

## Original Article

## Perineal management techniques among midwives at five hospitals in New South Wales – A cross-sectional survey

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**Background:** Midwives are reported to have changed from ‘hands on’ to ‘hands poised or off’ approaches to birth at the same time as obstetric anal sphincter injuries (OASIs) are increasing. As perineal management details are not routinely collected, it is difficult to quantify practice.

**Aims:** To determine which perineal protection techniques midwives prefer for low-risk non-water births; whether preference is associated with technique taught or with other characteristics; and whether midwives change preference according to clinical scenario.

**Materials and Methods:** Midwives in Northern Sydney Local Health District (NSLHD) were surveyed during a 2-week period in 2014. Multiple-choice questions were used, with free text option. Descriptive analyses, chi-square and McNemar tests were undertaken.

**Results:** One hundred and eight midwives participated (response rate 76.7%). ‘Hands poised or off’ was preferred by 63.0% for a low-risk birth. Current practice was associated with technique taught ( $P < 0.01$ ). For scenarios with increased OASI risk midwives reported switching to ‘hands on’, with 83.4% employing ‘hands on’ whether there was concern about an impending OASI. There has been a shift over time from teaching ‘hands on’ to ‘hands poised or off’.

**Conclusion:** The preferred technique for a low-risk birth appears to have changed from ‘hands on’ to ‘hands poised or off’, but most midwives adopt ‘hands on’ in situations of high risk for OASI. Further research is needed to establish whether there is an association with the rising OASI rate and the change in preferred perineal management technique for a low-risk birth.

**Key words:** ‘hands off or poised’, ‘hands on’, midwifery survey, obstetric anal sphincter injury, perineum.

## Introduction

Local and international population-based studies consistently report increasing obstetric anal sphincter injury (OASI) rates.<sup>1–3</sup> However, changes in maternal characteristics and in risk factor prevalence captured in population health datasets only minimally explain the increase,<sup>3,4</sup> and improved clinical ascertainment and/or documentation of OASI may be contributing.<sup>3</sup> Changes in nonroutinely reported clinical practices may also exert an influence.

Traditionally clinicians have used ‘hands on’ approaches at the time of birth, including applying downward pressure with one hand to aid in flexion of the baby’s head, and/or guarding or supporting the perineum with the other. A

less common technique known as ‘chinning’ can also be employed, whereby the baby’s chin is gripped by one finger as the midwife assists the baby’s head to be born and requests the mother to stop pushing.<sup>5</sup> This technique is still practised in Finland and is regaining popularity in other Scandinavian countries. All techniques aim to control the speed of birth, with head flexion justified on the belief that the smallest diameter of the fetal head will emerge. This belief has prompted debate, with some arguing that it cannot achieve this aim and only serves to place more pressure on the perineum.<sup>6</sup>

In contrast, there has been a shift to a ‘hands poised’ approach,<sup>7,8</sup> where the accoucheur is ready to put light pressure on the baby’s head in case of rapid expulsion, but not touch the head or perineum otherwise. This shift was driven in part by publication of the first randomised controlled trial (RCT) to compare the two approaches,<sup>9</sup> which reported no difference in OASI rates. However, this study was not powered to detect a difference, and compliance within the ‘hands poised’ arm was poor. A recent Cochrane review which included two additional

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studies<sup>10,11</sup> concluded that there was no difference between 'hands on' and 'hands poised or off' but that substantial heterogeneity existed and effects could be in either direction.<sup>12</sup> Current midwifery guidelines and textbooks recommend either approach is appropriate.<sup>13–15</sup>

More recently, interventions have been undertaken in Norway aiming to reduce the OASI rate. Informed by Pirhonen<sup>5</sup> who postulated that the low OASI rates seen in Finland were related to routine 'hands on' approaches, intervention programs with promotion of 'hands on' were instigated. Other strategies, including emphasis on selective mediolateral (as opposed to midline) episiotomy, good visualisation of the perineum at birth and communication with the mother regarding slow pushing, were also implemented. With OASI rates decreasing from 4–5 to 1–2%,<sup>16–19</sup> questions about the appropriateness of abandoning traditional perineal support practices have been raised.

The aims of the current study were to determine (i) which perineal protection techniques are currently preferred by midwives in New South Wales (NSW) for low-risk nonwater births; (ii) whether midwifery characteristics influence preference; (iii) whether practice has changed from preregistration training; and (iv) whether midwives change techniques in different clinical scenarios.

## Materials and Methods

All registered midwives who were rostered to work in any of the five public hospitals' birthing suites in Northern Sydney Local Health District (NSLHD), NSW, during a 2-week period in May 2014 were invited to participate. Approximately 5300 babies were born in these hospitals during 2012.<sup>20</sup> One hospital provided care for only uncomplicated labour and birth; three for normal and moderate risk; and one for normal, moderate or high risk. Two researchers (AA, MdV) visited each birthing suite to introduce the study and explain its purpose. Questionnaires and participant information sheets were left at each site for the 2 week period; midwives were asked to complete the questionnaire anonymously and place it in a sealed collection box to maintain the privacy of their responses. The questionnaire took no longer than ten minutes to complete, and consent was implied by questionnaire completion.

The survey design was adapted from one previously undertaken in the UK<sup>8</sup> and explored midwives' perineal practice techniques but not attitudes to episiotomy. Questions were multiple-choice, including basic demographic information. Six different perineal practice techniques were described, and midwives were asked to choose the one they were taught for normal, nonwater births; what they preferred to use currently; and in what circumstances they would change their preferred technique (full questionnaire in Appendix S1). Midwives were invited to provide written comments if they wished.

## Analyses

In order to determine association between the preferred technique and midwifery characteristics, the six different perineal techniques were first categorised as either 'hands poised or off' or 'hands on' (Table 2), and chi-square tests were undertaken. Characteristics were combined where there were small numbers of responses. McNemar's test for paired data was used for comparison of technique taught with technique now preferred. Wilcoxon two sample test was used to compare years since registration and use of 'chinning' technique. All *P* values are reported for 2-tailed tests. Descriptive analyses were used for other data. Statistical analyses were undertaken in SAS Version 9.3, SAS Institute, Cary NC, USA. Free text comments were grouped into themes.

Approval for this study was obtained from the Northern Sydney Local Health District Research Ethics Committee.

## Results

Of the 141 midwives who were rostered to work during the study period, 108 completed a survey (response rate 76.7%). This varied among the five hospitals from 56.0 to 100.0%. The majority of midwives had worked in a birthing suite for longer than 7 years (56.4%), and were aged 40–49 years (37.0%). Work employment was full-time (37.0%), part-time (40.8%) or on-call (22.2%), with the majority working at least some night shifts (80.4%). The most common qualification was a university-based postgraduate diploma in midwifery (45.4%); with more than half (52.8%) either accredited, or in the process of accreditation, to perform perineal suturing (Table 1).

### Preferred technique

Overall, 68 (63.0%) of the midwives currently prefer to use 'hands poised or off' as the most appropriate care for a low-risk woman having a nonwater birth despite only 36 (33.3%) overall taught this approach as part of preregistration training. Preference for 'hands poised or off' varied among the hospitals from 50.0 to 87.5%. Only five midwives reported routinely using 'hands off' alone (ie not being prepared to touch the baby's head at all). Among those preferring 'hands on', the most popular technique was perineal support/guarding with head flexion (Table 2). No significant association of preferred technique was found with year of registration (*P* = 0.63), university qualifications (*P* = 0.62), accreditation to perform suturing (*P* = 0.22), years worked in birthing suite (*P* = 0.55), employment classification (*P* = 0.77), nor type of shifts worked (*P* = 0.66).

Only three midwives who preferred 'hands poised or off' stated they would never use 'hands on', while 65 (95.6%) would change technique in at least one clinical scenario with higher risk. The most common motivator for change is concern about an impending 3rd/4th degree

**Table 1** Characteristics of participating midwives

Characteristics	N	%
Age (years)		
<30	18	16.7
30–39	21	19.4
40–49	40	37.0
50–59	23	21.3
60+	6	5.6
Midwifery classification		
Midwife 1st–3rd year	18	16.7
Midwife 4th–7th year	23	21.3
Midwife ≥ 8th year	39	36.1
Clinical Midwifery Specialist	18	16.7
Midwifery Educator/Clinical Midwifery Educator	7	6.5
Manager/Clinical Midwifery Consultant	3	2.8
Employment		
Full-time rotating shifts	31	28.7
Part-time rotating shifts	34	31.5
Full-time set shifts	9	8.3
Part-time set shifts	10	9.3
On call	24	22.2
Night work†		
Never	21	19.6
Up to half the time	43	40.2
About half the time	35	32.7
Half the time to all the time	8	7.5
Qualifications (more than one may apply, total therefore >100%)		
Hospital-based general nursing certificate	23	21.3
University-based general nursing diploma or bachelor degree	39	36.1
Hospital-based midwifery certificate	27	25.0
University-based midwifery post graduate diploma	49	45.4
University-based midwifery post graduate masters	20	18.5
University-based midwifery – direct entry	15	13.9
Qualifications outside Australia	8	7.4
Year of registration as a midwife†		
1972–1979	5	4.6
1980–1980	16	14.8
1990–1999	22	20.4
2000–2009	39	36.1
2010–2014	21	19.4
Total time worked in a birthing suite (years)†		
<1	10	9.3
1–2	12	11.1
3–6	24	22.2
7–10	17	15.7
>10	44	40.7
Accredited to perform perineal suturing†		
No	49	45.4
In the process of accreditation	19	17.6
Yes	38	35.2

†Percentages do not total 100% where there is missing data.

tear, with 51 (75.0%) reporting they would use a ‘hands on’ technique in this situation. Other scenarios in which a high proportion of midwives reported changing from ‘hands poised or off’ to ‘hands on’ included history of a

previous 3rd/4th degree tear (70.6%), uncontrolled pushing by mother (63.2%), and a short, rigid or badly swollen perineum (57.4%) (Table 3). For scenarios in which a greater numbers of midwives would change their approach, the preferred technique is a combination of perineal support/guarding with head flexion.

Some midwives in the ‘hands on’ group also adopt different techniques depending on the scenario, for example by adding head flexion if they would normally undertake only perineal support/guarding in low-risk situations. The total numbers of midwives using particular techniques in different scenarios are shown in Figure 1. ‘Hands off’ is used by only one to five midwives depending on the scenario. The number of midwives using ‘hands poised’ decreases with increasing risk, from 61 (56.5%) for a primiparous woman with no other risk factors, to 15 (13.9%) when there is concern about an impending third/fourth degree tear. Head flexion on its own is less likely to be adopted by midwives in general, with 17 midwives reporting they would never use it either on its own or in conjunction with perineal support/guarding.

Among the 103 midwives who answered the question regarding ‘chinning’, 23 (22.3%) would employ this technique but only in certain situations; most commonly for concern about a large baby, or fetal distress, 9 (8.7%). There was no difference in the length of time since registration between the midwives who would use chinning and those who would not ( $P = 0.73$ ). This question attracted seven comments which all related to a lack of familiarity with this method; for example ‘I don’t know how to use chinning’ and ‘never discussed/heard of chinning’.

### Association with training

Of the 68 midwives who currently prefer ‘hands poised or off’, 40 (58.8%) were taught a ‘hands on’ approach. Of the 39 who now prefer ‘hands on’, 8 (20.5%) were taught ‘poised or off’ (Table 4). Overall, there was a statistically significant change from practice taught to current practice ( $P < 0.01$ ). Teaching of ‘hands poised or off’ has become more common. For midwives registered prior to 1999, 4 (9.3%) were taught this approach; 14 (35.9%) during 2000–2009; and 15 (75.0%) for those registered since 2010 (Table 4). Of those taught ‘hands on’ prior to 1999, 61.5% had changed to preferring ‘hands poised or off’; among the 2000–2009 cohort 56% had changed; and among those who registered since 2010, 20% had changed (although numbers are very small).

Nineteen midwives gave free text comments, many emphasising a personalised approach; for example ‘Working in caseload you develop a relationship with women and...a trust of each other. It is easier to encourage a woman to breathe her baby out, allowing stretching of the peri and reducing perineal trauma’; ‘I emphasise working together/listening to me and my directions’. Other midwives described different techniques

**Table 2** Techniques taught and techniques currently preferred for normal non-water births among all midwifery respondents

Approach	Technique	Number of responses (%)	
		Technique Taught†	Technique Now Preferred
'Hands poised or off'	Hands off, with no touching of the perineum or the baby's head	10 (9.3)	5 (4.6)
	Hands poised, ready to apply light pressure to the baby's head in case of a rapid birth‡	26 (24.1)	63 (58.3)
'Hands on'	Head flexion with no perineal support/guarding	5 (4.6)	3 (2.8)
	Perineal support/guarding without head flexion	9 (8.3)	16 (14.8)
	Perineal support/guarding with head flexion	53 (49.1)	21 (19.4)
	Perineal support/guarding with head flexion and gripping the baby's chin through the perineum ('chinning')	4 (3.7)	0

†Percentages do not total 100% due to missing data for one respondent.

‡One midwife described using another technique which was very similar to hands poised which we categorised as such for analysis.

**Table 3** Midwives who would change from a 'hands poised or off' technique to 'hands on' depending on clinical scenario

Clinical Scenario	Number of midwives who would change from a 'hands poised or off' to a 'hands on' technique <i>n</i> = 68 (%)
Concern about an impending 3rd/4th degree tear	51 (75.0)†
History of a previous 3rd/4th degree tear	48 (70.6)†
Uncontrolled pushing by the mother	43 (63.2)
Short, rigid, or badly swollen perineum	39 (57.4)
Concern that the baby is large	21 (30.9)
Prolonged 2nd stage of labour	18 (26.5)
Concern about an impending 2nd degree tear	17 (25.0)†
Fetal distress	13 (19.1)
Maternal exhaustion	10 (14.7)
Presence of epidural/spinal analgesia	8 (11.8)
Concern about an impending 1st degree tear	4 (5.9)
Short stature mother	3 (4.4)
Primiparous birth with no other risk factors	2 (2.9)

†Missing data for one midwife.

they may employ in the belief they would help preserve the perineum, such as applying warm compresses, antenatal perineal massage, or particular birthing positions; while some others described confusion among midwives as to the 'correct' method of perineal protection; for example 'It is difficult when working with students as there is no 'right way' to teach them and they may get

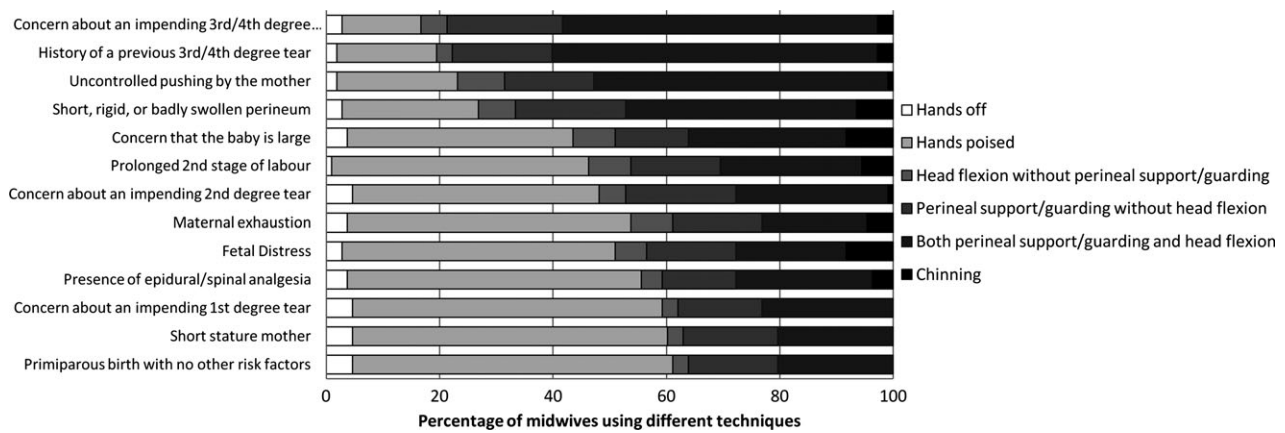
confused too'; 'much debate goes on ... about what best practice is'.

## Discussion

This survey has shown that among midwives currently working in NSLHD, the majority (63%) prefer to use 'hands poised or off' when assisting at a low-risk nonwater birth. However, midwives' current preferred practice was associated with having been taught a particular approach; other midwifery characteristics, including years worked in birthing suite, were not. In contrast, a UK survey undertaken in 2007 showed that 49% of midwives preferred 'hands poised or off' and that those who had worked for a longer time were more likely to prefer 'hands on'.<sup>8</sup> Whether this difference is related to variations in practice between the two countries, or to a shift from 2007, is unknown.

It is likely that the highly publicised 1998 HOOP trial<sup>9</sup> had an influence in shifting the preregistration training from 'hands on' to 'hands poised or off'. The high proportion of midwives who were taught 'hands on' and now prefer 'hands poised or off' reflects the influence of the work environment, which in turn has likely been influenced by midwives entering the workforce with different approaches to perineal management learnt from their training. It is of note that preference for 'hands poised or off' ranged from 50.0 to 87.5% depending on hospital, which possibly reflects the influence of other midwives at individual workplaces.

To our knowledge, this is the first time that 'hands off' and 'hands poised' practices have been differentiated in reporting. This distinction is timely and is a strength of the current study. Trochez points out that the terminology in the literature is often unclear, with 'hands off' sometimes referring to both poised and off.<sup>8</sup> This can lead to misinterpretation of studies with assumptions being made that midwives are not applying light pressure to the infant's head when in fact they are. A 'hands poised' approach can also be incorrectly perceived as 'hands off' in clinical practice. We have shown that only 5% of the



**Figure 1** Percentage of midwives who use each technique according to clinical scenario.

**Table 4** Association between techniques taught and currently preferred for individual midwives by year of registration

	Overall	Year of Midwifery registration (col%) <sup>†</sup>		
		<1999	2000–2009	≥2010
Taught hands on	31 (29.0)	15 (34.9)	11 (28.2)	4 (20.0)
Prefers hands on				
Taught hands on	40 (37.4)	24 (55.8)	14 (35.9)	1 (5.0)
Prefers hands poised or off				
Taught hands poised or off	28 (26.2)	3 (7.0)	12 (30.8)	10 (50.0)
Prefers hands poised or off				
Taught hands poised or off	8 (7.4)	1 (2.3)	2 (5.1)	5 (25.0)
Prefers hands on				
Total	107	43	39	20

<sup>†</sup>Year of registration missing for five midwives, technique taught missing for one midwife.

midwives who responded to our survey prefer ‘hands off’, with the majority preferring to use ‘hands poised’. We cannot state how often midwives actually do apply light pressure, nor how midwives decide that it is needed. As no studies have been undertaken to assess the impact of applying light pressure, we also have no way of knowing if it actually influences the outcome.

The fact that most midwives will respond to different clinical scenarios by changing technique is highlighted in this study. This is in agreement with another Australian survey;<sup>7</sup> while the UK survey reports a much greater reluctance to change.<sup>8</sup> The reasons midwives would switch from one technique to another according to clinical situations were not identified, but with a trend for a greater change to ‘hands on’ in situations of greater risk for OASI, it is reasonable to assume that midwives who switch practice believe that ‘hands on’ offers some protection.

No midwife who was surveyed had a preference for ‘chinning’ in low-risk births, and 78% would not use it for any of the scenarios described. More free text comments were made about ‘chinning’ than any other technique;

mostly around unfamiliarity with this method. The introduction of a combination of strategies, including ‘chinning’ to routine care at birth was associated with a significant drop in the OASI rate in Norway.<sup>16–19</sup> It is unclear whether ‘chinning’ by itself had any effect, or whether the decrease was driven by the other ‘hands on’ techniques, and/or by other strategies individually or in combination with each other. However, there is a growing call to further evaluate ‘hands on’ methods,<sup>8</sup> it must be remembered that these were not the only strategies that were introduced.

The strengths of this study include a high response rate and inclusion of multiple hospitals. The detailed reporting of techniques allowed for reporting of total number of midwives performing different techniques by different scenarios. Not all possible scenarios were included, for example, practices related to maternal positions and water immersion. While only one local health district was included, no district-wide policies for perineal management exist and thus hospitals can vary in their approach. Preregistration education is delivered by different universities, so there is no reason to believe that practices

in this local health district differ from those across the rest of NSW. Only midwives were surveyed for this study, with further research about obstetricians' practices warranted. Perinatal outcomes associated with different techniques could not be explored in this current study.

## Conclusion

The usual practice among midwives in NSLHD appears to have changed from 'hands on' to 'hands poised or off', with the teaching of 'hands poised or off' now predominating. This change has occurred during a period of rising OASI rates, and while the two may possibly be related, this observation remains an ecological one only. Further research is required to establish if an association exists between perineal management technique and OASI outcome. In clinical situations shown to be associated with increased risk for OASI, midwives report switching to 'hands on', implying that these approaches offer some protection.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article:

**Table S1.** Assisting at birth - a short survey of midwifery practice.