

1  
2  
3 Title: Women and waterbirth: a systematic meta-synthesis of qualitative studies  
4  
5  
6

7 **Structured Abstract:**

8 *Background:* The practice of waterbirth is increasing worldwide and has been a feature of maternity  
9 services in the United Kingdom for over twenty years. The body of literature surrounding the practice  
10 focusses on maternal and neonatal outcomes comparing birth in and out of water.  
11  
12

13  
14  
15 *Aim:* To undertake a review of qualitative studies exploring women's experiences of waterbirth. This  
16 understanding is pertinent when supporting women who birth in water.  
17  
18

19  
20 *Methods:* A literature search was conducted in databases British Nursing Index, Cumulative Index to  
21 Nursing and Allied Health Literature, Allied and Complementary Medicine Database, Maternity and  
22 Infant Care, Medline, Applied Social Sciences Index and Abstracts and Web of Science, using search  
23 terms waterbirth, labour/labor, childbirth, women, mothers, experience, perception and maternity  
24 care. Five primary research articles published between 2003 and 2018 which explored the views of  
25 women who had birthed in water were selected for inclusion. Using meta-ethnography, qualitative  
26 research studies were analysed and synthesised using the method of 'reciprocal translational  
27 analysis' identifying themes relating to women's experiences of birthing in water.  
28  
29  
30  
31  
32  
33  
34  
35  
36

37 *Findings:* Four themes were identified: women's knowledge of waterbirth; women's perception of  
38 physiological birth; water, autonomy and control; and waterbirth: easing the transition.  
39  
40  
41

42 *Discussion and conclusion:* Despite the paucity of qualitative studies exploring women's experiences  
43 of waterbirth, meta-synthesis of those that do exist suggested women identify positively with the  
44 choice. The experience of birthing in water appears to enhance a woman's sense of autonomy and  
45 control during childbirth suggesting waterbirth can be an empowering experience for women who  
46 choose it.  
47  
48  
49  
50

51  
52 **Keywords:**

53  
54  
55 Waterbirth; midwifery; natural childbirth; parturition; systematic review; meta-synthesis  
56  
57

60  
61  
62 **Literature Review**  
63  
64

65 Statement of Significance:  
66

67  
68 **Problem/Issue:**

69  
70 Use of water during labour is popular with childbearing women in the United Kingdom however,  
71 figures suggest that rates of waterbirth remain low when compared to land birth. It is unclear as to  
72 why women choose this birth option and how they experience waterbirth. A comprehensive  
73 review of qualitative literature exploring women's experiences of waterbirth has not been  
74 published to date.  
75  
76  
77  
78

79  
80 **What is already known:**

81  
82 Use of water for pain relief during labour has an established evidence base and is supported by  
83 national guidelines, whereas the evidence for use of water during birth remains unclear.  
84

85  
86 **What this paper adds:**

87  
88 This is the first literature review to explore solely qualitative research studies exploring waterbirth  
89 from the woman's perspective.  
90  
91  
92

93  
94  
95 **1. Introduction**  
96

97  
98 Whilst the practice of waterbirth has been a feature of mainstream maternity services in the United  
99 Kingdom (UK) for more than twenty years (Burns and Greenish, 1993; Nightingale, 1994; Beech,  
100 1996; Garland and Jones, 1997), there remains a paucity of qualitative research conducted in this  
101 area. Globally waterbirth is gaining appeal, despite continuing opposition to waterbirth in some  
102 countries, most significantly the United States of America (USA) (Harper, 2014). Elsewhere doctors  
103 and midwives are championing the opportunity for women to give birth in water (in a variety of  
104 forms) in more than 90 countries including Japan, Russia, Belgium, Germany, Austria, Malta and  
105 Switzerland (Harper, 2014; Garland, 2006). Recently, studies exploring waterbirth and its effects  
106 have been published from countries including Iran (Kavosi *et al*, 2015), South Africa (Ros, 2009) and  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116

119  
120  
121 Australia (Maude and Foureur, 2007). They promote positive outcomes when childbirth occurs in  
122  
123 water and begin to provide evidence of a mounting appeal for women around the world. Cochrane  
124  
125 reviews exploring RCT's failed to find evidence of adverse effects for the neonate or the woman who  
126  
127 gave birth in water but also remained inconclusive regarding any benefits (Cluett *et al*, 2018; Cluett  
128  
129 and Burns, 2009). Currently therefore, National Institute for Health and Care Excellence (NICE, 2014)  
130  
131 guidelines support the practice of water immersion during labour but suggest women should be  
132  
133 informed there is 'insufficient high-quality evidence to support or discourage giving birth in water'  
134  
135 (NICE, 2014:61).  
136  
137

138  
139 Past decades have witnessed an increasing influence of support for women's choice regarding how  
140  
141 they experience labour and birth (NHS England, 2016; DoH, 2007; DoH, 1993). Nationally in the UK  
142  
143 the NHS Constitution (DH, 2015) is a driver for service users to be placed at the heart of the NHS and  
144  
145 women and their families at the centre of maternity services (Wenzel and Jabbal, 2016; NHS England,  
146  
147 2016). Individualised choice is a central concept within maternity services in the UK and one of the  
148  
149 nine workstreams identified within the Maternity Transformation Programme (NHS England, 2016).  
150  
151 This continuing and strengthening agenda for personalisation and choice in childbirth has  
152  
153 contributed to the growth of birthing pool provision in maternity units across the United Kingdom.  
154  
155 Whilst statistics are not currently collected nationally for rates of waterbirth, reports reveal an  
156  
157 increase in the number of women who make the choice to use water for pain relief in labour (Care  
158  
159 Quality Commission, 2015:42), with a smaller associated increase in those choosing to birth in water  
160  
161 (Care Quality Commission, 2015:39). Despite this, the number of women choosing birth in water  
162  
163 remains low relative to the overall physiological birth rate of 56% (NHS Digital, 2018) and little is  
164  
165 known about the motivations of this smaller group of women. The aim, therefore, was to undertake  
166  
167 a meta-synthesis of the findings from qualitative research studies which sought the views of women  
168  
169 who had birthed in water. This understanding is pertinent when supporting women who birth in  
170  
171 water.  
172  
173  
174  
175  
176  
177

178  
179  
180 **2.Methodology**  
181  
182

183 Findings from qualitative studies have important implications for knowledge development assisting  
184 in providing a more complete understanding of a phenomena (Campbell *et al*, 2011). To have impact  
185 however, they must be situated in a larger interpretive context such as a meta-synthesis  
186 (Sandelowski *et al*, 1997). Epistemologically, meta-synthesis supports an interpretivist approach  
187 (Heyman, 2009), contributes to the development of more formalised knowledge (Zimmer, 2006) and  
188 seeks to enhance the focus of this review. Several methods for synthesising qualitative research have  
189 emerged over recent years including meta-narrative, critical interpretive synthesis, grounded formal  
190 theory and thematic synthesis (Barnett-Page and Thomas, 2009). This critique of empirical qualitative  
191 literature is aligned to Noblit and Hare's (1988) seminal work of meta-ethnography, synthesising  
192 methodological congruent research studies to form a 'whole'.  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202

203  
204 Keen to avoid reductionism, Walsh and Downe (2005:205) refer to the ability for such synthesis to  
205 'open up spaces for new insights and understandings to emerge' with the ability to generate multi-  
206 layered context not seen in individual studies (Sandelowski *et al*, 1997). Noblit and Hare (1998) cite  
207 three methods of synthesis within meta-ethnography; reciprocal translational analysis (RTA);  
208 refutational synthesis; and Lines-of-argument (LOA). RTA is used here due to its ability to translate  
209 concepts from individual studies into one another ultimately identifying overarching concepts,  
210 thereby enhancing our understanding of waterbirth.  
211  
212  
213  
214  
215  
216  
217  
218

219 **2.1 Methods - literature search strategy**  
220

221  
222 A systematic literature search was conducted with search parameters of publications between 2003  
223 and 2018. The search strategy is outlined here in detail to include the authors rationale for inclusion  
224 or exclusion of studies to aid transparency and authenticity of the final account. A combination of  
225 search strategies were adopted to maximise the identification of relevant studies. The aim of the  
226 review was to identify primary research studies which explored waterbirth. Database searching using  
227 keywords, titles and abstracts were conducted using the databases: British Nursing Index (BNI),  
228  
229  
230  
231  
232  
233  
234  
235  
236

237  
 238  
 239 Cumulative Index to Nursing and Allied Health Literature (CINAHL), Allied and Complementary  
 240  
 241 Medicine Database (AMED), Maternity and Infant Care (MIDIRS), Medical Literature Analysis and  
 242  
 243 Retrieval System Online (MEDLINE), Applied Social Sciences Index and Abstracts (ASSIA) and Web of  
 244  
 245 Science. Search terms were used across all databases and are included in Table 1. Manual searches  
 246  
 247 were also carried out using citations of the selected studies to identify further papers. Grey literature  
 248  
 249 was searched using the ETHoS thesis database to identify any unpublished works and specialist sites  
 250  
 251 including the Royal College of Midwives (RCM) and the National Childbirth Trust (NCT). Reference  
 252  
 253 lists from resulting articles and book chapters were scanned to ensure that no relevant studies were  
 254  
 255 missed and in addition regular electronic journal alerts and manual searches of key midwifery  
 256  
 257 journals were used to survey newly published material.  
 258  
 259  
 260

261 **Table 1: Terms used to search the literature**

263 ("waterbirth" OR "water birth" OR "water-birth" OR "water" OR "birth in water" OR "birth 264 underwater" OR "underwater birth" OR "birthing pool")
265 266 AND ("labour" OR "labor")
267 268 AND ("childbirth" OR "child birth" OR "child-birth" OR "birth" OR "delivery")
269 270 AND ("women" OR "woman" OR "mother" OR "mothers" OR "motherhood" OR "maternal")
271 272 AND ("midwifery" OR "midwife" OR "midwives" OR "maternity" OR "maternity care")
273 274 AND ("experience" OR "perception")
275 276 277

278  
 279  
 280 The inclusion and exclusion criteria for study selection were set whereby papers were selected for  
 281  
 282 inclusion if they, sought women's views and experiences of birth in water, waterbirth, and were  
 283  
 284 published in English. Those qualitative studies that reported on use of water immersion solely during  
 285  
 286 the first stage of labour; as a form of complementary and alternative therapy in childbirth; or as a  
 287  
 288 form of non-pharmacological pain relief in labour were excluded as these were all considered to be  
 289  
 290 different phenomena to that of waterbirth.  
 291  
 292  
 293  
 294  
 295

296  
297  
298 Walsh and Downe (2006) recognise that the qualitative researcher's interpretation of data is  
299  
300 legitimately influenced by prior beliefs and requires a high degree of reflexivity. To this end the  
301  
302 authors acknowledge personal preconceptions that; waterbirth is valued by many of the women who  
303  
304 choose it; historically and currently it is situated as an 'alternative' form of childbirth; and it is often  
305  
306 viewed as synonymous with physiological birth. Considering these preconceptions and with the aim  
307  
308 of maximising credibility of the interpretations, established techniques were used to support the  
309  
310 robustness of each stage of the synthesis process. Both data saturation and actively searching for  
311  
312 disconfirming data were employed during analysis.  
313

## 314 315 **2.2 Quality Appraisal** 316

317  
318 Each study was reviewed according to criteria described by Walsh and Downe (2005) as a means of  
319  
320 providing a standardised mechanism for appraisal. Appraising each study for its scope and purpose;  
321  
322 study design and sampling strategy used; analysis and interpretive framework; issues relating to  
323  
324 reflexivity and ethics; the relevance and transferability of the study; and a narrative summary of the  
325  
326 study's quality (Walsh and Downe, 2005).  
327

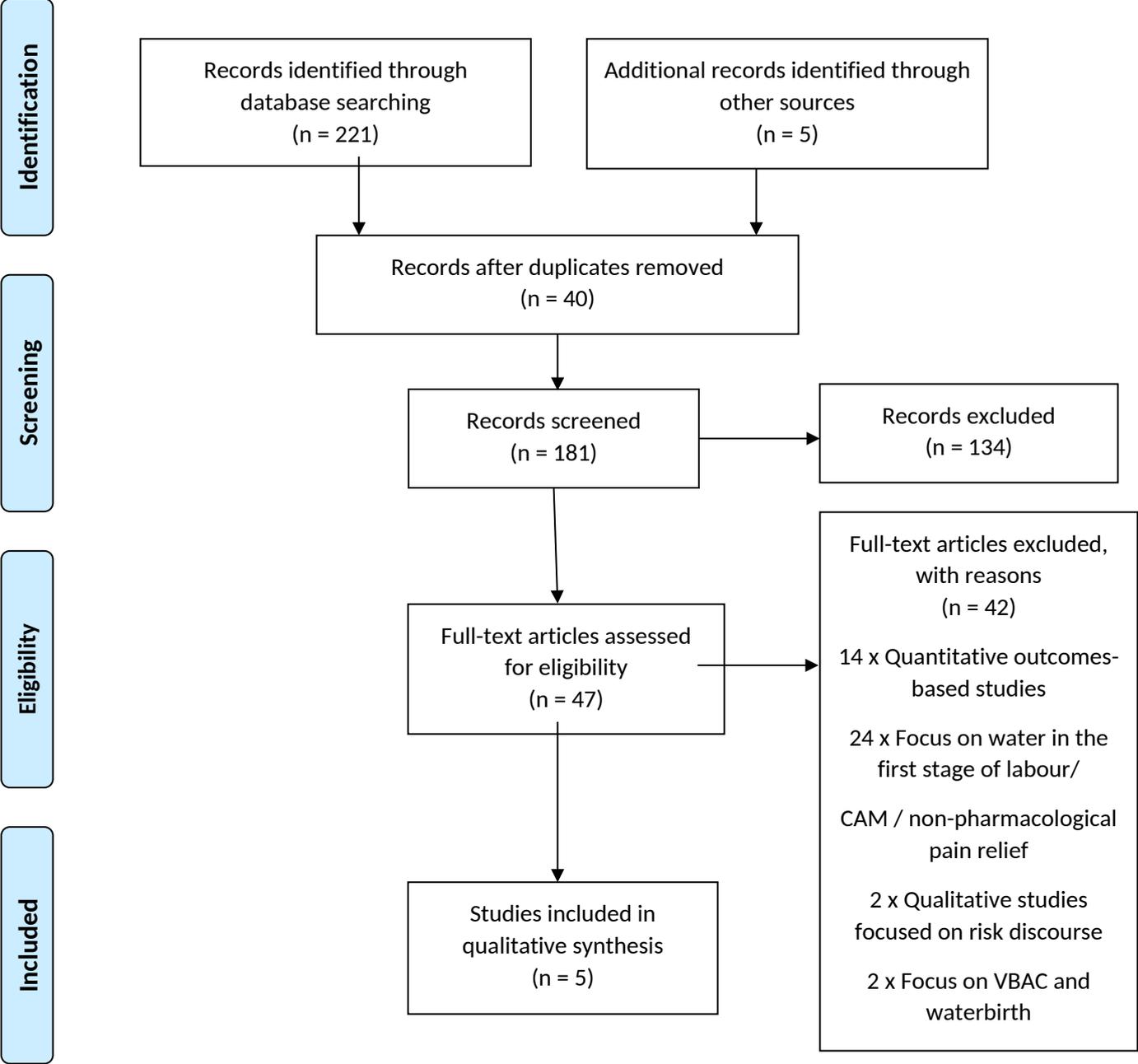
328  
329 No studies were excluded from this literature review based on quality appraisal. It was acknowledged  
330  
331 however that, the research by Wu and Chung (2003) fails to clearly outline the ethical approval  
332  
333 obtained to undertake the study and therefore their findings were viewed with caution. The same  
334  
335 study is acknowledged as being analytically weak, most likely attributed to having been undertaken  
336  
337 and published now over 15 years ago. Whilst four of the five studies focused on women's views and  
338  
339 experiences of waterbirth the study by Lewis *et al* (2018) also explored a larger sample of women  
340  
341 who had not achieved a waterbirth in their study (see table 2).  
342

## 343 344 **3.Results** 345

346  
347 Eligible papers were short listed and full-text articles accessed. Two hundred and twenty-one records  
348  
349 were identified through database searching and an additional 5 were identified through other  
350  
351 sources. After removing duplicates (n= 40), 181 records remained and were screened using  
352  
353  
354

355  
356  
357 keywords, title and abstracts. Following screening, 134 studies were excluded on the basis they did  
358  
359 not report primary research resulting in 47 full-text articles being read to assess for eligibility. Forty-  
360  
361 two studies were excluded resulting in a total of 5 primary research studies which met the criteria for  
362  
363 inclusion (see figure 1). Five qualitative studies seeking the views of women who had experienced  
364  
365 waterbirth were reviewed (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude and  
366  
367 Foureur, 2007; Wu and Chung, 2003).  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413

Figure 1: PRISMA (2009) flow diagram showing review process



473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513

**Table 2: Summary of qualitative papers exploring women’s experiences of waterbirth**

Study reference	Aim	Participants	Method of data collection	Method of analysis	Recruitment, setting, context	Country
Ulfsdottir <i>et al</i> (2018)	Aimed to describe women’s experience and perception of giving birth in water	20 women, 12 primigravid and 8 multigravid women	In-depth interviews	Content analysis	Women were recruited having birthed in a clinic in Stockholm	Sweden
Lewis <i>et al</i> (2018)	To explore the perception and experience of women who achieved or did not achieve their planned waterbirth	296 women were included. 93 women achieved a waterbirth and 203 did not achieve a waterbirth	Semi-structured interviews	Thematic analysis	Women were recruited from a birth centre of the tertiary public maternity hospital in Western Australia	Australia
Waters (2011)	Aimed to understand the perspectives and experiences of women who chose to give birth in water and post their birth videos publicly on YouTube.	16 parents who had birthed in water and posted a live video of this on YouTube.	Skype audio semi-structured interviews	Thematic	Participants were contacted by the researcher with an invitation letter via their YouTube handle.	USA
Maude and Foureur (2007)	Aimed to give ‘voice’ to women’s experiences of using water for labour and birth.	5 women who had used water for labour and birth at home or in the hospital.	Interviews	Thematic	Women were recruited from an urban region of New Zealand if they had	New Zealand

514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554

					experienced waterbirth at home or in hospital	
Wu and Chung (2003)	Aimed to explore the decision-making experience of mothers selecting waterbirth.	9 women who had given birth in water in one maternity unit in the past 12 months	Questionnaire Interviews	Giorgi's phenomenological method	Women were recruited if they had experienced waterbirth in one midwife-clinic	Taiwan

555  
556  
557 The five studies included all identified as following an interpretive methodology. Methodological  
558 approaches varied, Wu and Chung (2003) adopted a phenomenological approach, Lewis *et al* (2018)  
559 an exploratory design using critical incident techniques and three of the studies broadly identify as  
560 either qualitative research or interpretive inquiry (Ulfsdottir *et al*, 2018; Waters, 2011; Maude and  
561 Foureur, 2007). Qualitative methods used for purposes of data collection from women, most  
562 commonly involved semi-structured or unstructured interviews (Ulfsdottir *et al*, 2018; Lewis *et al*,  
563 2018; Waters, 2011; Maude and Foureur, 2007; Wu and Chung, 2003).

571  
572 The studies focussed on the experience of total of 330 women (Ulfsdottir *et al*, 2018; Lewis *et al*,  
573 2018; Maude and Foureur, 2007; Wu and Chung, 2003), a further 16 'parents' participated in Waters  
574 (2011) study and whilst she fails to define this term she does identify some participants as 'mothers'.  
575 The smallest sample size was in Maude and Foureur's (2007) study with 5 participants, whilst the  
576 largest sample was in Lewis *et al*'s (2018) study which reported on 296 women, 93 of whom achieved  
577 a waterbirth.

578  
579 The five studies represented the views of women 5 five different countries, one from Sweden  
580 (Ulfsdottir *et al*, 2018), one from Australia (Lewis *et al*, 2018), one from New Zealand (Maude and  
581 Foureur, 2007), one from Taiwan (Wu and Chung, 2003) and one from the United States of America  
582 (USA) (Waters, 2011). Whilst Waters (2011) was based in the USA and most participants were  
583 recruited from different states in the US (n=11), five participants were from other countries  
584 including, Canada, New Zealand, Australia (n=2) and the UK.

585  
586 One of the studies exploring women's views of waterbirth were published 15 years ago (Wu and  
587 Chung, 2003) illustrating a paucity of current research studies in this area and providing a rationale  
588 for this review. Recruitment to the studies were most often directly through a maternity unit where  
589 waterbirths occurred (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Maude and Foureur, 2007; Wu and  
590 Chung, 2003), and one used a media platform to recruit women from a variety of different countries  
591 (Waters, 2011).

#### 4.Findings

Following review of the five papers, four overarching concepts were formed (see table 3) which traversed the studies exploring women's experiences of waterbirth.

**Table 3: Women's experiences of waterbirth - reciprocal translational analysis**

Overarching concepts				
Study reference	Knowledge of waterbirth	Intuitive knowledge of physiological birth	Water, autonomy and control	Waterbirth: easing the transition
Ulfsdottir <i>et al</i> (2018)	*	*	*	*
Lewis <i>et al</i> (2018)	*	*	*	*
Waters (2011)	*	*	*	
Maude and Foureur (2007)	*	*	*	
Wu and Chung, (2003)	*	*	*	

These overarching concepts represent an interpretation across the studies exploring women's perceptions and experiences of waterbirth. Presenting these concepts in this meta-synthesis we respect and represent the context intended in the original studies whilst still allowing for synthesis of the studies to emerge. The need to remain "close" to the primary data presented in the studies leads us to use the original quotes to illustrate each concept.

#### 4.1 Labour and birth in water: women's experiences

Five studies focussed on women's experiences of labour and birth in water (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude and Foureur, 2007; Wu and Chung, 2003). Initial concepts developed into emerging themes and ultimately four main themes were identified across the studies

673  
674  
675 that of: women's knowledge of waterbirth; women's perceptions of physiological birth; women's  
676  
677 sense of autonomy and control; and waterbirth: easing the transition (see table 3).  
678

#### 679 4.1.1 Women's knowledge of waterbirth

680  
681  
682 All the studies (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude and Foureur, 2007; Wu  
683  
684 and Chung, 2003) identified women's knowledge of waterbirth as fundamental in their decision for  
685  
686 choosing to birth this way. Many of the women in Waters's (2011) study spoke of the memorable  
687  
688 impression reading natural childbirth books by authors such as Ina May Gaskin and Sheila Kitzinger,  
689  
690 had impressed on them in pregnancy. One of the women in the study went so far as to state that:  
691  
692

693  
694 *.....that the thought of interventions and pharmaceutical pain relievers never entered [my]*  
695  
696 *mind because of the powerful physiological effects of water (Waters, 2011:6)*  
697

698  
699 In Wu and Chung's (2003) study, women identified with a need to enhance the knowledge of their  
700  
701 partner as particularly important, suggesting a relational component to the study which moves away  
702  
703 from traditional concepts of autonomy towards the concept of relational autonomy. This joint  
704  
705 increase in knowledge fostered support for the choice of waterbirth and enhanced the woman's  
706  
707 confidence in her ability to birth in water.  
708

709  
710 *I passed some reports about waterbirth to him and asked him to accompany me when I had*  
711  
712 *my antenatal exams at the midwifery clinic, where he would watch videos and read relevant*  
713  
714 *information. Hence he became less worried after he had more knowledge about waterbirth.*  
715  
716 *(Wu and Chung, 2003: 265)*  
717

718 Women in Waters's (2011) study also actively researched waterbirth:

719  
720 *.....[I] engaged in in-depth self-directed research on natural childbirth and discovered*  
721  
722 *waterbirth (Waters, 2011: 5)*  
723  
724  
725  
726  
727  
728  
729  
730  
731

732  
733  
734 In particular, media influence was an emerging sub-theme in two of the studies (Lewis *et al*, 2018;  
735 Waters, 2011). Women cite 'online' content and childbirth documentary television shows as  
736  
737 influential in their knowledge, understanding and choice to birth in water:  
738  
739

740  
741 *[I] had seen it online.....[I] saw videos and wanted a beautiful experience.....[I] saw on*  
742  
743 *One Born Every Minute* (Lewis *et al*, 2018:6)  
744

745  
746 The role of 'YouTube' formed the basis of Waters' (2011) ethnographic study which identified media  
747  
748 as a major influence in the promotion of waterbirth. In this study women credit the internet as a  
749  
750 means by which birth networking and education was enabled. This suggests the potential for  
751  
752 waterbirth to be 'visible' to a larger audience involving all groups in societies due to the visual as well  
753  
754 as audio nature of digital media:  
755

756  
757 *I chose to post the video on YouTube.com because the videos that I had watched during both*  
758  
759 *pregnancies were so helpful and I wanted to be able to provide that for other women who are*  
760  
761 *looking to have a homebirth or waterbirth* (Waters, 2011:3)  
762

763  
764 Waters (2011) referred to the Internet as an educational tool providing women with the opportunity  
765  
766 to access information that in previous decades would have been hidden and inaccessible to them.  
767  
768 Suggesting it presents the opportunity to drive social change and alter traditional forms of  
769  
770 authoritative cultural knowledge surrounding 'decision making' during childbirth. Instead, offering  
771  
772 the creation of a new, experiential paradigm contrary to the dominant medicalised paradigm of birth  
773  
774 prevalent in the USA (and many other countries). Waters (2011) suggests her participants valued the  
775  
776 authoritative worth placed in the voices of other mothers.  
777

778  
779 The studies explored in this theme suggest that women's knowledge of waterbirth has increased  
780  
781 significantly over past decades due to greater visibility within the media particularly from  
782  
783 programmes such as 'One Born Every Minute'. Along with increased access to the internet,  
784  
785 'YouTube', enables individuals to post their video of childbirth in water allowing it to be seen by  
786  
787 women around the world. This desire to share and support other women to experience childbirth in  
788  
789

791  
792  
793 a way that is individualised and meaningful to them may challenge traditional and often more  
794  
795 medicalised forms of authoritative knowledge of childbirth.  
796

#### 797 798 4.1.2 Women's perception of physiological birth 799

800  
801 All the studies identified women's intuitive knowledge in choosing waterbirth as a fundamental  
802  
803 element of physiological birth (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude and  
804  
805 Foureur, 2007; Wu and Chung, 2003). In Waters (2011) study a woman refers to the feeling that  
806  
807 maternity protocols did not meet her needs and desires for childbirth:  
808

809 *The more I watched videos of Baby Story and saw everybody go through epidural, add*  
810 *[syntocinon], add more epidural and then get a c-section and nobody seemed to blink an eye*  
811 *that there was something wrong with that, I was little by little getting more uncomfortable*  
812 *with the idea of birthing in the hospital (Waters, 2011:6)*  
813  
814  
815  
816  
817

818 This sentiment is echoed by women in Wu and Chung's (2003) study:  
819

820  
821 *We were born with the ability to deliver naturally, not necessarily by CS (Wu and Chung,*  
822 *2003: 266)*  
823  
824  
825

826 All studies refer to waterbirth as supporting the physiology of childbirth some women viewed this as  
827  
828 more 'natural' in some way:  
829

830 *...they wanted the most natural birth possible involving a natural experience or a natural*  
831 *holistic approach (Lewis et al, 2018: 5)*  
832  
833  
834

835 Maude and Foureur (2007) identified the connection women had with water on an intuitive level as  
836  
837 one of the women in the study who spoke of delaying childbirth until the pool had arrived at her  
838  
839 house later that day:  
840

841  
842 *.....some of it was that I knew that everything wasn't ready yet, everything wasn't there that I*  
843 *needed, so I kind of just slowed down and waited.... (Maude and Foureur, 2007:19)*  
844  
845  
846  
847  
848  
849

850  
851  
852 Many women had difficulty however in articulating exactly how waterbirth positively affected their  
853  
854 experience. Maude and Foureur (2007) refer to the balance created by the soothing warmth of the  
855  
856 water, the support of the body and the pleasurable sensation of water which stimulates closing the  
857  
858 gate for pain at the level of the dorsal horn. They suggest these elements experienced by the woman  
859  
860 in water appeared to provide a 'temporal stabilising effect' whereby a natural balance between pain  
861  
862 and relaxation was achieved:

863  
864  
865 *It [the water] made me feel better. It didn't really take the edge off the pain I don't think; it*  
866  
867 *made me feel much better in myself (Maude and Foureur, 2007: 22)*  
868

869  
870  
871  
872  
873 Maude and Foureur (2007) refer to the spiritual connection women from certain cultural groups may  
874  
875 have with water prior to childbirth. Their study participants were from Pakeha and New Zealand  
876  
877 European groups many of whom attribute spiritual importance of Maori birthing. Many women will  
878  
879 connect with water prior to pregnancy and birth as Ulfsdottir *et al* (2018) identify:

880  
881  
882 *Yes it was like lying in my own womb with the water against my body in all directions, like in*  
883  
884 *a small corner or nest perhaps..... (Ulfsdottir et al, 2018: 28)*  
885

886  
887 The idea within this theme that some women may instinctively connect water with 'natural' or  
888  
889 physiological birth suggests that this birth option needs to continue to be available to women and  
890  
891 supported both by midwives and national policy.

#### 892 893 4.1.3 Water, autonomy and control 894

895  
896 All the studies, in varying degrees, report on women's choice of waterbirth as a means for autonomy  
897  
898 and control over their birth experience (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude  
899  
900 and Foureur, 2007; Wu and Chung, 2003). Centrally these concepts transcend all the studies but are  
901  
902 referred to by Maude and Foureur (2007) in terms of 'sanctuary', 'alternatives' and 'milieu', whilst  
903  
904 Ulfsdottir *et al* (2018) describe women's sense of autonomy birthing in water as an empowering  
905  
906

909  
910  
911 'micro-home'. With women identifying positive physical and mental benefits originating from the  
912  
913 control they experienced during their waterbirth:

914  
915  
916 *You experience that you have more control over your body when you are in water (Ulfsdottir*  
917  
918 *et al, 2018: 28)*

919  
920 Water afforded women a sense of mental relaxation enabling them to cope with their contractions,  
921  
922 in turn fostering feelings of autonomy:

923  
924  
925 *This thing about timing the contractions eh..... it was just chaos. And that was what changed*  
926  
927 *when I arrived and when I got down into the bath. It became more obvious. The whole labour*  
928  
929 *became, it dawned on me how I could manage it, even if nobody told me (Ulfsdottir et al,*  
930  
931 *2018:28)*

932  
933 For many women the choice for waterbirth, affording autonomy and control was a direct reaction to  
934  
935 a previous negative birth with one woman stating:

936  
937  
938  
939 *It felt like this was giving birth for real. Last time I was totally anesthetized (Ulfsdottir et al,*  
940  
941 *2018: 29)*

942  
943  
944 *.....ended up getting an epidural during birth when the intention had been to give birth*  
945  
946 *naturally. After this birth [I] was left feeling like birth was meant to be a different*  
947  
948 *way.....(Waters, 2011: 5)*

949  
950  
951 *First birth difficult - occiput posterior with trial of forceps. Had epidural at 8cm, wanted a*  
952  
953 *simpler, more natural birth, a waterbirth was what I had hoped for (Lewis et al, 2018:5)*

954  
955 Participants in Wu and Chung's (2003) study cited dissatisfaction with current medical care in Taiwan  
956  
957 at the time. This led directly to the desire for waterbirth, an active choice made in direct opposition  
958  
959 to childbirth practice which frequently promoted caesarean section (Wu and Chung, 2003).  
960  
961  
962  
963  
964  
965  
966  
967

968  
969  
970 *I carefully examined the information about both deliveries at hospitals and childbirth*  
971 *methods outside hospitals. I decided to choose waterbirth in the last month of my pregnancy.*  
972  
973  
974 *I received antenatal examinations at both hospitals and midwifery clinics. So it was not the*  
975 *way other people said – that I did it simply as an idea! (Wu and Chung, 2003: 264-265)*  
976  
977  
978

979 The study found that women employed strategies to achieve their goal of waterbirth when views of  
980 relatives did not support this practice due to the dominant concept in Taiwan that birth by caesarean  
981 was the safe option (Wu and Chung, 2003). Women engaged these strategies which centred around  
982 showing relatives reports about waterbirth or encouraging them to speak to the midwife about it. If,  
983 however such attempts to influence relatives into a positive consensus were unsuccessful some  
984 women would conceal their intentions until after the waterbirth had occurred.  
985  
986  
987  
988  
989  
990

991  
992 *The pressure came not only from my husband's parents but also my friends. They had no*  
993 *reason to object to my plan since they certainly had less knowledge about waterbirth than I*  
994 *did (.....) All I wanted to do was achieve my goal. So, I kept a low profile during the whole*  
995 *process.....I was willing to put up with any stress in order to achieve my dignity of my life.*  
996  
997  
998  
999  
1000  
1001 *(Wu and Chung, 2003: 265)*  
1002

1003 The same was true in Waters (2011) study whereby one of the women, rather than receive the free  
1004 maternity care provided by the Canadian government (meaning she would need to birth in hospital),  
1005 paid \$2,500 to ensure her choice to have a waterbirth at home. She spoke of her desire;  
1006  
1007  
1008  
1009

1010 *.....avoid another incident of having [my] membranes ruptured artificially, being augmented*  
1011 *with [syntocinon], or being pressured to birth in the lithotomic position (Waters, 2011: 5)*  
1012  
1013

1014 Maude and Fourer (2007) refer to the water creating a barrier, protecting them from intervention  
1015 and offering privacy and control. One woman recalls how she moved to the far side of the pool so no  
1016  
1017  
1018  
1019 one could touch her:  
1020  
1021  
1022  
1023  
1024  
1025  
1026

1027  
1028  
1029 *Every time I had a contraction I'd move.....and away from them as well, they couldn't*  
1030  
1031 *reach me-when I didn't need them, there was no way they could have touched me because I*  
1032  
1033 *was over the other side of the pool.....I was no where near anyone else (Maude and*  
1034  
1035 *Foureur, 2007:22)*  
1036  
1037

1038 All the women in this study referred to water as a protective place, one woman sinking her ears  
1039 under the water so she could avoid listening to what the midwife was telling her. Throughout, she  
1040 reiterated the protective nature of water describing it as a "cocoon" (Maude and Foureur, 2007:22):  
1041  
1042  
1043

1044  
1045 *It was my space. Every time [the midwife] made me stand up.....so she could listen to the*  
1046  
1047 *heart rate and stuff it was like, as soon as she was finished, I was back down in the water so I*  
1048  
1049 *could get away from all that stuff that was going on. I think the water was more about being*  
1050  
1051 *able to block everything out in between and being able to completely relax..... (Maude and*  
1052  
1053 *Fourer, 2007:22)*  
1054

1055  
1056 *.....so I had the whole enclosed warmth and yeah, the support of the water, yeah, it was my*  
1057  
1058 *space (Maude and Fourer, 2007:21)*  
1059

1060 Similarly, this protective place is identified by Ulfsdottir *et al* (2018) which they term as 'a free zone'  
1061 whereby the water promotes feelings of safety and security for the women:  
1062

1063  
1064  
1065 *I think you withdraw from the rest of the world in some way. That is also how it works when*  
1066  
1067 *you take a bath, you get time for yourself exclusively (Ulfsdottir et al, 2018: 28)*  
1068

1069  
1070 Wu and Chung (2003) identified the importance of being afforded autonomy to choose waterbirth. A  
1071 demonstration of the women's attempts to identify birthing methods residing 'outside' of the normal  
1072 systems. Women referred to accepting the "consequences" in pursuit of "achieving their goal" (Wu  
1073 and Chung, 2003:265) suggesting a strong sense of autonomy and a need to experience a waterbirth:  
1074  
1075  
1076  
1077

1078  
1079 *My husband supposes that every mother should be able to have a normal spontaneous*  
1080  
1081 *delivery. When one goes to hospital, the doctor cannot wait too long, so they will perform a*  
1082

1086  
1087  
1088 *CS after a certain point of time.....(pause). My labor pains were so hard to bear then, that I*  
1089 *might have changed my mind (.....) I had to insist [on waterbirth], otherwise all my efforts*  
1090 *would have been in vain.....Why I insisted was because doctors dominate everything at*  
1091 *hospitals (Wu and Chung, 2003: 264)*

1092  
1093  
1094  
1095  
1096  
1097 For others that goal to experience waterbirth was the culmination of their childbearing journey  
1098 reflected by a woman in Lewis *et al's* (2018) study:

1099  
1100  
1101  
1102 *This was the last baby I planned and so wanted it to be memorable, I wanted a different*  
1103 *experience than last time (Lewis et al, 2018:5)*

1104  
1105  
1106  
1107 Achieving such a level of autonomy appeared to enable a woman in Water's (2011) study to attribute  
1108 positive physical outcomes to the experience suggesting the lack of [perineal] tearing when birthing a  
1109 ten-pound baby was due to birth occurring in water:

1110  
1111  
1112  
1113 *.....allowing [me] to be in a really good position [squatting] for birthing without physically*  
1114 *being really tiring (Waters, 2011:6)*

1115  
1116  
1117  
1118 This theme of autonomy and control when a waterbirth was achieved was identified across all the  
1119 studies and was significant. Many of the studies identified the terms 'autonomy' and 'control'  
1120 directly in their findings (Ulfsdottir *et al*, 2018; Wu and Chung, 2003) whilst others defined these as  
1121 'authoritative knowledge' (Waters, 2011), 'affirming' and 'empowering' (Lewis *et al*, 2018) and one of  
1122 'sanctuary' (Maude and Foureur, 2007). This desire for waterbirth resonated strongly with many of  
1123 the women in the studies resulting in the potential for them to actively chose to experience  
1124 emotional or financial strain to achieve it.

#### 1125 1126 1127 1128 1129 1130 1131 1132 1133 4.1.4 Waterbirth: easing the transition

1134  
1135  
1136 An emerging theme identified within two of the five studies (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018)  
1137 refers to women's belief that water eased the transition during childbirth and even that being born in  
1138 water was 'better' for the baby. Both studies refer to this in terms of waterbirth being, more familiar  
1139  
1140  
1141  
1142  
1143  
1144

1145  
1146  
1147 for the baby (Lewis et al, 2018) and as a gentler transition for the baby from the amniotic fluid in  
1148  
1149 utero into the water (Ulfsdottir et al, 2018).  
1150

1151  
1152 *I also think that maybe it was nice for the baby.....that it was not as shocking for her to come*  
1153  
1154 *out (Ulfsdottir et al, 2018:29)*  
1155

1156  
1157 *I think it changes the experience for the baby. It's good for the baby to go from water to*  
1158  
1159 *water. It makes sense to me (Ulfsdottir et al, 2018:29)*  
1160

1161  
1162 *It's a similar environment to the womb and calm for the baby (Lewis et al, 2018: 5)*  
1163

1164 Both studies (Ulfsdottir et al, 2018; Lewis et al, 2018) also identified the importance for women to  
1165  
1166 facilitate the birth of their baby themselves which was also seen as a way to ease transition  
1167

1168  
1169 *I wanted to be able to deliver my own baby, I love the idea of being immersed in water and*  
1170  
1171 *baby being delivered into the water (Lewis et al, 2018:5)*  
1172

1173 Supported further by Ulfsdottir et al (2018) who refer to the lack of guidance women needed to  
1174  
1175 deliver their own baby.  
1176

1177  
1178 *Then the head was crowing, and the midwife asked if I wanted to take my baby out myself.*  
1179

1180  
1181 *And I got to do that, and it was so cool to pull up my baby and then we were lying there*  
1182  
1183 *together (Ulfsdottir et al, 2018:)*  
1184

1185  
1186 *My first baby was a beautiful experience I wanted to repeat. Scooping baby up onto chest*  
1187  
1188 *from water such a great moment (Lewis et al, 2018:5)*  
1189

1190 This theme of waterbirth: easing the transition speaks a sense from women that birth in water is less  
1191  
1192 demanding for them and their newborn offering a sense of familiarity.  
1193

## 1194 **5 Summary of Findings / Discussion**

1195

1196  
1197 This review has synthesised the findings of five qualitative empirical studies on women's experiences  
1198  
1199 of waterbirth (Ulfsdottir et al, 2018; Lewis et al, 2018; Waters, 2011; Maude and Foureur, 2007; Wu  
1200

1204  
1205  
1206 and Chung, 2003) and reveals women present positive experiences of waterbirth when their  
1207  
1208 perspectives are sought. Only one of the studies (Lewis *et al*, 2018) interviewed both, women who  
1209  
1210 experienced waterbirth as well as those who wanted but were unable to achieve it. The experiences  
1211  
1212 of the second group have not been considered as part of this review as they represent 'difference' to  
1213  
1214 the aim of the article. It is recommended in the future the views of these women are considered to  
1215  
1216 add to our understanding of how women perceive waterbirth.  
1217

1218  
1219 A major strength of this review is that it explores the experiences of women who have birthed in  
1220  
1221 water, providing understanding of their perception of waterbirth and insights into factors that may  
1222  
1223 influence their choice. We identified a sense that the women viewed physiological birth and  
1224  
1225 waterbirth synonymously and appreciated the ability to access information and knowledge  
1226  
1227 surrounding both. The experience of waterbirth was valued by the women offering them the  
1228  
1229 opportunity to exercise autonomy in their birth choice in turn, affording feelings of control coupled  
1230  
1231 with the sense that they were easing the transition for their newborn.  
1232

1233  
1234 There are a growing number of cohort studies demonstrating positive benefits of water immersion  
1235  
1236 (Ulfsdottir *et al*, 2018; Sidebottom *et al*, 2019). These findings are not currently supported by the  
1237  
1238 significant body of quantitative literature on waterbirth which identifies the risk of cord avulsion and  
1239  
1240 remains inconclusive regarding quantifiable benefits (Cluett *et al*, 2018; Cluett and Burns, 2009). This  
1241  
1242 review found that the women in these studies viewed their experience of waterbirth positively  
1243  
1244 (Ulfsdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude and Foureur, 2007; Wu and Chung,  
1245  
1246 2003; Richmond, 2003). Critically it illustrates how some women can actively benefit from a positive  
1247  
1248 birth experience when their choice to deliver in water is achieved. This is an important finding  
1249  
1250 suggesting waterbirth is an illustration of how choice has a positive benefit on women's emotional  
1251  
1252 wellbeing.  
1253

1254  
1255 A major strength of this review is in its contribution to our knowledge in the area of waterbirth  
1256  
1257 enhancing our understanding of the woman's perspective. It explores the experience and  
1258  
1259  
1260  
1261  
1262

1263  
1264  
1265 perceptions of women who have birthed in water. It provides insight into factors that may influence  
1266  
1267 women who decide to birth in water and highlights how women who do birth in water recall an  
1268  
1269 enhanced sense of autonomy and control. We come to understand that some women will actively  
1270  
1271 seek to gain information on waterbirth researching it from a variety of sources such as the internet,  
1272  
1273 media, midwives and other women; viewing waterbirth as easing the transition for their newborn.  
1274  
1275 As such, it presents important findings for clinical practice and future research. Critically it illustrates  
1276  
1277 how some women can actively benefit from a positive birth experience when it occurs in water  
1278  
1279 (Ulfssdottir *et al*, 2018; Lewis *et al*, 2018; Waters, 2011; Maude and Foureur, 2007; Richmond, 2003;  
1280  
1281 Wu and Chung, 2003).  
1282  
1283

1284  
1285 The meta-synthesis illustrates a gap in the evidence seen in current, qualitative research studies  
1286  
1287 surrounding waterbirth from the emic perspective of the woman. This is an important consideration  
1288  
1289 for clinical practice whereby midwives need to ensure that care provided promotes choice and is  
1290  
1291 woman centred. Future research in this area should also seek to redress the imbalance in the  
1292  
1293 research paradigm adopted. Consideration should be afforded to broadening the range of research  
1294  
1295 methodologies used as well as increasing the number of current qualitative studies seeking the views  
1296  
1297 of women who experience waterbirth. Similarly, there is a need to build on the research exploring  
1298  
1299 the experiences and effects on those women who chose but do not realise waterbirth. There is also  
1300  
1301 scope to widen research in this area to include women who oppose the idea of waterbirth to help  
1302  
1303 gain an understanding of the views of these women.  
1304  
1305

### 1306 **Limitations**

1307  
1308 Earle and Hadley (2017) recognise that there is no single approach agreed when conducting a  
1309  
1310 qualitative systematic review and this review is not without limitations. Like many other qualitative  
1311  
1312 research studies, it is not possible to draw conclusions on causality or generalizability. This meta-  
1313  
1314 synthesis was based on the summary and thematic analysis of the five qualitative research studies  
1315  
1316  
1317  
1318  
1319  
1320  
1321

1322  
1323  
1324 and the findings they identified. Due to the paucity of primary studies in this area we followed the  
1325  
1326 principle of pragmatism, acknowledging that no papers were excluded based on quality appraisal.  
1327  
1328

### 1329 **Conclusion**

1330  
1331  
1332 In conclusion, our understanding of waterbirth and women's experience of it is evolving. This article  
1333 reviewed five qualitative studies published within the last 15 years which explore women's views and  
1334 experiences of waterbirth. All individuals involved in the care of women during childbirth – from  
1335  
1336 policy makers to midwives – should understand the possibility for waterbirth to offer some women a  
1337  
1338 positive experience and memories of childbirth. By increasing women's knowledge of waterbirth as  
1339  
1340 an element of physiological, non-interventionist birth which supports their baby's transition, may  
1341  
1342 increase their sense of autonomy and control and enhance their experience of childbirth.  
1343  
1344  
1345

### 1346 **Acknowledgements and Disclosures**

1347  
1348  
1349 This literature review received no financial assistance.  
1350  
1351  
1352  
1353  
1354  
1355  
1356  
1357  
1358  
1359  
1360  
1361  
1362  
1363  
1364  
1365  
1366  
1367  
1368  
1369  
1370  
1371  
1372  
1373  
1374  
1375  
1376  
1377  
1378  
1379  
1380

1381  
1382  
1383 **References**  
1384  
1385

- 1386 1. Barnett-Page E, Thomas J. Methods for the synthesis of qualitative research: a critical review.  
1387  
1388 BMC Medical Research Methodology. 2009;9(59) doi:10.1186/1471-2288-9-59. Available  
1389 from: <https://bmcmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-9-59>  
1390  
1391
- 1392 2. Beech BAL. Water birth unplugged: Proceedings from the first International Water Birth  
1393  
1394 Conference. In: Beech BAL, editor. International Water Birth Conference; 1995. London:  
1395  
1396 Books for Midwives Press: London; 1996.  
1397
- 1398 3. Bovbjerg ML, Cheyney M, Everson C. Maternal and newborn outcomes following waterbirth:  
1399  
1400 The Midwives Alliance of North America Statistics Project, 2004 to 2009 Cohort. Journal of  
1401  
1402 Midwifery and Women's Health. 2016;61(1):11-20.  
1403
- 1404 4. Burns E. Intrapartum birthing pool use in the UK [Thesis]. Oxford Brookes University; 2014.  
1405  
1406 Available from: <https://ethos.bl.uk/OrderDetails.do?did=3&uin=uk.bl.ethos.741019>  
1407  
1408
- 1409 5. Burns E, Greenish K. Water birth. Pooling information. Nursing Times. 1993;89(8):47-49.  
1410
- 1411 6. Campbell R, Pound P, Morgan M, Dkaer-White G, Britten N, Pill R, Yardley L, Pope C, Donovan  
1412  
1413 J. Evaluating meta-ethnography: systematic analysis and synthesis of qualitative research.  
1414  
1415 Health Technology Assessment. 2011;15(43):1-164.  
1416
- 1417 7. Care Quality Commission. 2015 Survey of Women's Experiences of Maternity Care: Statistical  
1418  
1419 Release. London: CQC; 2015. Available from:  
1420  
1421 [http://www.cqc.org.uk/sites/default/files/20151215\\_mat15\\_statistical\\_release.pdf](http://www.cqc.org.uk/sites/default/files/20151215_mat15_statistical_release.pdf)  
1422
- 1423 8. Cluett ER, Burns E, Cuthbert A. Immersion in water in labour and birth. Cochrane Database of  
1424  
1425 Systematic Reviews. 2018;(Issue 5, Art No: CD000111). Available from:  
1426  
1427 <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000111.pub4/epdf/full>  
1428
- 1429 9. Cluett ER, Burns E. Immersion in water in labour and birth. Cochrane Database of Systematic  
1430  
1431 Reviews. 2009; (Issue 2, Art No:CD000111):1-101.  
1432
- 1433 10. Department of Health. NHS Constitution: the NHS belongs to is all. London, DoH; 2015.  
1434  
1435 Available from:  
1436  
1437  
1438  
1439

1440  
1441  
1442 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/480482/NHS_Constitution_WEB.pdf)  
1443  
1444 [data/file/480482/NHS\\_Constitution\\_WEB.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/480482/NHS_Constitution_WEB.pdf)  
1445

- 1446 11. Department of Health. Maternity Matters: choice, access and continuity of care in a safe  
1447 service. London: Department of Health, Partnerships for Children, Families and Maternity;  
1448 2007.  
1449
- 1450 12. Department of Health. Changing Childbirth (The Report of the Expert Maternity Group).  
1451 London: HMSO; 1993.  
1452
- 1453 13. Earle S, Hadley R. Men's views and experiences of infant feeding: A qualitative systematic  
1454 review. Maternal and Child Nutrition. 2017;14(3):1-13, article no. e12586.  
1455
- 1456 14. Fair C, Crawford A, Latham V. "After having a waterbirth, I feel like it's the only way people  
1457 should deliver babies": The decision-making process of women who plan waterbirth. Journal  
1458 of Women's Health. 2017; 26(4):A18-19. (44) - In the Abstracts from Women's Health 2017  
1459 The 25<sup>th</sup> Annual Congress.  
1460
- 1461 15. Garland D. Revisiting Waterbirth: An Attitude to Care. 2<sup>nd</sup> ed. London: Palgrave MacMillan;  
1462 2017.  
1463
- 1464 16. Garland D. Waterbirth- an international overview: Diane Garland, a freelance UK-based  
1465 midwife lecturer, spoke at the ICM Brisbane Congress and now gives an update on the  
1466 practice of waterbirth around the world. International Midwifery. 2006;19(2):24.  
1467
- 1468 17. Garland D, Jones K. Waterbirth: updating the evidence. British Journal of Midwifery.  
1469 1997;5(6):368-73.  
1470
- 1471 18. Harper B. Birth, Bath, and Beyond: The Science and Safety of Water Immersion During Labor  
1472 and Birth. The Journal of Perinatal Education. 2014;23(3):124 - 134.  
1473
- 1474 19. Heyman B. Reflecting on a meta-synthesis of qualitative papers concerned with pregnant  
1475 women's decision-making about prenatal screening for Down syndrome: A commentary on  
1476 Reid, Sinclair, Barr, Dobbs and Crealey. Social Science and Medicine. 2009; 69(11):1574-1576.  
1477
- 1478 20. Kavosi Z, Keshtkaran A, Setodehzadeh F, Kasraeian M, Khammarnia M, Eslahi M. A  
1479 comparison of mothers' quality of life after normal vaginal, caesarean, and water birth  
1480 deliveries. International Journal of Community Based Nursing and Midwifery. 2015;3(3):198-  
1481 204.  
1482  
1483  
1484  
1485  
1486  
1487  
1488  
1489  
1490  
1491  
1492  
1493  
1494  
1495  
1496  
1497  
1498

- 1499  
1500  
1501  
1502  
1503  
1504  
1505  
1506  
1507  
1508  
1509  
1510  
1511  
1512  
1513  
1514  
1515  
1516  
1517  
1518  
1519  
1520  
1521  
1522  
1523  
1524  
1525  
1526  
1527  
1528  
1529  
1530  
1531  
1532  
1533  
1534  
1535  
1536  
1537  
1538  
1539  
1540  
1541  
1542  
1543  
1544  
1545  
1546  
1547  
1548  
1549  
1550  
1551  
1552  
1553  
1554  
1555  
1556  
1557
21. Lewis L, Hauck YL, Crichton C, Barnes C, Poletti C, Overing H, Keyes L, Thomson B. The perceptions and experiences of women who achieved and did not achieve a waterbirth. *BMC Pregnancy and Childbirth*. 2018;18(23):1-10.
  22. Lukasse M, Rowe R, Townend J, Knight M, Hollowell J. Immersion in water for pain relief and the risk of intrapartum transfer among low risk nulliparous women: secondary analysis of the Birthplace national prospective cohort study. *BMC Pregnancy and Childbirth*. 2014;14(60):1-12.
  23. Maude RM, Foureur MJ. It's beyond water: stories of women's experience of using water for labour and birth. *Women and Birth*. 2007;20(1):17-24.
  24. Menakaya U, Albayati S, Vella E, Fenwick J, Angstetra D. A retrospective comparison of water birth and conventional vaginal birth among women deemed to be low risk in a secondary level hospital in Australia. *Women and Birth*. 2013;26(2):114-118.
  25. Moher D, Liberati A, Altman DG, Tetzlaff, J. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA Statement. *PLoS Med*. 2009;6(7):e1000097.
  26. National Institute for Health and Care Excellence. Intrapartum care for healthy women and their babies. Clinical guidelines. London: NICE; 2014. Available from: <https://www.nice.org.uk/guidance/cg190/resources/intrapartum-care-for-healthy-women-and-babies-35109866447557>
  27. NHS Digital. NHS Maternity Statistics 2017-18: Summary Report. London: NHS Digital; 2018. Available from: <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-maternity-statistics/2017-18>
  28. NHS England. Better Births: Improving outcomes of maternity services in England. A Five Year Forward View for maternity care: National Maternity Review. London: NHS England; 2016.
  29. Nightingale C. Waterbirth in practice. *Modern Midwife*. 1994;4(1):15-19.
  30. Noblit G, Hare R. *Meta-ethnography: synthesising qualitative studies*. 11th ed. London: Sage Publications; 1988.

- 1558  
1559  
1560  
1561  
1562  
1563  
1564  
1565  
1566  
1567  
1568  
1569  
1570  
1571  
1572  
1573  
1574  
1575  
1576  
1577  
1578  
1579  
1580  
1581  
1582  
1583  
1584  
1585  
1586  
1587  
1588  
1589  
1590  
1591  
1592  
1593  
1594  
1595  
1596  
1597  
1598  
1599  
1600  
1601  
1602  
1603  
1604  
1605  
1606  
1607  
1608  
1609  
1610  
1611  
1612  
1613  
1614  
1615  
1616
31. Nutter E, Meyer S, Shaw-Battista J. Waterbirth: An integrative analysis of peer-reviewed literature. *Journal of Midwifery and Women's Health*. 2014;59(3):286-319.
  32. Ros HB. Effects of waterbirths and traditional bedbirths on outcomes for neonates. *Curationis*. 2009;32(2):46-52.
  33. Russell K. Changing the culture on labour ward to increase midwives promotion of birthing pools: an action research study [Thesis]. University of Nottingham; 2016. Available at: <https://ethos.bl.uk/OrderDetails.do?did=3&uin=uk.bl.ethos.701183>
  34. Sandelowski M. 'Meta-jeopardy': the crisis of representation in qualitative metasynthesis. *Nursing Outlook*. 2006;54(1):10-16.
  35. Sandelowski M. Metasynthesis, metastudy, and metamadness. *Qualitative Health Research*. 2004;14(10):1357-60.
  36. Sandelowski M, Docherty S, Emden C. Qualitative metasynthesis: issues and techniques. *Research in Nursing and Health*. 1997;20(4):365-371.
  37. Sanders J. POOLing our resources. *Midwives*. 2018;21(winter 2018):52.
  38. Sidebottom A, Vacquier M, Simon K, Fontaine P, Dahlgren-Roemmich D, Hyer B, Jackson J, Steinbring S, Wunderlich W. Who Gives Birth in Water? A retrospective cohort study of Intended versus Completed Waterbirths. *Journal of Midwifery & Women's Health*. 2019; 64(4):403-409.
  39. Ulfsdottir H, Saltvedt S, Ekborn M, Georgsson S. Like an empowering micro-home: A qualitative study of women's experience of giving birth in water. *Midwifery*. 2018;(67):26-31.
  40. Ulfsdottir H, Saltvedt S, Georgsson S. Waterbirth in Sweden – a comparative study. *Acta Obstetrica et Gynecologica Scandinavica*. 2018;97(3):341-348.
  41. Walsh D, Downe S. Appraising the quality of qualitative research. *Midwifery*. 2006;22(2):108-119.
  42. Walsh D, Downe S. Meta-synthesis method for qualitative research: a literature review. *Journal of Advanced Nursing*. 2005;50(2):204-211.

- 1617  
1618  
1619 43. Waters I. An ethnography of water birth and its representations on YouTube. *Inquires*  
1620 *Journal*. 2011;3(6):1-3.  
1621  
1622  
1623 44. Wenzel L, Jabbal J. *User Feedback in Maternity Services*. London: Kings Fund; 2016. Available  
1624 at:  
1625  
1626 [https://www.kingsfund.org.uk/sites/default/files/field/field\\_publication\\_file/User\\_feedback](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/User_feedback_maternity_Kings_Fund_Oct_2016.pdf)  
1627 [\\_maternity\\_Kings\\_Fund\\_Oct\\_2016.pdf](https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/User_feedback_maternity_Kings_Fund_Oct_2016.pdf)  
1628  
1629  
1630  
1631 45. Woodward JL. *The Challenge of Conducting a Waterbirth Randomised Controlled Trial*  
1632 [Thesis]. Doctor of Philosophy: University of Birmingham; 2012. Available from:  
1633 <https://ethos.bl.uk/OrderDetails.do?did=1&uin=uk.bl.ethos.552925>  
1634  
1635  
1636  
1637 46. Wu CJ, Chung UL. The decision-making experience of mothers selecting waterbirth. *Journal*  
1638 *of Nursing Research*. 2003;11(4):261-268.  
1639  
1640  
1641 47. Young K, Kruske S. How valid are the common concerns raised against waterbirth? A  
1642 focussed review of the literature. *Women and Birth*. 2013;26(2):105-109.  
1643  
1644  
1645  
1646 48. Zimmer L. Qualitative meta-synthesis: A question of dialoguing with texts. *Journal of*  
1647 *Advanced Nursing*. 2006;53(3):311-318.  
1648  
1649  
1650  
1651  
1652  
1653  
1654  
1655  
1656  
1657  
1658  
1659  
1660  
1661  
1662  
1663  
1664  
1665  
1666  
1667  
1668  
1669  
1670  
1671  
1672  
1673  
1674  
1675

**Title:**

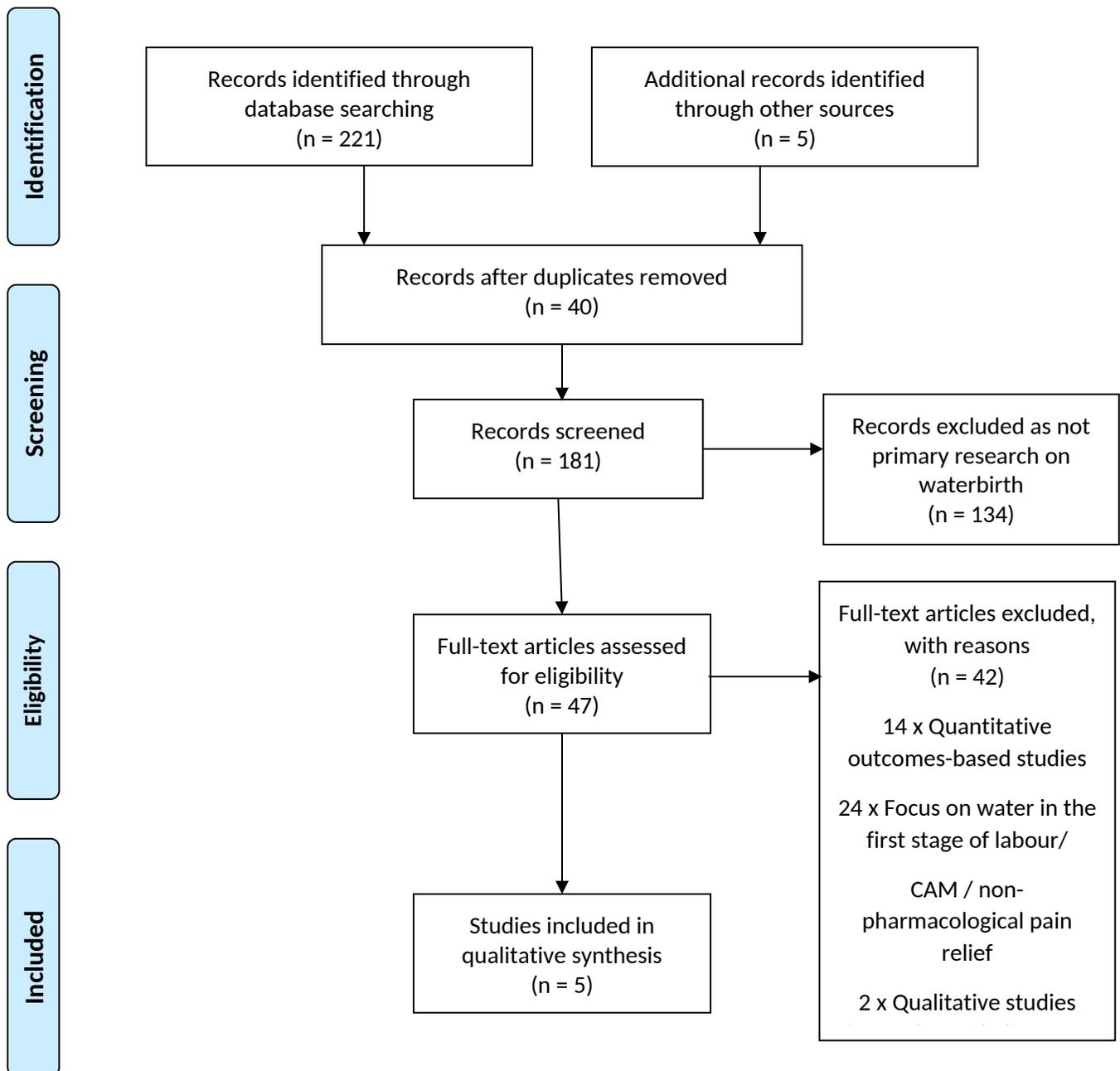
Title: Women and waterbirth: a systematic meta-synthesis of qualitative studies

**Authors:**

*Corresponding author*

Dr Claire S Clews, Dr Sarah Church and Dr Merryn Ekberg

**Figure 1: PRISMA (2009) flow diagram showing review process**



## Tables

### Title:

Women and waterbirth: a systematic meta-synthesis of qualitative studies

### Authors:

*Corresponding author*

Dr Claire S Clews, Dr Sarah Church and Dr Merryn Ekberg

**Table 1: Terms used to search the literature**

("waterbirth" OR "water birth" OR "water-birth" OR "water" OR "birth in water" OR "birth underwater" OR "underwater birth" OR "birthing pool")
AND ("labour" OR "labor")
AND ("childbirth" OR "child birth" OR "child-birth" OR "birth" OR "delivery")
AND ("women" OR "woman" OR "mother" OR "mothers" OR "motherhood" OR "maternal")
AND ("midwifery" OR "midwife" OR "midwives" OR "maternity" OR "maternity care")
AND ("experience" OR "perception")

**Table 2: Summary of qualitative papers exploring women's experiences of waterbirth**

Study reference	Aim	Participants	Method of data collection	Method of analysis	Recruitment, setting, context	Country
Ulfsdotti <i>et al</i> (2018)	Aimed to describe women's experience and perception	20 women, 12 primigravid and 8 multigravid women	In-depth interviews	Content analysis	Women were recruited having birthed in a	Sweden

	of giving birth in water				clinic in Stockholm	
Lewis et al (2018)	To explore the perception and experience of women who achieved or did not achieve their planned waterbirth	296 women were included. 93 women achieved a waterbirth and 203 did not achieve a waterbirth	Semi-structured interviews	Thematic analysis	Women were recruited from a birth centre of the tertiary public maternity hospital in Western Australia	Australia
Waters (2011)	Aimed to understand the perspectives and experiences of women who chose to give birth in water and post their birth videos publicly on YouTube.	16 parents who had birthed in water and posted a live video of this on YouTube.	Skype audio semi-structured interviews	Thematic	Participants were contacted by the researcher with an invitation letter via their YouTube handle.	USA
Maude and	Aimed to give 'voice'	5 women who had	Interviews	Thematic	Women were	New Zealand

Foureur (2007)	to women's experiences of using water for labour and birth.	used water for labour and birth at home or in the hospital.			recruited from an urban region of New Zealand if they had experienced waterbirth at home or in hospital	
Wu and Chung (2003)	Aimed to explore the decision-making experience of mothers selecting waterbirth.	9 women who had given birth in water in one maternity unit in the past 12 months	Questionnaire Interviews	Giorgi's phenomenological method	Women were recruited if they had experienced waterbirth in one midwife-clinic	Taiwan

**Table 3: Women's experiences of waterbirth - thematic analysis**

Study reference	Analytical themes			
	Knowledge of waterbirth	Intuitive knowledge of physiological birth	Water, autonomy and control	Waterbirth: easing the transition
Ulfsdottir <i>et al</i> (2018)	*	*	*	*
Lewis <i>et al</i> (2018)	*	*	*	*
Waters (2011)	*	*	*	
Maude and Foureur (2007)	*	*	*	
Wu and Chung, (2003)	*	*	*	



**Title:** Women and waterbirth: a systematic meta-synthesis of qualitative studies

**Author Agreement:**

This article is the original work of Dr C Clews, Dr S Church and Dr M Ekberg

**Declarations:**

(1) No Conflict of Interest declared by any author

**Title:** Women and waterbirth: a systematic meta-synthesis of qualitative studies

**Ethical Statement:**

This literature review was part of a study considered by the NRES ethics committee East Midlands

Approval number: IRAS project ID: 153853

Date ethical approval gained: 19<sup>th</sup> February 2015

**Author Agreement:**

This article is the original work of Dr C Clews, Dr S Church and Dr M Ekberg

The article has not received prior publication and is not under consideration for publication elsewhere

All three authors have seen and approved the manuscript being submitted

The authors abide by the copyright terms and conditions of Elsevier and the Australian College of Midwives.

**Author Agreement:**

This article is the original work of Dr C Clews, Dr S Church and Dr M Ekberg

**Declarations:**

- (1) No Conflict of Interest declared by any author
- (2) Ethical Approval gained for the study IRAS project ID: 153853
- (3) Funding sources: The University of Northampton

**CRedit** author statement:

**Dr C Clews:** Conceptualization, Methodology, Software, Formal analysis, Investigation, Data Curation, Writing – original draft, Writing – review & editing, visualization, Project Administration **Dr S Church:** Validation, Writing – review & editing, visualization, Supervision **Dr M Ekberg:** Resources, Writing – Review & editing, visualization, supervision, Funding Acquisition.

**Funding:** This work was supported by the University of Northampton OR This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

The article has not received prior publication and is not under consideration for publication elsewhere

All three authors have seen and approved the manuscript being submitted

The authors abide by the copyright terms and conditions of Elsevier and the Midwifery Journal.

**Ethical Statement:**

This literature review was part of a study considered by the NRES ethics committee East Midlands

Approval number: IRAS project ID: 153853

Date ethical approval gained: 19<sup>th</sup> February 2015

Title:

Women and waterbirth: A qualitative systematic review.

Authors:

*Corresponding author*

Dr Claire S Clews, RM, Professional Doctorate

University of Northampton

Room 301, Learning Hub Building

Waterside Campus

University Drive

Northampton

NN1 5PH

Faculty of Health, Education and Society

(01604) 893611

[Claire.clews@northampton.ac.uk](mailto:Claire.clews@northampton.ac.uk)

<https://orcid.org/0000-0003-1818-3493>

Dr Sarah Church, RM, PhD

Associate Professor in Midwifery

London South Bank University & Barts Health NHS Trust

103 Borough Road

London SE1 0AA

School of Health and Social Care

<https://orcid.org/0000-0001-8868-2971>

Dr Merryn Ekberg, PhD

University of Northampton

Waterside Campus

University Drive

Northampton

NN1 5PH

Faculty of Health, Education and Society