Perceptions and Practice of Waterbirth: A Survey of Georgia Midwives

Shaunette L. Meyer, MA, Christopher M. Weible, PhD, and Kate Woeber, CNM, MPH

This study investigated the experience and perceptions of Georgia certified nurse-midwives about waterbirth and their level of support for establishing waterbirth in their work setting. A survey was distributed to a convenience sample of 119 certified nurse-midwives from the American College of Nurse Midwives, Georgia chapter; 45% of those surveyed responded. The majority of midwives had some exposure to waterbirth through self-education or through clinical practice. More than half supported the incorporation of waterbirth in their workplace setting. Maternal relaxation and reduced use of analgesia were perceived as the greatest benefit of waterbirth. Of 11 items related to disadvantages of waterbirth, certified nurse-midwives were moderately to severely concerned about none. The most concerning factors, with a mean of 2.4 to 2.5 on a scale of 1 (no worry) to 5 (severe worry), were maintenance of water temperature, physical stress on the midwife, and inability to see the perineum. Midwives’ support for waterbirth focused mostly on the perceived benefits to the mother with little worry about the risks. J Midwifery Womens Health 2010;55:55–59 © 2010 by the American College of Nurse-Midwives.

keywords: water aspiration, birth, hydrotherapy, midwife, opinion, survey

INTRODUCTION

The culture of birth in the United States has changed dramatically in recent years. Birth has shifted from homes to hospitals, and advanced technology has emerged to monitor mothers and babies throughout labor and delivery. Since the 1980s, delivering underwater began to attract attention as an alternative to land birth.1 Waterbirth has been promoted as providing a safe and effective pain management option, especially for women desiring a delivery with less medical intervention.2 Waterbirth has also attracted skepticism, especially with respect to the lack of randomized controlled trials to support its perceived benefits.3,4

Waterbirth advocates and skeptics have both focused on a method of delivery that is uncommon in the United States. Only 10% of hospitals offer waterbirth.5 When offered, waterbirth tends to be managed by midwives.1,5–7 For midwives, waterbirth represents a birthing method congruent with their philosophy, emphasizing holistic practice, little or no intervention, and woman empowerment.

Since the 1980s, several studies have investigated the risks and benefits of waterbirth compared with land birth and found mixed results.6,8–13 Possibly the most publicly salient risk of waterbirth is water aspiration.3,14,15 These studies argue that infants, who have inadequate oxygenation during birth, may gasp for air, causing water intoxication, hyponatremia, or respiratory distress syndrome. Contrasting evidence suggests, however, the risk of aspiration is not increased with babies born in water, due to the inherent diving reflex that newborns demonstrate.8,10–12

Among the benefits of waterbirth, studies have found a decrease in the use of analgesia for women delivering in water.6,8,10,11,16 By using less analgesia, the risk of neonatal respiratory depression and maternal decrease in consciousness is reduced.6 In addition, Geissbuehler et al.10 and Thoeni et al.11 found that waterbirth decreases the number of episiotomies and perineal lacerations. In relation to neonatal outcomes, one study showed a significant increase in neonatal arterial blood pH and an increased Apgar score10; however, three other studies showed no differences in either.9,11,13

Although a good deal of research has focused on examining the risks and benefits of waterbirth compared with other delivery options, less research has focused on certified nurse-midwives (CNMs) and certified midwives (CMs) and their experience and perceptions with waterbirth. Most survey-based research involving CNMs and CMs emphasizes issues of malpractice, salary, work schedules, research utilization, and details of practice.17–20 Rarely do these studies mention waterbirth. Exceptions include one study21 that found 20% of a Connecticut sample of CNMs perform waterbirths.

This brief report focuses on the perceptions, exposure to, and experience of a sample of Georgia CNMs with waterbirth. Three questions are pursued: 1) What are CNMs exposure to and experience with waterbirth? 2) What are their perceptions of the benefits and limitations of waterbirth? 3) Do CNMs support a greater emphasis on waterbirth in their place of practice?
METHODS

The target population was currently or recently active CNMs in Georgia. The convenience sample used the membership e-mail list of the American College of Nurse Midwives (ACNM), Georgia chapter, which was provided by, and used with the permission of, the chapter president. All 119 CNMs on the membership e-mail list were invited to take part in the study; the list represents approximately one quarter of the 411 licensed CNMs in Georgia.22 Many of the rural CNMs do not attend the Atlanta-based meetings, and therefore their names were not included on the email list.

The survey questionnaire was developed by the authors in consultation with CNM faculty at Emory University. To assess its face and content validity, the content was reviewed by four CNMs as well as a childbirth education expert who worked in the only facility in metropolitan Atlanta that currently performs waterbirths. It is unknown how many other facilities perform waterbirth in Georgia.

The survey contained the following sections: 1) demographic information, 2) exposure to and experience with waterbirth, 3) the hospital environment related to waterbirth, 4) personal effectiveness in shaping policy in their place of practice, 5) views of research on waterbirth, 6) support for waterbirth, and 7) advantages and disadvantages of waterbirth. This brief report focuses upon the demographic information, exposure to and experience with waterbirth, perceived advantages and disadvantages of waterbirth, and support for waterbirth.

A secure and encrypted internet software, Survey Monkey, was used to administer the questionnaire. The questionnaire administration followed Dillman’s method for internet surveys.23 Members received an advance-notice e-mail, followed within 1 week by a link to the survey. One week later, members received an e-mail thanking them for responding and requesting a response from those who had not yet responded. Two weeks later, a link to the survey was sent a second time to those members who had not responded, followed again by a reminder e-mail 1 week later. The survey remained online for respondents to participate for approximately 6 weeks, from early January and into February, 2008. At this point, data were downloaded into a secure deidentified file and analyzed using SPSS version 15 (SPSS, Inc., Chicago, IL). This research project was administered with institutional review board approval at Emory University. Informed consent was obtained on an internet cover letter before the respondent had access to the survey.

RESULTS

Fifty-three of 119 midwives from the Georgia chapter e-mail list responded to the survey, for a response rate of 45%. Of the 53 respondents, 40% were aged younger than 40, 47% were aged between 40 and 59, and 11% were older than 59. Three quarters of respondents reported practicing midwifery for less than 20 years. Nearly half (45%) acknowledged not currently practicing in the metropolitan Atlanta area, with 20% working less than 10 years and 35% working more than 10 years in the metro Atlanta area. More than 80% of respondents worked in a hospital setting for at least part of their practice, with the remaining respondents working in community clinics or academia. Of the 53 responding midwives, 39 had given birth, 12 said they had not, and one did not respond. All respondents were CNMs (n = 52), with one unknown; there were no CMs in the sample.

Eleven different measures evaluated the respondents’ exposure to and experience with waterbirth. Figure 1 shows the frequency distributions of yes and no responses. One nonresponse for the measures was not included.

Nearly all respondents had exposure to waterbirth by reading an article, receiving a question about waterbirth from a patient, and watching a video about it. One third to one half of the respondents had experience with waterbirth in activities such as learning about waterbirth in their midwifery program, witnessing a waterbirth, and helping deliver a baby in water. Finally, it was very rare for any of the midwives in the sample to have given birth in water.

Respondents were asked to rate their concern on 11 issue categories that may be experienced during a waterbirth on a scale of 1 to 5, with 1 being “no worry” and 5 being “severe worry.” Table 1 presents the frequency distributions of the categories along the five-point scale and the mean for each category. The categories are ordered by means from most worry to least worry.

The majority of categories have responses clustered near the low end of the scale, suggesting little worry about waterbirth among this sample of CNMs. No more than two CNMs responded to a category with severe worry at the top end of the scale. Showing the most worry were maintenance of water temperature, physical stress on the midwife, and difficulty seeing the vagina. The areas of least concern were infection of the midwife and infection of the newborn. Table 1 also shows that CNMs do not consider aspiration and infection as top worry items.

Respondents were asked about the perceived benefits of waterbirth on a five-point scale, with 1 being “not a benefit” to 5 being a “major benefit” (Table 2). Except for maternal blood loss, the overall rankings for these categories cluster near the high end of the scale. CNMs perceived the most benefits for mothers being more relaxed, a decreased

Shaunette L. Meyer, MA, completed this research study during her nursing degree at Emory University, Atlanta, GA. She is currently attending the University of Colorado at Denver to receive her MS in Midwifery.
Christopher M. Weible, PhD, is a professor at the School of Public Affairs of the University of Colorado at Denver.
Kate Woeber, CNM, MPH, is a clinical instructor at Emory University, Atlanta, GA.
use of analgesia by mothers, and mothers having a more positive birth experience. The areas of least benefit were a decrease in maternal blood loss, decrease in pitocin augmentation, and lower incidence of perineal trauma.

Comparing the limitations in Table 1 and benefits in Table 2, CNMs in this sample rated the benefits higher than the limitations. The overall mean for only one benefit question (decrease in maternal blood loss) was lower than all of the limitation questions. CNMs, however, varied more in their opinions about the benefits than the limitations of waterbirth.

Respondents were asked the following question: “To what extent do you oppose or support the introduction or a greater emphasis of waterbirth in the facility where you practice, or most recently practiced?” The mean response was 3.7 on a scale of 1 to 5, with 1 being “strongly oppose” to 5 being “strongly support.” A majority of respondents supported a greater emphasis of waterbirth in their practice. Of the 53 respondents, 34 (64%) recorded

---

**Table 1. Frequency of Responses and Means for Limitations of Waterbirth, N = 53**

<table>
<thead>
<tr>
<th>Response</th>
<th>No Worry</th>
<th>Severe Worry</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of water temperature</td>
<td>9 18 18 6 2</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Physical stress on CNM</td>
<td>12 19 11 8 2</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Difficult to see vagina</td>
<td>14 15 17 5 2</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Difficult to estimate blood loss</td>
<td>8 26 15 3 1</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Aspiration of newborn</td>
<td>11 26 11 2 2</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Hypothermia of newborn</td>
<td>15 23 11 2 2</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Inconvenience of CNM getting wet</td>
<td>19 19 10 3 2</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Infection of mother</td>
<td>25 11 11 4 2</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Infection of newborn</td>
<td>24 15 8 4 2</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Infection of CNM</td>
<td>26 18 4 5 0</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Inconvenience of CNM wearing shoulder-length gloves</td>
<td>28 18 6 1 0</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

CNM = certified nurse-midwife.

---

**Table 2. Frequency of Responses and Means for Benefits of Waterbirth, N = 53**

<table>
<thead>
<tr>
<th>Response</th>
<th>Not a Benefit 1 2 3 4 5</th>
<th>Major Benefit Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers are more relaxed</td>
<td>1 1 7 17 27</td>
<td>4.3</td>
</tr>
<tr>
<td>Decreased use of analgesia by mothers</td>
<td>1 4 7 20 21</td>
<td>4.1</td>
</tr>
<tr>
<td>Mothers have a more positive birth experience</td>
<td>1 2 15 11 23</td>
<td>4.0</td>
</tr>
<tr>
<td>Maternal relief from back pain</td>
<td>1 3 13 17 18</td>
<td>3.9</td>
</tr>
<tr>
<td>Newborns are calmer/more peaceful</td>
<td>3 8 17 9 14</td>
<td>3.5</td>
</tr>
<tr>
<td>Quicker labor</td>
<td>7 7 8 14 14</td>
<td>3.4</td>
</tr>
<tr>
<td>Newborns are more alert</td>
<td>3 9 15 16 9</td>
<td>3.4</td>
</tr>
<tr>
<td>Lower incidence of perineal trauma</td>
<td>6 11 21 7 7</td>
<td>3.0</td>
</tr>
<tr>
<td>Decrease in pitocin augmentation</td>
<td>11 11 11 11 9</td>
<td>2.9</td>
</tr>
<tr>
<td>Decrease in maternal blood loss</td>
<td>30 4 15 2 1</td>
<td>1.8</td>
</tr>
</tbody>
</table>
DISCUSSION

The majority of the sampled Georgia CNMs have some exposure to waterbirth via reading an article or watching a video, yet fewer have experience with witnessing a waterbirth or delivering a baby in water. Nonetheless, the current sample of Georgia CNMs is slightly more likely to help deliver a baby in water (34%) than the 20% of sampled CNMs in Connecticut who performed waterbirths.21 In addition, although most waterbirths in the United States are supervised by CNMs,4 only 30% of the CNMs in this sample received education in their midwifery program about waterbirth. These findings suggest a possible need for education programs to provide opportunities for direct experience with waterbirth.

A majority of CNMs support waterbirth in their facility, regardless of the facility type. The respondents’ general support for waterbirth is consistent with their opinions about the perceived benefits and limitations. All but one category of benefits had higher means (>2.9) than the limitations (<2.5), the exception being the benefit of reduced maternal blood loss (mean = 1.8). This latter perception conflicts with one descriptive research study that found that delivering in water decreases the amount of maternal blood loss.10

Midwives perceived the benefits of waterbirth as including pain reduction and relaxation of the mother, positive birth experiences, and quicker labor, all of which are consistent with the extant research.6,8,10,11,16 For example, the perceptions of midwives in this study parallel the findings in Thoeni et al.,11 who found a decrease in the duration of labor with waterbirth. Additionally, the findings in this study support existing research showing that women who have waterbirths have reported their experiences as more “wonderful” or “pleasurable” when compared with women who choose land births.1,7,16

Neonatal and maternal infections are frequently discussed as risks of waterbirth.3,15,24 In this study, the CNMs’ concerns about waterbirth included maintaining water temperature and the physical stress on the CNM. The concern about maternal and newborn infection was near the bottom of the list of limitations; this is consistent with research that finds no difference in infection rates among infants or mothers who chose to deliver using waterbirth.9,10,11,13 Although worry about aspiration is a risk of waterbirth often mentioned in the literature,3,15 it is not a major concern among respondents in this study.

This study had several limitations that may affect interpretation and generalizability of the results. This survey was distributed to all members of the Georgia chapter of ACNM. The response rate of 45% may not be representative of the ACNM community or CNMs in Georgia; it may reflect a bias toward Atlanta-based CNMs and CNMs with strong opinions about waterbirth. To some extent, generalization arguments can be made assuming that CNMs, regardless of their geographic residence and place of work, share a common professional philosophy.25 In addition, respondents suggested the authors should have included a question on whether their current facility performs waterbirth. Such information may have helped sort out whether CNMs who work in such a facility support waterbirth or not. Despite a limited sample and survey instrument, however, this study is one of the few investigations of CNMs and their perceptions of waterbirth.

CONCLUSION

The future of waterbirth will depend on the beliefs and experience of the people involved in the birthing process, including CNMs, pediatricians, labor and delivery nurses, obstetricians, hospital administrators, and patients. The results from a sample of Georgia CNMs show that a large majority have exposure to waterbirth and generally support the expansion of waterbirth in their place of practice. Certified nurse-midwives were not moderately or severely worried about any of the disadvantages of waterbirth. What worry CNMs did have dealt less with the risks of the birthing technique and more about the extra stress placed on CNMs in implementing the approach.


