners and maternity settings.

The Updating the Understanding of Perineal Practice (UUPP) study was undertaken prior to the pilot of the OASI care bundle (RCOG 2017) and was designed to update the current knowledge of perineal practice by midwives at the time of birth in the UK. This paper reports a survey that focuses specifically on midwives' practice regarding perineal protection, that is "hands on" or "hands off/poised", and the factors that influence this.

Methods

This was a UK-wide cross-sectional study of midwives' perineal practice. An anonymous online survey was used for ease of access to recruit participants, and is a cost – effective and now widely used method to collect data in research (Regmi et al 2016). The survey was hosted on a platform compliant with confidentiality laws (BOS 2016).

Sample and data collection

Registered midwives were invited to participate in the survey if they provided labour care to women in either hospital or community settings. An e-mail with detailed information about the survey which contained a link to the online data collection tool was distributed through the Supervisor of Midwives (SoM) network. At the time of the study SoM's were available in each maternity unit and gave guidance and support to midwives in practice helping them to develop their skills and expertise (NMC 2009).

The survey link was distributed to midwives via a named SoM who agreed to be the named contact for the study in their area of practice. The link was also circulated via conferences and social media.

Since the commencement of the study, changes to primary legislation has resulted in the removal of statutory supervision (NMC 2017).

Ethical Considerations

Ethical approval for the study was obtained from the local university's research ethics committee. HRA approval was sought but was deemed not to be required for the study.

Participants were asked to read the information on the survey landing page and to confirm their eligibility, understanding and consent prior to completing the survey

Questionnaire design

The questionnaire (Appendix 1) was designed to gather information relating to midwives' management of the woman's perineum at the time of birth. Multiple choice questions with options to provide additional comments to further explain some answers were included along with demographic information. Midwives were asked to identify whether they had been taught to use a "hands on" or "hands off/ poised" approach in their midwifery training, and whether this was the approach that they currently used in practice. If they used "hands on" midwives were asked where they placed their hands.

Midwives were then asked to identify which approach they might use in response to the presence of risk factors for OASI. Included in this section were questions from a previous survey in the UK that related to risk factors for OASI (Trochez et al 2011).

Midwives were asked if they were guided in their practice by NHS Trust policies and guidelines and whether they recorded the approach they used in the women's birth records. The survey also sought to find out if midwives knew how to identify the range of first to fourth degree tears and whether they felt confident in performing an episiotomy.

Data analysis

Data were analysed using descriptive and inferential statistics, after being imported into IBM Statistical Package for Social Sciences (SPSS) version 25 (IBM, Armonk, NY, IBM Corp). A probability value of 0.05 was used as a threshold to indicate statistical significance.

Findings

Demographics of the study population

A total of 563 midwives completed the survey, the majority of whom were trained in the UK (Table 1), with nearly two thirds working full time (59.9%). Most of the midwives provided labour care in an obstetric unit (82.6%), with a third (32.7%) providing labour care to woman at home.

The areas of work are the same as those included in the Birthplace Study and were therefore familiar terms to midwives (NPEU 2011). The length of time spent in midwifery practice ranged from less than 5 years to over 40 years (median =10, interquartile range [4, 20]).

Midwives knowledge of Obstetric Anal Sphincter Injuries and Episiotomy

The majority of midwives knew how to identify first and second degree tears, however confusion appeared to arise around categories b and c of third degree tears in particular (Table 2).

One of the components of the OASI care bundle is the ability to identify when an episiotomy is required and to be able to perform one. Nearly all the respondents (98.2%) had been taught how to perform an episiotomy, although only 41% midwives had performed an episiotomy in the 12 months prior to the survey. If they had not performed an episiotomy during this time, half (46.9%) of the midwives felt confident or very confident to do one if it was required (Table 2).

Current practice

Nearly two thirds of the midwives preferred to use “hands on” (341/555, 61.4%) when birth is progressing well with no evidence of fetal distress. The majority (73.7%) of the midwives using “hands on” place their hands on both the perineum and the fetal head (Table 3).

Of those using “hands on” the majority (80.9%) did so if they believed the perineum was about to tear, if the woman had a history of OASI (79.4%), or was a primigravida (60.9%) (Table 3). However some midwives using “hands off/poised” also moved to “hands on” if they believed the perineum was about to tear (27%), if the woman had a history of OASI (23.5) or was a primigravida (3.7%).

Influences on practice

Midwives’ practice was influenced by the approach adopted in the unit in which they worked and also how they were taught as students. Over half of the midwives (53.7%) that use “hands on” report that they were being encouraged to do so by their employer (Table 3). With some midwives (19.2%) using “hands off/poised” also reporting that they were now being encouraged to use “hands on” (Table 3). During the previous 12 months a small proportion (2.6%) of midwives had changed their practice due to maternity unit expectations.

Significantly more of those who currently practice “hands on” had been taught this during their midwifery training (Table 3). However only small numbers recorded the use of “hands on” (19.0%) in the birth records.

Just over half of the midwives using either approach had accessed their local guidelines, and very few documented which approach they used in the birth records (Table 3). Very few

midwives used warm compresses on the woman's perineum during the second stage of labour (Table 3).

Discussion

This is the most recent study to determine UK midwives' perineal practice at the time of birth. The timing of the study meant that data were collected before the OASI perineal care bundle (RCOG 2017) was introduced, providing a baseline of practice prior to the intervention. However this means that the midwives' practice in this study was being informed by the NICE guidelines (NICE 2017) rather than the OASI care bundle.

The findings suggest that the number of UK midwives now using "hands on" the perineum and the fetal head has doubled (61.4%) compared to a previous survey in 2014 by the Royal College of Midwives, which reported a figure of 31.4% (Munro and Jokinen 2014). Whilst evidence from practice regarding the flexion of the presenting part and its impact on perineal trauma is inconclusive (Aashim et al 2017). A study using a biomechanical simulator suggests that a "hands on" approach could lower the risk of perineal injuries by reducing tension on the perineum (Jansova et al 2014).

Studies from Norway have found that addressing variation in manual perineal protection and episiotomy has contributed to a noticeable drop in the rate of OASI (Laine et al 2012, Stedenfeld et al 2012). This has been the precursor to some maternity units in the UK introducing new guidance regarding perineal care with the aim of reducing the incidence of third and fourth degree perineal tears (Guy's and St Thomas' NHS Foundation Trust 2015). Our findings suggest this is appropriate, as significantly more midwives used a "hands on" approach if they were encouraged to do this where they worked (Table 3).

The main reason midwives gave for using "hands on" was if the perineum was about to tear; indeed a quarter of midwives using "hands poised/off" moved to "hands on" in response to this risk factor. This change is similar to studies reporting that some midwives change the approach they use during low risk births in response to clinical scenarios where women are at risk of OASI believing that this offers perineal protection (Ampt et al 2013, East et al 2015).

An episiotomy is sometimes discussed as a possible means of reducing the incidence of third and fourth degree tears (East et al 2015). The National Maternity and Perinatal Audit (RCOG 2018) reported that the rate of episiotomies in 2016 for spontaneous births was 8.5% and with instrumental births 85.5%. However, nearly two thirds of the midwives in our study had not performed an episiotomy in the last 12 months, only half of these midwives felt confident that they could do one if it were required.

Midwives have an individual impact on a woman's perineal health (Ott et al 2015) with the decision to perform an episiotomy being linked to clinical indicators such as a perineum not stretching, signs of fetal compromise or the midwife's sense of responsibility in trying to preserve the perineum (Smith et al 2017). Other studies suggest that the decision to either avoid or perform an episiotomy can be based on the midwives training (Wu et al 2013) linked to the use of "hands off/poised" (Trochez et al 2011) or the belief that episiotomy may not prevent an OASI injury (Staric et al 2017, Jiang et al 2017).

The number of midwives in this study who felt confident at performing episiotomies is similar to levels reported in an Australian study (East et al 2015). As being able to perform an episiotomy is a component of the care bundle some midwives may require further training and support to increase skills and confidence with this aspect of practice.

Although midwives could detect first and second degree tears, many were less sure that they could differentiate between the different categories of third degree tears. Correctly identifying the category of tear is also a component of the care bundle and would enable staff to develop their skills and knowledge with this aspect of practice.

The majority of midwives did not document which approach they used in the birth records, regarding clinical decision making at the time of birth. This means that records cannot be used retrospectively to identify how midwives minimise perineal trauma (Petrocnik and Marshall 2015) and this is an area of practice that needs to be improved. This could be addressed through the use of a reflective tool, which is included in the training materials of the OASI care bundle.

The longterm effects of OASI are not always known by midwives, as women are usually cared for by gynaecology and women's health services. Raising the awareness of women's experiences (Bidwell et al 2018) will help to address this alongside increasing women's own knowledge of perineal care during labour such as the launch of a new patient information leaflet from the RCOG (2019) This could be used by midwives to gain informed consent from women in relation to perineal care in pregnancy and childbirth (Chan et al 2017) and is an aspect of practice requiring further study.

When women sustain OASI tears midwives tend to question their own skills as they are often afraid of being judged by colleagues for not being able to prevent the injury occurring (Edqvist et al 2014). This in turn can affect a midwife's confidence and can cause personal physical and emotional problems (Halperin et al 2011). The need to encourage reflection on practice and identify how best to support midwives requires further research.

Conclusion

This study provides baseline data regarding midwives practice prior to the introduction of the OASI care bundle and suggests that further evaluation of the impact of the bundle will be required.

It is concerning that a large proportion of midwives felt unable to identify third degree tears and nearly half lacked confidence with episiotomies. The OASI care bundle addresses the training concerns raised by midwives, as they would be reminded how to perform an episiotomy and how to detect the different categories of third degree tears.

There is a need to improve the documentation of midwives perineal practice in order to reflect the decision making and care that is provided at the time of birth.

Much of the research has quite rightly focused on women's experiences but less is known about the impact of OASI tears on the midwives providing care, and this is an area that needs further exploration.

Strengths and Limitations

Strengths: This was a UK wide study which provides a benchmark of practice prior to the RCOG care bundle being introduced. It included responses from midwives working across the UK in 4 different care settings.

Limitations: Although the pilot of the care bundle had not commenced it had been well publicised and may have started to influence midwives' practice and could have had an impact on the results.

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Table 1. Demographics of the study population (midwives completing the online survey)

		n=563	%
Country of practice			
	England	519	92.1
	Wales	32	5.7
	Scotland	7	1.2
	Northern Ireland	5	0.8
Main locations of practice/ types of unit			
	Obstetric Unit	465	82.6
	Alongside Midwifery Unit	226	40.1
	Home	184	32.7
	Freestanding Midwifery Unit	59	10.5
Midwives working full-time or part-time			
	Full time	335	59.5
	Part-time	223	39.6
	Missing data	5	0.8
Number of years practising as a midwife			
	0-5	188	33.4
	6-10	104	18.5
	11-15	66	11.7
	16-20	65	11.5
	21-25	38	6.7
	26-30	62	11.0
	31-35	27	4.8
	36-46 or more	12	2.1
	Missing data	1	0.2

Table 2 Obstetric Anal Sphincter Injuries and Episiotomy

		n=563	%
Number and percentage of midwives that could identify the different categories of perineal trauma			
	First degree tear	560	99.5
	Second degree tear	560	99.5
	Third degree tear – 3a	391	69.4
	3b	215	38.2
	3c	193	34.3
	Fourth degree tear	342	60.7
Number and percentage of midwives that had been taught how to perform an episiotomy			
		553	98.2
	Missing data	4	0.7
Number and percentage of midwives that had performed an episiotomy in the last 12 months			
		229	40.7
Number and percentage of midwives that had not performed an episiotomy in the last 12 months, and their level of confidence to do one if it was required?			
	Very Confident	94	16.7
	Confident	170	30.2
	Not very Confident	123	21.8

Table 3 Influences on midwives practice

Midwives approach to managing the perineum: (n=555)	"hands on" (n=341)	%	"hands off/poised" (n=214)	%	p value
Mdwives were encouraged to use "hands on" approach where they work	183	53.7	41	19.2	<0.001
Midwives would use a "hands on" approach when:					
The perineum is about to tear	279	80.9	59	27.2	<0.001
History of third and fourth degree tear	274	79.4	51	23.5	
Short perineal body	246	71.3	24	11.1	
Primigravida	210	60.9	8	3.7	
Big baby	195	56.5	15	6.9	
Prolonged second stage	187	54.2	20	9.2	
Woman's request	169	49.0	28	12.9	
Poor maternal effort	133	38.6	12	5.5	
Short stature	132	38.3	2	0.9	
When using a "hands on" approach, midwives place their hands:					
On both the fetal head and the perineum	252	73.7	35	2.2	<0.001
On the perineum	58	17.0	18	11.4	
On the fetal head	32	9.4	19	12.0	
Number of midwives taught to use a "hands on" approach in their training?	305	89.2	161	80.1	0.01
Number of midwives that use warm compresses on a woman's perineum	58	10.3	25	4.4	0.12
Had midwives changed the approach they use in the last 12 months?	47	8.3	15	2.6	0.14
Have midwives accessed their local guidelines within the last 12 months in relation to perineal management in the second stage of labour?	199	58.9	111	52.1	0.07
Do midwives record in the birth records whether they use a "hands on" or "hands poised/off" approach?	65	19.0	30	14.1	0.2