

Exploring health professionals' and women's awareness of models of maternity care evidence

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Abstract

A Cochrane systematic review has shown midwife-led continuity models of care provide explicit benefits for mothers and babies compared with other models of maternity care, with a comparable level of safety. The Cochrane review has had much international impact. This study explored the local impact of the review, alongside other midwife-led care evidence and guidelines. Electronic surveys were undertaken exploring women's and health professionals' awareness of models of maternity care evidence, including midwife-led care and homebirth, and how they utilise evidence to guide their choices and practice.

A low awareness of much of the available evidence was shown among the women and the professionals. There is a need for better dissemination of information to professionals as they are women's preferred source of information about the options available for place of birth and midwife-led care.

Introduction

Organisation of maternity care is paramount in providing safe, cost effective and normalised care for childbearing women (Sandall et al, 2010). Maternity care can be delivered using different models. These include midwife-led care (where a midwife is the lead professional but one or two consultations with an obstetrician or a physician is part of routine care), medical led care (where an obstetrician or physician are the primary care providers) or shared care (where responsibility is shared among different health professionals).

Midwife-led care evidence has been available in various formats including primary research, reviews and guidelines. Of which the most recently published is a Cochrane systematic review (Sandall et al, 2013) showing explicit benefits for mothers and babies receiving midwife-led care compared with other models of maternity care, with a comparable level of safety. The review included 13 trials, involving 16,242 women, from the United Kingdom (UK), Australia, Canada, Ireland and New Zealand. Women receiving midwife-led continuity

models of care were less likely to experience regional analgesia, episiotomy and instrumental birth, and more likely to experience spontaneous vaginal birth, a known midwife attending the birth, no intrapartum analgesia and a longer mean length of labour. There were no differences between groups for caesarean births. Women who were randomised to midwife-led continuity models of care were also less likely to experience preterm birth and fetal loss before 24 weeks' gestation, although no differences in fetal loss/neonatal death after 24 weeks or overall were found. The majority of studies within the review also reported a higher rate of maternal satisfaction in the midwife-led continuity care model. It is speculated that the main contributing factors to the observed differences lie in the philosophy of care behind each model (Soltani & Sandall, 2012). Midwife-led care is based on the belief of normality in childbirth, continuity, advocating autonomy and building relationship with mothers, whereas in the medical model there may be an over-reliance on technology and preference for medical interventions. The Cochrane review (Sandall et al, 2013) concluded that the majority of women should be offered midwife-led models of care, although caution should be applied with women with substantial medical or obstetric complications.

The results of this review, as well as its predecessor (Hattem et al, 2008), have had significant impact in informing policy debate in the promotion of midwife-led care and facilitating decision making within the UK, Australia, the United States of America and Brazil. However despite the review showing that midwife-led care is comparable with medical led care in terms of safety outcomes (Sandall et al, 2009), little is known locally on the level of awareness and the extent to which maternity users are involved in implementation of the evidence for midwife-led care. This is particularly important given that organisation of maternity care and facilitation of informed choice has been shown to be pivotal in enhancing women's experience of birth (Soltani & Sandall, 2012). The review (Sandall et al, 2013) only focused on midwife-led continuity models of care (rather than place of birth) and provided a narrative account of evidence in support of cost effectiveness of this model. However, the cost benefits of all forms of midwife-led care have been demonstrated in a recent UK based

study (Schroeder et al, 2012); with the unadjusted costs of a planned homebirth being £1066, a standalone midwifery unit birth being £1435, an alongside midwifery unit birth being £1461 and an obstetric unit birth being £1631.

In view of the high national and international impact of the above evidence and the unknown extent of awareness of this and other midwife-led care evidence among professionals and women, this survey was designed to explore local awareness of all forms of midwife-led care evidence. This included evidence of care provided at home, in standalone birthing units and in alongside midwife units.

Objectives

The main objectives were therefore to evaluate maternity users' awareness of midwife-led care supporting evidence and the extent to which it influences their choices from both the mothers' and practitioners' perspectives.

Method

The project was undertaken in a large teaching maternity unit in the Yorkshire and Humber region of England, where labour care is organised into midwife-led care either at home or in an alongside midwifery unit or obstetric care in an obstetric unit. The alongside midwife-led unit shares an entrance with the consultant led unit. All low risk women are routinely referred to midwife-led care and to give birth in the alongside midwife-led unit.

The project was a service evaluation project. It was carried out in close collaboration with maternity users and practitioners. Approval for the project was obtained from the local service evaluation committee. Two surveys were developed one aimed at professionals and the other at maternity service users.

Professionals' Survey

An online survey explored practising midwives and obstetric colleagues' awareness of evidence regarding maternity care models with a focus on advantages and disadvantages of midwife-led continuity models versus other models of care. It contained both open and closed questions that explored what specific evidence professionals were aware of regarding midwife-led care, what evidence they had recently accessed, what evidence they would consider accessing in the future and how they provided information to women to enable them to make choices about place of birth. The survey was piloted by 4 midwives and 1 medical colleague. Minor wording clarifications only were deemed necessary after piloting the survey.

All midwives and obstetricians working within the maternity unit – both those in the hospital and those in the community were included in the sample. A link to the survey was emailed to all qualified staff asking them to participate with a reminder email sent 3 weeks later.

Maternity User's Survey

The survey was developed involving user groups to evaluate women's knowledge of midwife-led care, their knowledge of supporting evidence and the factors influencing their decision making. The survey contained open and closed questions and was piloted with 6 user group representatives. Eligible women for the survey included those who were currently pregnant or those who had given birth from 2008 when the original Cochrane midwife-led care review was published. The survey was promoted by the community midwives and local maternity user groups, and advertised through local employers to eligible staff. The survey ran from September 2013 to February 2014. The survey was fully confidential and available in both paper format or online depending on women's preferences.

Data analysis

For both surveys descriptive statistics were calculated for all demographic data and for closed answer questions including proportions, means, standard deviation (SD) and ranges

as appropriate. The demographic data was compared to unit or national means or proportions to determine the comparability of the sample to the population. Open ended questions were analysed using thematic analysis to establish categories.

Results

Professionals' Survey

The characteristics of this sample are presented in Table 1. Fifty nine health professionals completed the professionals' survey, which gave a response rate of 15.1%. Forty eight respondents were midwives, 5 were obstetricians and 6 did not complete this question. Midwives had been qualified for between 2 and 40 years and the obstetricians for between 3 and 34 years.

Staff type	n (%)	Total population
Not stated	6 (10.2%)	
Midwives	48 (81.3%)	345 (88.5%)
Years qualified [mean (range)]	17.2 years (2-40 years)	
Band 5	2 (4.4%)	(11%)
Band 6	29 (64.5%)	(75%)
Band 7	10 (22.2%)	(12%)
Band 8+	4 (8.9%)	(2%)
Community based	33.3%	(26.6%)
Hospital based	52.1%	} (73.4%)
Managerial/specialist	14.6%	
Obstetricians	5 (8.5%)	45 (11.5%)
Years qualified [Mean (range)]	15.7 years (3-34 years)	
SHO	1 (20.0%)	(31.1%)
Registrar	2 (40.0%)	(26.7%)
Consultant	2 (40.0%)	(42.2%)

Table 1 - Professionals' Characteristics

When asked about their awareness of evidence, 82% of professionals were aware of homebirth evidence and 78% aware of midwife-led care evidence (Figure 1). Professionals reported reading the Cochrane midwife-led care review less frequently (23.1%) than the National Institute for Health and Care Excellence (NICE, 2007) guidance (90.4%) or the local hospital guidance (88.2%) (Table 2).

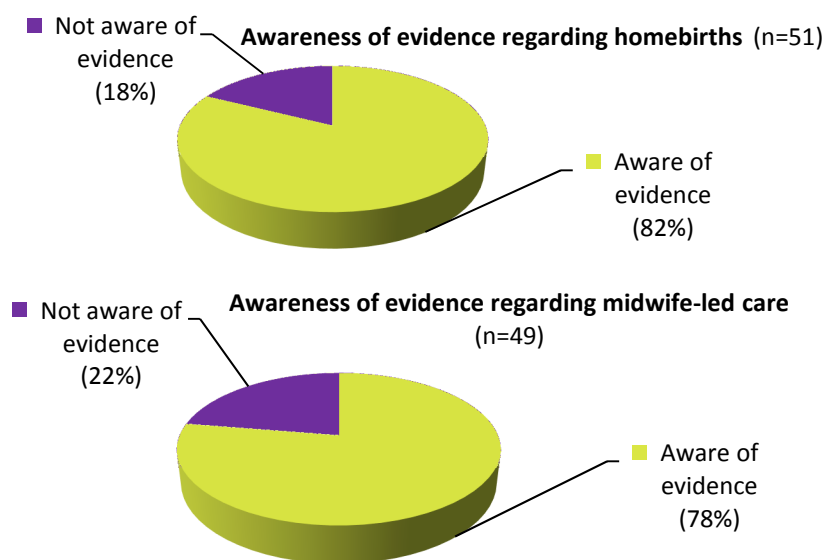


Figure 1 - Professionals' awareness of evidence

	Local labour guidelines [n (%)]	National NICE intrapartum guidelines [n (%)]	Cochrane Midwife-led continuity models vs other models of care review [n (%)]
Yes	45 (88.2%)	26 (50.0%)	3 (5.8%)
Summary only	N/A	21 (40.4%)	9 (17.3%)
No	5 (9.8%)	3 (5.8%)	35 (67.3%)
Don't know	1 (2.0%)	2 (3.8%)	5 (9.6%)

Table 2 - Evidence read by professionals

When professionals were asked what evidence they had accessed for place of birth information in the last 6 months, the Cochrane library was far less accessed (19.0%) than other sources such as journals (64.3%) and national guidance (52.4%) (Table 3).

Furthermore less than half of the professionals stated that they would use the Cochrane library if they wanted to find further pregnancy or birth information (Table 3).

Evidence	Accessed in last 6 months for place of birth information [n (%)]	Would access in the future for pregnancy or birth information [n (%)]
Journals	27 (64.3%)	7 (14.0%)
National guidance (NICE / RCOG / RCM)	22 (52.4%)	47 (94.0%)
Local policies and guidance	18 (42.9%)	39 (78.0%)
Internet	18 (42.9%)	3 (6.0%)
Conferences/ study days	14 (33.3%)	2 (4.0%)
Cochrane library	8 (19.0%)	23 (46.0%)
Other	3 (7.1%)	2 (4.0%)

NICE - National Institute of Health and Care Excellence
 RCOG -Royal College of Obstetricians & Gynaecologists
 RCM - Royal College of Midwives

Table 3 - Evidence professionals accessed in the last 6 months or would access in the future

Out of the 59 respondents, 39 directly provided women with information about place of birth of which 100% provided verbal information, 36.8% written information such as leaflets and 18.4% guidance to look at specific internet sites (Figure 2).

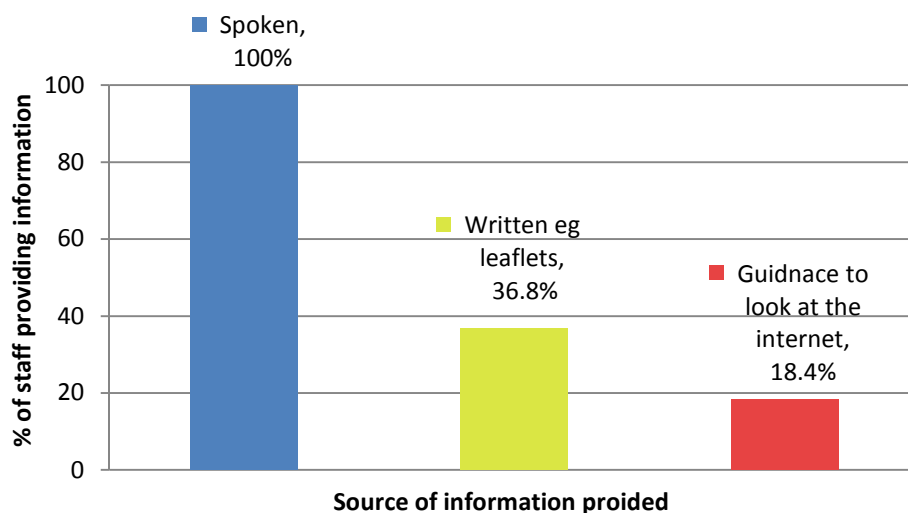


Figure 2 - How professionals provide information to women about place of birth (N=39)

Maternity User's Survey

No-one requested a paper based copy of the survey and 137 people clicked to take part in the online survey. The first question tested eligibility to participate. Nine did not meet the inclusion criteria and 11 women only responded to the eligibility question. A total of 117

women therefore completed or partially completed the survey and were included in the analysis. Of these women 48.7% (n=57) were antenatal and 51.3% (n=60) were postnatal (Table 4). Women's characteristics are presented in comparison to national data (Table 5). The women had an average age of 31.6 ± 4.8 years and 82.3% had received education beyond A' level.

	Antenatal [n (%)]	Postnatal [n (%)]
Weeks Pregnant		
less than 11+6	19 (33.3%)	
12-27+6	19 (33.3%)	
28-40+	15 (26.4%)	
not stated	4 (7.0%)	
Year gave birth		
2008		3 (5.0%)
2009		9 (15.0%)
2010		10 (16.7%)
2011		5 (8.3%)
2012		21 (35.0%)
2013		9 (15.0%)
2014		1 (1.7%)
not stated		2 (3.3%)

Table 4 Maternity user's gestation or year of last birth

	Antenatal [n (%)]	Postnatal [n (%)]	Combined [n (%)]	Nationally
Parity having / had:				
first baby	20 (38.5%)	32 (57.1%)	52 (48.2%)	(40.4%)*
second baby	24 (46.2%)	20 (35.7%)	44 (40.7%)	(30.4%)*
third baby	6 (11.5%)	3 (5.4%)	9 (8.3%)	(15.0%)*
fourth + baby	2 (3.8%)	1 (1.8%)	3 (2.8%)	(14.2%)*
Age				
<20	0	0	0	(4.6%)*
20-24	5 (9.8%)	4 (7.0%)	9 (8.4%)	(18.2%)*
25-29	11 (21.6%)	13 (22.8%)	24 (22.2%)	(28.1%)*
30-34	28 (54.9%)	19 (33.3%)	47 (43.5%)	(29.7%)*
35-39	4 (7.8%)	16 (28.1%)	20 (18.5%)	(15.5%)*
40+	3 (5.9%)	5 (8.8%)	8 (7.4%)	(3.9%)*
Average age [mean ± s.d]	30.9 ± 4.5	32.2 ± 5.1	31.6 ± 4.8	29.8 [∞]
Ethnicity				
White British			89 (93.7%)	(79.8%) ^φ
Other			6 (6.3%)	(22.2%) ^φ
Language				
English first language			93 (97.9%)	(92.0%) ^φ
Non-English			2 (2.1%)	(8.0%) ^φ
Marital status				
Married/living with partner/civil partner			94 (98.9%)	(78%) [†]
Living alone			1 (1.1%)	(22%) [†]
Living with family adults			0	-
Living with unrelated adults			0	-

Education level			
No qualification		0	(22.5%) ϕ
GCSE/O' level /NVQ 2		8 (8.3%)	} (28.5%) ϕ
ONC/B TEC		3 (3.1%)	
A' level/Highers/Bac/NVQ 3		6 (6.3%)	(12.4%) ϕ
NVQ 4/ Diploma		8 (8.3%)	} (27.4%) ϕ
Degree / NVQ 5		35 (36.5%)	
Postgraduate		36 (37.5%)	
Other		0 (0%)	(9.3%) ϕ

* Health and Social Care Information Centre . NHS Maternity Statistics - England, 2012-13

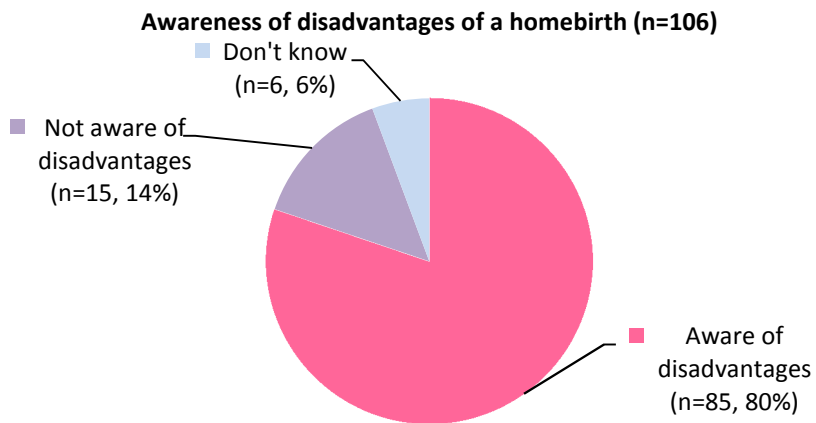
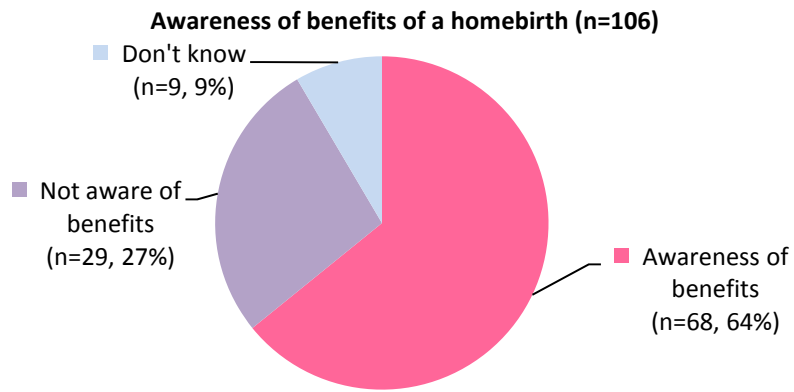
∞ Office for National Statistics (ONS) (2012). Live Births in England and Wales by Characteristics of Mother

ϕ ONS (2011). National census data 2011 for England

\dagger ONS (2013a) Families and Households, 2013

Table 5 - Maternity User's characteristics.

To explore women's awareness of supporting evidence, they were asked whether they were aware of any benefits and disadvantages firstly of a homebirth and secondly of a birth in a midwife-led care unit. Overall 64% of women were aware of benefits of having a homebirth compared to 80% aware of disadvantages (Figure 3). The most common benefits women described were that a homebirth is more calm and relaxed (n=35, 55.6%), there is less unnecessary medical intervention (n=25, 39.7%), it is a more familiar environment (n=20, 31.7%), it is more comfortable than hospital (n=16, 25.4%), it provides more consistent midwife care (n=15, 23.8%) and it allows partner's to be more involved during the birth and postnatal period (n=12, 19.0%). Women viewed the biggest disadvantage of a homebirth to be that medical assistance is not available should it be required (n=57, 72.2%). Other perceived disadvantages were the time it would take to transfer to hospital should an emergency occur (n=27, 34.2%) and that no epidurals are available at home (n=24, 30.4%). Women who had considered a homebirth but had subsequently changed their mind were asked what factors had influenced their decisions. The most common reasons cited by these 27 women for changing their mind were the perception that they would be safer in hospital (n=12, 44.4%), medical advice due to their changing risk status during pregnancy (n=7, 25.9%), receiving insufficient or inaccurate information (n=3, 11.1%) and the concerns of their partner (n=3, 11.1%).



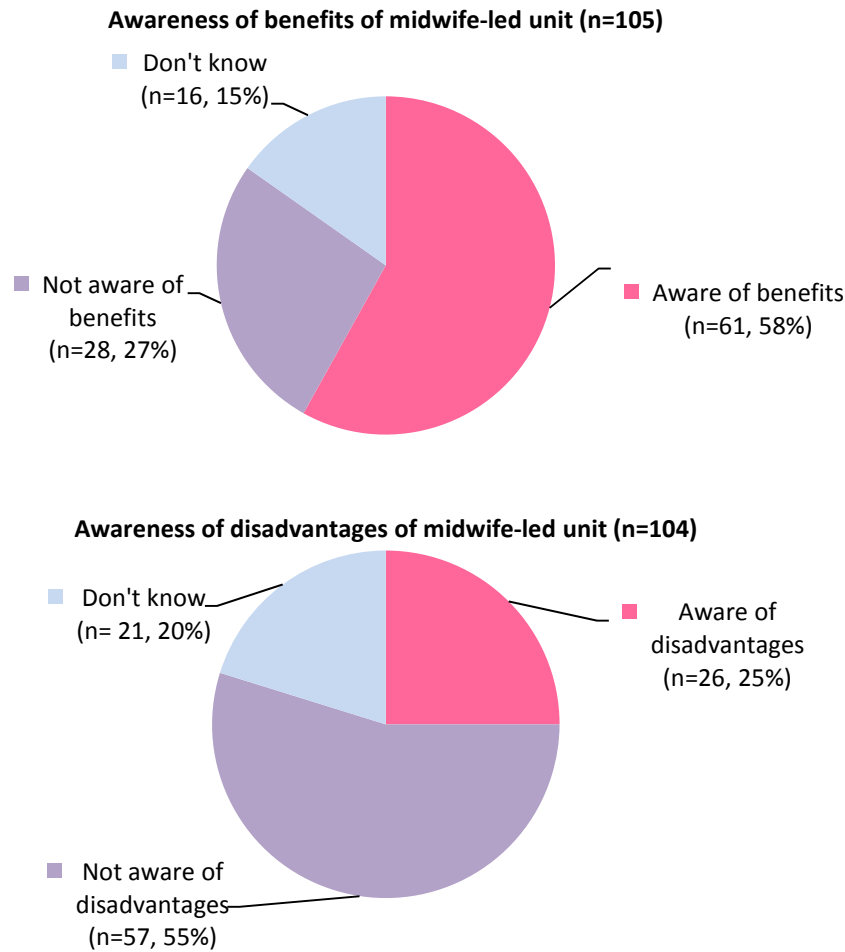


Figure 3 - Women's awareness of benefits and disadvantages of giving birth at home or on a midwife-led unit

For birth in a midwife-led unit, 58% of women were aware of benefits compared to 25% aware of disadvantages (Figure 3). The most commonly given benefits of a midwife-led unit birth were the focus on normality and/or the use of fewer medical interventions (n=30, 56.6%), the more homely, less clinical atmosphere (n=16, 30.2%), the relaxed, calm atmosphere (n=15, 28.3%), the proximity of medical facilities if required (n=12, 22.6%) and more perceived control than in an obstetric unit (n=10, 18.9%). Women perceived the main disadvantages of a midwife-led care unit birth to be possible delays in accessing emergency care from standalone units (n=10, 41.7%), the need to transfer to consultant care if complications arise (n=9, 37.5%) and the lack of epidural facilities (n=8, 33.3%). Overall 87.7% (93/106) of women could name an advantage, disadvantage or both for having a homebirth, but only 61.0% (64/105) of women could do the same for a midwife-led unit birth.

Just over 23% of women were aware of the NICE (2007) intrapartum guidelines, compared to 7.7% aware of the Cochrane midwife-led continuity models versus other models of care review. In both instances 75% of the women that were aware had read all/part of them (Table 6). Of those who had read the NICE (2007) intrapartum guideline 88% found them helpful, but almost 30% had found the guidelines difficult to read. All 6 women who had read the Cochrane review stated that they found it helpful and easy to read.

	AN and PN combined [n (%)]
Heard of NICE (n=104)	
Yes	80 (76.9%)
No	24 (23.1%)
Don't know	0
Heard of NICE Intrapartum Guidelines (n=104)	
Yes	24 (23.1%)
No	76 (73.1%)
Don't know	4 (3.8%)
Read NICE Intrapartum Guideline (n=24)	
No	6 (25.0%)
Yes, summary	9 (37.5%)
Yes, full guideline	9 (37.5%)
Heard of Cochrane Library (n=103)	
Yes	22 (21.4%)
No	81 (78.6%)
Don't know	0
Heard of Cochrane 'Midwife-Led continuity versus other models of care' review (n=103)	
Yes	8 (7.7%)
No	94 (91.3%)
Don't know	1 (1.0%)
Read Cochrane 'Midwife-Led continuity versus other models of care' review (n=8)	
No	2 (25.0%)
Yes, abstract	1 (12.5%)
Yes, lay summary	3 (37.5%)
Yes, full review	2 (25.0%)

Table 6 - Women's awareness of specific evidence

Figure 4 shows where women obtained general birth information and where they specifically obtained information about homebirth and midwife-led units. For general birth information a large proportion of women (87.5%) relied on midwives. Midwives were also the main source of information about midwife-led care and homebirths (49.2% and 45.6% respectively). For all forms of birth information friends were the next most common source of evidence. Other common sources of birth information included the internet, antenatal education classes,

family members and books. When it came to women's awareness of homebirth or midwife-led units women's previous birth experiences were also important.

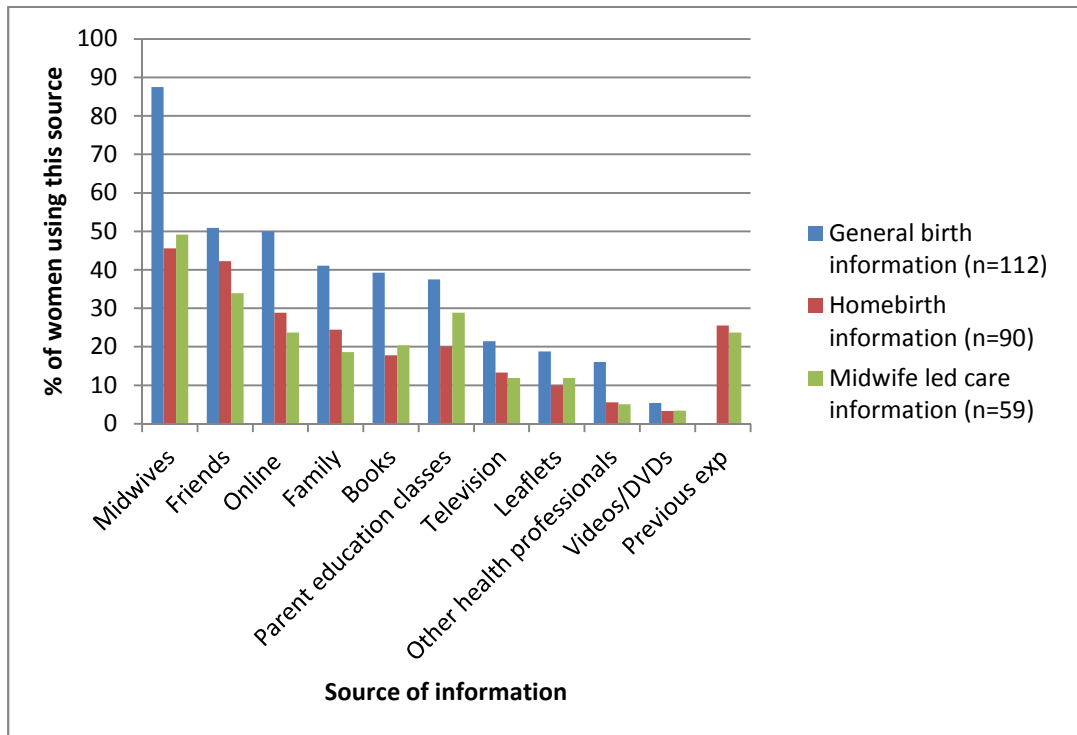


Figure 4 - Sources used by women to obtain birth information

Finally women were asked how they would like to receive information about place of birth (Figure 5). 79.3% of women preferred discussion with a midwife (79.3%), with the internet closely following this (66.7%). A separate question using a Likert scale verified this with 74.2% of women agreeing or strongly agreeing that the internet was a good way to receive information about place of birth options.

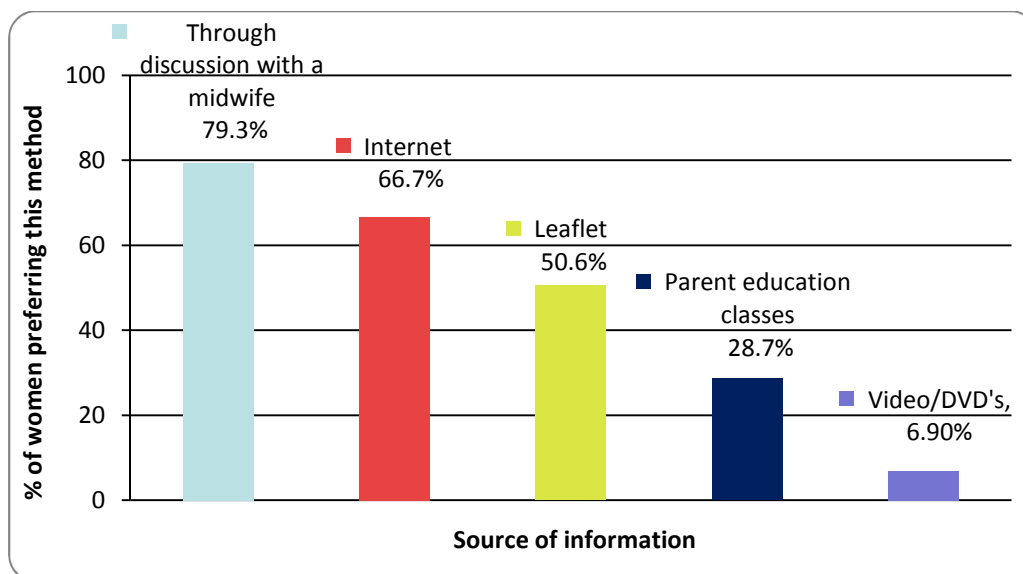


Figure 5 - How women would like to receive information about place of birth (N=87)

Discussion

This study examined awareness of evidence regarding different maternity care models and service provision, from both women's and professionals' perspectives. Although it may not be representative of all maternity care provision due to being conducted at one maternity unit and having a small sample size, it provides insights into evidence awareness.

The response rate for the professionals' survey was 15.1%. While this is low, it is above the response rates of 11.9% (Antheunis et al, 2013) and 4% (Howard et al, 2013) for previous surveys emailed out to healthcare professionals. The time pressures on staff in the current NHS climate could have negatively influenced the response rate. Those that did respond were fairly representative of the population, with all grades of staff represented for midwives and obstetricians and with a similar distribution between community and hospital midwives to the actual population.

While the majority of healthcare professionals had read the national NICE guidelines and the local trust guidelines, only 5.8% had read the entire midwife-led continuity models vs other models of care review. Furthermore our survey found only 19% of healthcare professionals had accessed the Cochrane library to obtain information on place of birth in the last 6

months and only 46% of professionals stated they would use the Cochrane library to find pregnancy or birth evidence in the future. This is an important observation since Cochrane is considered as the gold standard in the era of evidence based practice, due to their rigorous and systematic approach aimed at supporting health professionals in their clinical decision making (Bero and Rennie, 1995). This study raises questions as to how well this resource is used amongst professionals; despite the awareness and utilisation of this resource being important for their clinical practice. Moreover this study found that women's favoured source of birth information is midwives, hence midwives need to have up-to-date knowledge and be familiar with the latest evidence, especially with reliable sources such as Cochrane. Professionals' access to the Cochrane library therefore needs to be made a priority.

Antenatal women who undertook the survey were fairly evenly distributed across the different trimesters (Table 4). For most postnatal women their experiences of maternity care were very recent, with 51.7% giving birth since 2012, which we hope will have minimised the risk of recall bias; especially given evidence has shown women's long term recall of many pregnancy and birth factors are accurate (Simkin, 1992; Tomeo et al, 1999). Our sample had a higher rate of women having their first or second baby (48.2% and 40.7% respectively) than the national average (40.4% and 30.4%) and the average age of women was slightly higher than the national average (31.6 vs 29.8 years). While we had a higher proportion of women with English as a first language than the national average (97.9% vs 92.0%); when compared to the Yorkshire and Humber average of 94% (Office for National Statistics (ONS) 2011) it was slightly more representative. Our sample was highly educated with 82.3% having some form of education after A' levels. Other studies of how women obtain pregnancy information have experienced similar patterns with highly educated samples, ranging from 62%-76% having tertiary education (Larsson, 2009; Gao et al, 2013). The internet based nature of the women's survey meant it was not possible to record the number or characteristics of non-responders to determine if they differed in any way from those that did respond.

Women within our sample were more aware of evidence about homebirth than midwife-led care, with almost 40% unaware of any benefits or disadvantages of midwife-led care. Similarly to previous research (Zadoroznyj, 2000) many women obtained information about midwife-led care and homebirth from their previous birth experiences. This was despite our sample being highly educated. Women also had a very low level of awareness of specific evidence with just 23.1% knowing about the NICE (2007) intrapartum guidelines and 7.7% about the Cochrane midwife-led continuity models versus other models of care review. Furthermore 30% of those who had tried to read any of the NICE (2007) guidelines had found them difficult to understand, despite all of the respondents having some form of tertiary education. In comparison all of those who had read the Cochrane reviews had found them easy to understand. Within the UK access to the online Cochrane library is free; with Cochrane providing evidence in different formats including podcasts to ensure a wider access. Furthermore Cochrane reviews specifically incorporate lay summaries with the intention of making the review more accessible and understandable to the lay population. However the lack of awareness and utilisation of this resource amongst both our professional sample and our highly educated sample of women highlights the importance of the visibility of this resource to the non-academic population. Research is needed to establish the reasons for the limited awareness and utilisation of the Cochrane library. Once identified these reasons can then be addressed accordingly through dissemination forums or targeted campaigns to raise awareness and engage a wider audience both among health care users and health professionals.

Women's autonomy of choice of place of birth has been promoted by the Department of Health (1993). However a large proportion of women viewed hospital as safer with 80% of women stating they were aware of a disadvantage of a homebirth and 44% of those who decided against a homebirth doing so for safety reasons. This is in line with the findings of Lavender and Chapple (2005) who found women decided against a homebirth due to the perceived safety of hospital. The over-medicalisation of birth and the perception of childbirth

as a dangerous event may have contributed to women having a lack faith in their ability to give birth, which causes them to become over reliant on hospital safety and to be dominated by the 'just in case' when making decisions about place of birth (Zadoroznyj, 2000; Houghton et al, 2008; Pitchforth et al, 2009). There is evidence that health professionals similarly see hospital as the safest place for birth (Houghton et al, 2008). Women's views may mirror health professionals' views on the safety of hospital over the home setting (Lavender and Chapple, 2005; Houghton et al, 2008). Indeed some women decided against a homebirth in our study due to being provided with inaccurate or insufficient information. The limited information provided about homebirth could also be due to professionals' assumption that women will bring up the conversation about place of birth if they are interested, while women themselves find it difficult to bring up the subject with a midwife (Houghton et al, 2008). Professionals therefore need to consciously provide all women with accurate and detailed information about all care options including midwife-led care and homebirth, to allow women to make a truly informed decision about place of birth.

When comparing our survey to a similar one undertaken in 2005 in a maternity unit in Derby (Soltani and Dickinson, 2005), it was found that health professionals remained the most important source of information during pregnancy, with 88% of women in both samples obtaining information from health professionals. Friends were the second most important source of all birth information. However when combined with family, over time they had become a less utilised source, falling from 72% to 62%. In contrast the use of the internet to obtain information had almost doubled - increasing from 28% of women to 50%. Although the survey was offered in a paper format no one chose that option, so all responders did so online. Caution is therefore required when interpreting the fact that women wanted increased web-based resources, as mainly technology-literate women will have been recruited. However the phenomenon of women using the internet to obtain pregnancy and birth information is being seen globally (Larsson, 2009; Gao et al, 2013).

Women's desire to obtain pregnancy and birth related information over the internet (66.7%) differed markedly with how health professionals were currently providing information (18.4%). This may partly be due to 90% of midwives being somewhat concerned or very concerned about the accuracy of the information that women can access online (Lagan et al, 2011). However given the competing demands on midwives' time, the internet is an opportunity to provide information to women that complements midwife contact. Exchanging information should never become exclusively online based as internet use is not universal and direct contact with health professionals is still a top priority for women. However given 83% of households in the UK now have internet access, 97% of females aged from 16-44 have used the internet in the last 3 months and 80% of adults in the same age range access the internet daily (ONS, 2013b), supplementary internet resources integrated with midwife consultation need to be considered for women. These should be developed by women in collaboration with healthcare professionals to ensure their content is specific, tailored and sensitive to women's needs. With appropriate training health professionals can then confidently guide women to high quality, trustworthy, user-friendly web-based resources to ensure effective access to accurate information.

Conclusions

Despite good use of local and NICE guidance by professionals, there was an underutilisation of the Cochrane library. The majority of women were also unaware of this resource. Research needs to establish ways to promote this resource and current reasons for underutilisation.

There was a lack of awareness of evidence among the women. Given that their most favoured way to receive information was from a midwife, there is a clear need for increased evidence provision about the birth options available and the research evidence supporting these options from professionals to women.

Women's desire for pregnancy and birth information to be provided online was demonstrated, with women widely using the internet during pregnancy and perceiving it as a good way to receive information. Internet options incorporating the available evidence need to be established that are reliable and easily accessible to women, to enable women to have sufficient information to make informed choices.

Key Points

- A relatively good use of NICE guidance was reported, particularly by health professionals. However awareness and utilisation of the Cochrane library for birth related evidence both by health professionals and women was limited. It is important to enhance visibility of such evidence to allow evidence informed decision making by mothers, supported by their health professionals.
- Women perceived the major benefits of both homebirth and midwife-led care to be the focus on normality with the consequent reduction in unnecessary interventions, the relaxed atmosphere and the less clinical environment. For both homebirth and midwife-led care the over-riding disadvantage was the lack of available medical assistance should it be required.
- Midwives were seen as the most important source of information for general aspects of birth information.
- A large proportion of women stated a desire to access information through the internet; which was not in line with current service delivery. Providing internet-based information could complement current practice and be of mutual benefit for both health professionals and women, by being in line with their preferences.

References

- Antheunis ML, Tates K, Nieboer TE (2013) Patients' and health professionals' use of social media in health care: Motives, barriers and expectations. *Patient Educ Couns* **92**(3): 426-431
- Bero L, Rennie D (1995) The Cochrane Collaboration Preparing, Maintaining, and Disseminating Systematic Reviews of the Effects of Health Care. *JAMA* **274**(24): 1935-8

Department of Health (1993) *Changing Childbirth. Part 1: Report of the Expert Maternity Group*. HSMO, London

Gao L, Larsson M, Luo S (2013) Internet use by Chinese women seeking pregnancy-related information. *Midwifery* **29**(7): 730-735

Hatem M, Sandall J, Devane D, Soltani H, Gates S (2008) Midwife-led versus other models of care for childbearing women. *Cochrane Database of Systematic Reviews* Issue 4. Art. No.: CD004667. DOI:10.1002/14651858.CD004667.pub2

Health and Social Care Information Centre (2013) *Hospital Episode Statistics. NHS Maternity Statistics - England, 2012-13*.

www.hscic.gov.uk/searchcatalogue?productid=13418&q=%22nhs+maternity+statistics%22&topics=0%2fHospital+care&sort=Relevance&size=10&page=1#top (accessed 21 August 2014)

Houghton G, Bedwell C, Forsey M, Baker L, Lavender T (2008) Factors influencing choice in birth place - an exploration of the views of women, their partners and professionals. *Evidence Based Midwifery* **6**(2): 59-64

Howard DL, Wall J, Strickland JL (2013) Physician Attitudes Toward Over the Counter Availability for Oral Contraceptives. *Matern Child Health J*; **17**(10): 1737-1743

Lagan BM, Sinclair M, Kernohan WG (2011) A web-based survey of midwives' perceptions of women using the Internet in pregnancy: a global phenomenon. *Midwifery* **27**(2): 273–281

Larsson M (2009) A descriptive study of the use of the Internet by women seeking pregnancy-related information. *Midwifery* **25**(1): 14–20

Lavender T, Chapple J (2005) How women choose where to give birth. *Pract Midwife* **8**(7): 10-15

National Institute for Health and Clinical Excellence (2007) *Intrapartum care - care of healthy women and their babies during childbirth*. CG55. RCOG Press, London

Office for National Statistics (2013a) *Families and Households, 2013*. www.ons.gov.uk/ons/rel/family-demography/families-and-households/2013/stb-families.html#tab-Dependent-children (accessed 21 august 2014)

Office for National Statistics (2013b) *Internet Access - Households and Individuals, 2013*. www.ons.gov.uk/ons/rel/rdit2/internet-access---households-and-individuals/2013/stb-ia-2013.html (accessed 21 august 2014)

Office for National Statistics (2012) *Live Births in England and Wales by Characteristics of Mother 1*. www.ons.gov.uk/ons/rel/vsob1/characteristics-of-Mother-1--england-and-wales/2012/sb-characteristics-of-mother-1--2012.html (accessed 21 august 2014)

Office for National Statistics (2011) *Census 2011 data*. www.ons.gov.uk/ons/guide-method/census/2011/census-data/index.html (accessed 21 august 2014)

Pitchforth E, van Teijlingen E, Watson V, et al (2009) “Choice” and place of delivery: a qualitative study of women in remote and rural Scotland. *Qual Saf Health Care* **18**: 42–48

Sandall J, Hatem M, Devane D, Soltani H, Gate S. (2009) Discussions of findings from a Cochrane review of midwife-led versus other models of care for childbearing women: continuity, normality and safety. *Midwifery* **25**(1): 8–13

Sandall J, Devane D, Soltani H, Hatem M, Gate S (2010) Improving quality and safety in maternity care: the contribution of midwife-led care. *J Midwifery Womens Health* **55**(3): 255-261

Sandall J, Soltani H, Gates S, Shennan A, Devane D (2013) Midwife-led continuity models versus other models of care for childbearing women. *Cochrane Database of Systematic Reviews* Issue 8. Art. No.: CD004667. DOI: 10.1002/14651858.CD004667.pub3

Schroeder E, Petrou S, Patel N, et al (2012) Cost effectiveness of alternative planned places of birth in woman at low risk of complications: evidence from the Birthplace in England national prospective cohort study. *BMJ* **344**: e2292

Simkin P (1992) Just another day in a woman's life? Part II: Nature and consistency of women's long-term memories of their first birth experience. *Birth* **19**(2) 64-81

Soltani H, Sandall J (2012) Organisation of maternity care and choices of mode of birth: a worldwide view. *Midwifery* **28**(2) 146–149

Soltani H, Dickinson FM (2005) Exploring women's views on information provided during pregnancy. *Br J Midwifery* **13**(10), 633-636

Tomeo CA, Rich-Edwards JW, Michels KB et al (1999) Reproducibility and validity of maternal recall of pregnancy-related events. *Epidemiology* **10**(6) 774-777

Zadoroznyj M (2000) Midwife-led maternity services and consumer 'choice' in an Australian metropolitan region. *Midwifery* **16**(3), 177-185

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Conflicts of Interest

The authors declare that they have no conflict of interest.