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# EVIDENCE BASED MIDWIFERY



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# New guidance: decisions on staff and outputs for REF 2021

**Key words:** REF 2021, midwives, HEFCE guidance, research active staff, impact case studies, research outputs, codes of practice, evidence-based midwifery

The UK Research Excellence Framework (REF) is designed to assess the quality of our UK research outputs and to ensure value for money from research investment of around £2bn from the UK government per year. It is a valuable and much-needed process to assure the government and public that investment in UK research benefits areas such as the economy, society, culture, health, public policy and quality of life.

Following the REF 2014, we had a major review in 2016 by Lord Stern, who was tasked with a full assessment of the research process and the cost benefits of REF. I wrote about the robust recommendations last year (Sinclair, 2016). Since then, the research community, including many of our midwifery key stakeholders, responded to the post-Stern consultation exercise and HEFCE reported receiving 388 responses, which is indicative of the importance of REF in the UK (HEFCE 2016/36).

What do we know about the way forward before we close the doors on 2017? We know the submission date will be in 2020 and the assessment will take place during 2021. We are still under main Panel A: Medicine, Health and Life Sciences and the chair is Professor John Iredale, pro vice-chancellor of health, University of Bristol. We will remain in Allied Health Professions, Dentistry, Nursing and Pharmacy, which is unit 3.

From the guidance REF2017/01 we see a change in the prominence and value of interdisciplinary research and institutional level assessment of the environment both of which have been well received. We know we will have appointees with a specific role in interdisciplinary research on all panels. In addition, there is a change in weighting that is significant and includes a reduction for outputs down from 65% to 60%, the weighting for the environment remains at 15%, but the impact is raised from 20% to 25%.

During the last six months, much discussion and negotiation has been taking place following the initial guidance as there was a distinct lack of clarity and concern for all about the interpretation of staff with significant responsibility for research, number of outputs, open access policy, portability of outputs and the number of impact case studies. HEFCE sent out a further request for feedback from the research community to explore these issues (Atkins, 2017). As of 21 November, HEFCE had released the results of the consultation exercise and we have new guidance on the way forward: [bit.ly/2iylS9a](http://bit.ly/2iylS9a).

The new statement is precise: 'We will implement the recommendations of the Stern review that all staff with significant responsibility for research are returned to the REF, provided they are independent researchers' (HEFCE, 2017: 2).

Institutions are responsible for taking appropriate and consultative action to interpret the guidance and produce a transparent and auditable code of practice (COP) that clearly describes their position on staff with significant research responsibility. The guidance makes it clear that the role of HR and the confirmation of contractual status for researcher contribution will be key to the identification of eligible staff.

HEFCE states the code must include a fair approach to selecting outputs and for the identification of category A staff.

Another major issue was the decoupling of staff from outputs and the exact number of outputs. This has now been clearly set at 2.5 per FTE and a minimum of one and a maximum of five per individual. It is theoretically possible to submit the maximum number of five outputs for one individual and less for others and even none for someone on maternity leave. These changes have significant impact for women in particular and for us as midwives. Academics on maternity leave must not be penalised for taking a year out and this is good news for us.

The contentious issue of output portability has been addressed and the decision to implement a transitional approach to the non-portability of outputs has been agreed. Both institutions can now submit the output, provided it is within the consensus date which will be determined by the date when the 'output was first made publically available'. This is a very important outcome for midwives moving from one institution to another.

We know the number of impact case studies will be a minimum of two and the formula is 'one case study, plus one further case study per up to 15 FTE'. In institutions where the FTEs are 105 plus this will be reduced to an additional case study for every 50 FTEs.

The clarity on the above issues is welcome. The panels have been identified and chairs are being appointed and will be announced in December. The call is out for panel members and it is important for midwifery to be well represented.

In conclusion, it is important for midwives on a range of different contracts with HEIs to be actively engaging in meetings and consultations at their institutions, while they are preparing to write and apply their new COPs, and to talk to RCM representatives about contractual eligibility and equality of opportunity.

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# Pregnant women's experiences of screening for fetal abnormalities according to NICE guidelines: how should midwives communicate information?

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## Abstract

**Background.** NICE UK guidelines (2003) recommended screening for fetal abnormalities, in particular Down syndrome, was to be universally offered to all pregnant women.

**Aim.** To explore key aspects of women's experiences of being offered screening for fetal abnormalities.

**Objective.** To understand the impact of the guideline recommendations on women's autonomy with a focus on non-directive/directive information-giving.

**Method.** A qualitative study drawing upon literature and a constructivist grounded theory approach (Charmaz, 2014), using semi-structured, face-to-face interviews.

**Ethics.** Ethical approval was granted by a national research ethics service ethics committee.

**Setting.** An inner-city teaching hospital in north-west England.

**Recruitment.** Women were identified by their clinical care team in the antenatal clinic and subsequently approached by the researcher when between 20 and 36 weeks' gestation.

**Participants.** Six women of between 27 and 35 weeks' gestation took part in the study. Data saturation was the key determinant of sample size. Saturation was reached when no new issues arose.

**Findings.** Data analysis identified five themes: the importance of reciprocal trust and familiarity in decision-making; compelled to choose; restricting options; eager to choose; little concept of choice. The grounded theory of 'striking a balance' was generated.

**Conclusion.** Recommendations in the guidelines should place greater emphasis on asking women questions and learning from them so as to better understand their individual needs and tailor their care accordingly.

**Key words:** Antenatal screening, fetal abnormalities, women's experiences, maternal autonomy, choice, non-directive/directive information-giving, clinical guidelines, qualitative research, evidence-based midwifery

## Introduction and background

Antenatal screening identifies women at greater risk of a pregnancy affected by Down syndrome (or Trisomy 21). Women in this group can be offered diagnostic tests, either chorionic villus sampling (CVS) or amniocentesis, depending on gestation. Women identified can be offered care and support to either continue their pregnancy or to terminate it, if that is their decision (Harcombe and Armstrong, 2008).

## Literature search strategy

The search involved using electronic databases, supplemented by manual searches of books and journals. Initially, a broad search was performed, derived from key words in the research question and targeted a purposive selection of the literature likely to be useful and relevant. An example is 'information-giving'. Further searching and reading of relevant research became an ongoing feature of an iterative process, that is, the interpretation shifted as the review progressed, in line with grounded theory.

The electronic databases searched included CINAHL, Cochrane Library, expert document websites, for example, the RCM, Medline, National Health Executive Library, Sage Journals online, Social Science Abstracts, UK government websites, for example, the Department of Health (DH) and databases for existing guidelines, such as NICE.

The inclusion criteria was literature that had been published over the last 30 years, to include major changes in maternity care during that period. Studies were not confined to the UK. Although the literature was primarily restricted to work published in English, subsequently, in view of the researcher's educational background, PubMed was searched for work published in French.

The range of work included qualitative and quantitative studies, theoretical work, policy documents, clinical guidelines, surveys, editorials, stakeholders' perspectives and descriptive work.

## Literature review

There has been much focus on informed choice in the healthcare literature, but less on the midwife's role within this. Informed choice is characterised by women's awareness that they have a choice, possess sufficient knowledge and can make an uncoerced decision consistent with their values (Potter et al, 2008). However, the concept of informed choice tends to overlook the fact that some women may make decisions with inadequate medical guidance and others may want information about care and treatment without the responsibility of making a decision (Aune and Moller, 2012).

Informed choice is a central concept behind screening for fetal abnormalities. As de Jong and colleagues (2011) argued,

facilitating meaningful choice should be the very purpose of making tests available. This was borne out in the foreword to the *Second Report of the United Kingdom National Screening Committee* which emphasised 'the need to be absolutely clear and explicit about the risks and limitations of screening. There is a responsibility to ensure that people who accept an invitation to be screened do so on the basis of informed choice and appreciate that in accepting an invitation or participating in a programme to reduce their risk of a disease there is a risk of an adverse outcome' (DH, 2000: 1). A ministerial statement by the chief medical officer informed the NHS that a Down syndrome test should be offered to all pregnant women, regardless of their age (DH, 2001). In 2003, what could be seen as a significant shift in policy, namely screening for fetal abnormalities, particularly Down syndrome, was to be universally offered. The implementation of the recommendations in NICE guidelines was to give women that choice.

Several difficulties have been associated with women's information needs, specifically in relation to antenatal screening (Willis et al, 2015). A key issue is that midwives are somehow 'expected to slip seamlessly' between being more directive about certain issues, for example, smoking cessation, to being non-directive when giving women information about screening for fetal abnormalities (Williams et al, 2002: 231). Midwives are expected to provide objective information, avoid being directive and encourage independent choice (Schwenessen and Koch, 2012). This is borne out in clinical guidelines which promote informed choice based on non-directive counselling (NICE, 2008; NICE, 2003). However, studies found that some women do not perceive their care as non-directive. This is because presenting options does not amount to neutral provision of information as some options are presented as explicit instruction (Tsouroufli, 2011). There is also evidence to suggest that some women prefer direction from professional carers when making decisions about screening (Ahmed et al, 2014). Further tensions are difficulties raised by healthcare professionals when trying to explain to women aspects of the screening process. Examples include the distinction between screening and diagnostic tests (Austin et al, 2013) and problems conveying (risk) information and the practical aspects of screening (Burton-Jeangros et al, 2013). Furthermore, not all abnormalities can be detected and no screening test can guarantee a healthy baby (Hertig et al, 2014). Such difficulties are set in a context where the offer of screening may be interpreted by some women as a recommendation which results in them not thinking through the implications of testing and undermined informed choice (Lewis et al, 2013). These are some of the dilemmas that may impact on women's autonomy. Reid and her colleagues' (2009) meta-synthesis of pregnant women's decision-making relating to Down syndrome screening proposed a conceptual framework from which they concluded that women's decision-making is complex and further research was needed.

### **Aim**

The aim of this study was to explore key aspects of women's experiences of the offer of screening for fetal abnormalities, in particular Down syndrome, according to NICE guidelines.

### **Objective**

The objective of this study was to understand the impact of guideline recommendations on women's autonomy with a focus on non-directive/directive information-giving.

### *Definition of clinical guidelines*

According to the Institute of Medicine's (1990) report, by definition clinical guidelines are 'systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances' (Field and Lohr, 1992: 27).

Guidelines consist of recommendations which guide healthcare professionals through a series of steps. They are not synonymous with fixed protocols that must be followed, rather, they should be applied using clinical judgement.

### *NICE guidelines*

NICE clinical guidelines are regarded as good examples of evidence-based working (House of Commons Health Committee, 2008).

It is clinical guideline 62, entitled *Antenatal care: routine care for the healthy pregnant woman* (NICE, 2008), that is of relevance here, which was last updated in January 2017.

The NICE guideline is based on the principle of non-directiveness. This should not be seen as a specific information model.

### *Autonomy*

Patient autonomy is frequently upheld as a cornerstone principle in healthcare (Greener, 2009; Kearns et al, 2010). Autonomy has been variously defined, but is broadly taken to mean self-determination and freedom from coercion (Jensen and Mooney, 1990).

The rationale for exploring the impact of the guideline's recommendations on women's autonomy arose from the drive to promote maternal autonomy and choice in the healthcare and bioethics literature (Noseworthy et al, 2013; Kukla et al, 2009). Furthermore, the fundamental principle underpinning policy documents was supporting women's choice. This is borne out in *Changing childbirth* (DH, 1993); *National service framework for children, young people and maternity services* (DH, 2004); *Maternity matters* (DH, 2007) and currently *Better births* (NHS England, 2016). However, although it is important and maternity care guidelines are sensitive to maternal autonomy and choice, 'autonomy' is not referred to in NICE quick reference guidelines. This is despite the fact that these versions of the guidelines are frequently the only ones many people read (NICE, 2014). Rather, 'autonomous' appears in the full antenatal care guideline:

'Screening for Down's syndrome should start with the provision of unbiased, evidence-based information about the condition, enabling women to make autonomous, informed decisions' (NICE, 2008: 155).

However, what is meant by 'autonomous' is not explained. This is surprising for two reasons. First, given the importance of autonomy in healthcare, and second, because recommendations in guidelines shape the ways in which women are treated.



The concepts of respect for patient autonomy and non-directiveness are interconnected, that is, self-determination is granted to patients whereas non-directiveness is expected from midwives working within guidelines. The principle of non-directiveness provides midwives with practical and ethical guidance. Non-directiveness means 'that the counsellor does not direct the decision-making process, but provides all the information needed for making an informed decision' (Rantanen et al, 2008: 449).

#### *Participants*

Potential participants were identified by their clinical care team in the antenatal clinic by reference to their case-notes and/or maternity hand-held record. They were approached by the researcher and given a participant information sheet. Depending on gestation, they were given between one and four weeks to decide whether to participate in the study and were invited to contact the researcher via her work mobile telephone.

Prior to the interview, the researcher discussed the information sheet with potential participants, invited questions and clarification of issues. The researcher then obtained women's formal written consent to participate in the study.

Participants were assigned a study code number and later a pseudonym to maintain confidentiality.

#### *Inclusion criteria*

Primigravid or multigravid women were included in the study if they were between 20 and 36 weeks' gestation, 18 to 45 years old, able to read, communicate and understand English, facing a pregnancy-related decision and able to consent to involvement in the study.

#### *Recruitment*

Initial recruitment involved selecting the group to study on the basis of their relevance and usefulness to the topic under investigation, the researcher's own position and the analytical framework that was being developed (Mason, 2002). As the research was inductive, that is, theory emerges as the data are collected and analysed, it was difficult to predict the number of participants that would need to be recruited. Isaacs (2014) noted there are no formal criteria for determining group size and the richness of data is more important than the number of study participants.

This paper focuses on the interview data generated from six women. They were selected based on analysis of findings which relates their experiences to the guidelines and because their responses provided interesting revelations of the ways in which non-directive/directive information-giving impacts on their autonomy. A theoretical sampling approach used mostly in grounded theory was adopted. This became part of a process and the interview schedule revised accordingly. This is an example of how grounded theory works inductively, building theory from theoretical sampling and iterative analysis.

#### *Ethics*

Ethical approval was granted from a national research ethics service ethics committee (reference number: 12/NW/0547).

#### **Data collection and analysis**

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With participants' permission, the semi-structured interviews were audio-recorded and field-notes taken concurrently. In line with grounded theory, the interview questions were guided by the researcher's data analysis. This approach allowed continuous adjustment of the interview questions in response to issues raised in earlier interviews, aiming to develop a well-saturated theory.

The process of transcription, coding and analysis was carried out manually by the researcher, that is, to retrieve, code and decide where slices of text might fit and recognise emerging themes identified as important by the women. The focus of the analysis was on three key stages.

#### *Stage one: early coding*

The initial stages of the analytical process consisted of reading and re-reading the interview transcripts word by word, line by line and applying initial codes. This is defined as 'open coding' (Birks and Mills, 2015). Data were coded for specific themes, for example, different aspects of women's interactions with midwives. This gave an initial focus on the data and was the process by which inroads into defining and categorising the data was made.

The analytical process went beyond data collection, transcription and analysis of interviews. Rather, the approach was the juxtaposition of recommendations in guidelines with individual women's quotes. The guidelines manual (NICE, 2014) states that the recommendations should reflect the strength of the evidence. For example, a recommendation should be framed in appropriate language such as 'offer'. It was the universal offer of screening tests that formed the main focal point of analysis. The aim was to conceptually link the recommendations in the guidelines with the research topic and explore women's experiences of their care. The rationale for this approach was to ensure that any analysis was conducted with the guidelines and not solely about them.

Grounded theory is appropriate when little is known about the topic under investigation (O'Donoghue, 2007). Although some empirical studies briefly allude to clinical guidelines, (Grimes et al, 2014; Williams et al, 2005), little is known about women's experiences of their care relating specifically to the guidelines' recommendations, thus highlighting the need for this research. Constructivist grounded theory that was used in this study promotes a flexible adaptation of grounded theory processes in which the contributions of participants and researcher help develop and construct a theory (Charmaz, 2014).

#### *Stage two: focused coding*

The next step consisted of careful re-reading of the data. Focused coding (Charmaz, 2014) requires the researcher to make decisions about which of the initial codes will make the most significant contribution analytically. Codes were compared with each other for contextual and conceptual similarities and differences. Specific issues, for example, a previous negative experience raised problems with the offer of a choice of alternatives. Others were women's views, for example, the problems they saw with making decisions. Others

were based on the researcher's interpretation of the data, for example, when there was a role for maternal autonomy in decision-making. These themes reflect different empirical positions regarding information-giving and women's wishes for distance/proximity in decision-making.

#### *Stage three: refinement*

The final step consisted of further refining the main thematic categories from which the theory would emerge. Two main and interwoven categories revealed the importance of interactions between women and midwives and women's individual needs for a non-directive/directive approach.

The grounded theory of 'striking a balance' was generated by data analysis, interpretation of the study data and synthesis of the findings in response to the research question.

#### **Findings and discussion**

The findings presented were selected because they provided interesting revelations of how women experience their care based on recommendations in guidelines, that is, non-directive/directive information-giving and its impact on their autonomy.

Women associated various meanings with the offer of Down syndrome screening. Five main themes emerged. These were: the importance of reciprocal trust and familiarity when making a decision; compelled to choose; restricting options; eager to choose; little concept of choice.

#### *Reciprocal trust and familiarity in decision-making*

This case was selected because it demonstrates not only the woman's trust in her midwife, but also the midwife's trust in the woman to make her own decision based on non-directive counselling.

#### **Sarah: gravida 9; para 6; 35 weeks' gestation; uncomplicated pregnancy**

Researcher: "Were you offered antenatal screening tests?"

Sarah: "Yes. The only thing about this pregnancy which has been different to the previous pregnancies is I've never had the blood test for Down syndrome before. I saw my community midwife (who I know really well). She said: 'Don't get me wrong, we can only advise and it's not our place to say whether you should or shouldn't, but you read the information and make the decision for yourself.' I'm very lucky, she's been my midwife for all my children, so I know her anyway. I thought I was an old hand at all this, but I even said to her: 'What do you think I should do?' Obviously, with having so many kids, previously I never read the information pack, but with the nuchal fold, I did and everything I wanted covered was there."

A trusting woman/midwife relationship contributes to the woman feeling safe and reassured, both physically and mentally. This may be more achievable when the woman is cared for by a familiar midwife, continuity facilitating the development of trust (Sandall et al, 2016). However, this is not exclusively the case. Leap and Edwards' theoretical work (2006) demonstrated that there are instances when the relationship has to be built up quickly and trust established instantaneously.

The trust of professional carers towards patients has been less extensively explored in the healthcare literature (Mogren et al, 2010). Thorstensen (2000) suggested the importance of midwives trusting the women they care for may not always be considered. The work of Kennedy (2000) suggested that midwives need to trust the women they care for to exercise their autonomy in a responsible way.

Sarah's account is an example of a grandemultigravida, despite her considerable experiential knowledge, needing to trust her midwife as the offer of screening tests for fetal abnormalities was new for her. Her account suggests that the midwife's approach was neutral. The woman expressed a need to be informed about how to prepare herself this time and trust from her midwife was meaningful in shaping her decision. Support from her midwife in a non-directive way helped facilitate the woman's decision.

Although her account suggests an information asymmetry, the woman's expression of her autonomy is to pursue the matter in an informed way. Her account concurs with the work of Durand et al (2010), that is, many women value written information. Her account suggests she is a judicious user of the information and demonstrates to her midwife she was informed about her options.

#### *Compelled to choose*

Another woman suggested that the offer of a choice and the way information was presented did compromise her autonomy. This extract was selected as a specific example of the midwife's directive approach.

#### **Jasmine: primigravida; 30 weeks' gestation; intrahepatic cholestasis of pregnancy**

Researcher: "When you were offered screening tests, was it made clear to you they were optional?"

Jasmine: "Yes it was. I had the one slightly later on – the triple test. Although it was presented as an option, at the booking-in session, the midwife – I don't want to use the word 'forceful', but she was far more encouraging about having it than not. [Pause...] I didn't want it particularly, but my husband did and I was kind of booked in for it – not against my will – I'm not going to say it was against my will because I had the right to say 'No, this isn't for me'. But yes, the one thing I remember being said to me was 'Well, you're only 30; there's a 1:900 and something chance of Down syndrome; you're really low risk, you may as well' and I think that stuck with me."

The interesting feature of Jasmine's account is the positive encouragement by the midwife to accept the test. The midwife's approach was inconsistent with guidelines. Authority was somehow transferred from the woman to the risk ratio presented to her and a course of action promoted in a direct sense by the midwife. The woman experienced it not so much as an option but as a recommendation by her midwife which guided her into complying. Her account concurs with Reminnick's (2006) work, which found that when women feel intimidated, they comply with their healthcare professional's recommendations. Her wish not to be tested has been compromised by professional authority.

Arguably, providing neutral information as per guidance does not eliminate the need for midwives to explain the risks/benefits/comparisons about screening and should be part of effective communication between woman and midwife with the woman's specific needs uppermost.

#### *Restricting options*

Some women suggested they placed their own restrictions on the offer of screening tests. The following case was selected because it exemplifies how the woman's experiential knowledge and relational values influenced her decision to decline the tests.

**Isabella: gravida 5; para 3 (one miscarriage); 27 weeks' gestation; uncomplicated pregnancy**

Researcher: "Regarding the screening tests, what did you decide?"

Isabella: "I didn't have the screening for Down syndrome because the only way it's 100% certain is the amniocentesis to guarantee and there's no way I'd have that. I'm scared with my history of miscarriage. It does take the enjoyment out of your pregnancy and you're working in weeks, not months. I've gone past that. We've only just gone into maternity, prior to that it was just getting to the next appointment, that's why I haven't chosen any of those tests.

"I've got a friend whose daughter is 15 with Down syndrome and it's not the worst. Also I'm actually studying the educational needs of children with disabilities at the moment."

Isabella does not wish to resort to testing and laboratory data to establish her risk factor. This in itself is a choice. She has her autonomy and chooses to exercise it to decline. As Beck-Gernsheim (1995) stated healthcare professionals have a duty to inform women about the available options, so that even women who decline screening are unable to do so until they have thought about the process. Although the woman does not indicate any sense of compulsion to deliberate between the available options, she could not elect not to be given the offer of screening. Rather, it was a part of her care over which she had little control. She is a multigravida and has experiential knowledge. She also has some acquired knowledge about Down syndrome. This raises the question of the nature of the dialogue between the midwife and woman and how it relates to her autonomous decision-making, that is, it should not close down opportunities for thoughtful refusal of screening. Her recent miscarriage was something not previously experienced. Her account concurs with Pilnick and Zayts' claim (2015) that some women declined screening because of the potential anxiety the tests might raise. It may seem a confusing picture that the woman's autonomy is enhanced not by expanding, but limiting her options. It also highlights the need for midwives to be aware that information-giving varies from one pregnancy to the next. For this woman, it might include support in a non-directive manner.

Another woman perceived the recommendations on screening for Down syndrome as superfluous or even a burden. This extract was selected because it is an example of how the universal offer of screening to some women can be unhelpful.

**Hannah: gravida 3; para 1; 31 weeks' gestation; one intrapartum death; attending medical specialties**

Researcher: "Did you have the offer of screening tests in this pregnancy?"

Hannah: "Yes, and from my previous experience, just a live healthy baby is fine. Even the midwives would be like, it was obviously the norm, everyone wants to know if there's anything up, any detrimental effects. What's the point in putting them (screening tests) there in the first place and then, yeah, you have these tests, but we're only 85% or 75% sure? Well, I'm quite an analytic person and I just think that's ridiculous; if there's anything up with your baby, we can find out, but it might not be. Then what's the point in telling you in the first place? Anyone who's had a traumatic experience, it opens your eyes. They (screening tests) don't need them, don't want them."

Hannah's response to the tragic events of her first pregnancy suggests a long-term reaction which, unsurprisingly, has influenced her second and current pregnancies. It has resulted in her not so much having a need to know, but rather no need to confirm nor refute a detectable fetal abnormality. The offer of a choice helped facilitate her refusal, but she suggests it was burdensome during a very tense pregnancy. The guideline's recommendation that all women should be offered tests cannot be framed in terms of the woman's self-selection or rejection of the option. Rather, it is something that results from it being set out as a recommendation. The guideline creates a dilemma in that she cannot choose not to choose. The concept of 'choosing not to choose' is not something new. The qualitative work of Armstrong and Kenyon (2017) referred to it within a framework where control was less important. This might be, for example, because women were unaccustomed to asserting themselves or want their professional carer to decide for them. Analysis of this study's findings diverge from these authors' work as the woman's account suggests that control is important. Hence, the main purpose and perceived benefit of the guideline, that is, to make the option available as a deliberate act, is problematic for some women.

In the light of the woman's situation, while recognising the significance of non-directiveness, it is important for midwives to consider the specific interactions needed to help her make a decision consistent with her own values.

#### *Eager to choose*

This case was selected because the extracts concur with the objectives of the recommendations in guidelines.

**Lisa: gravida 2; para 1; 28 weeks' gestation; uncomplicated pregnancy; attending for anti-D prophylaxis**

Researcher: "Did you have the offer of antenatal screening tests?"

Lisa: "Yes, I had my first baby in France in 2009 and coming from somewhere else you have no idea of what to expect. This time I was offered and it was clear it was optional, particularly in the literature which took quite a bit of ploughing through, actually.

"Yeah, one of the things I found quite interesting was the long letter saying: 'Even if you do the screening tests that doesn't necessarily mean that they know your baby is or isn't



going to be Down syndrome.' It was the same with the scan – that it won't pick up on everything, whereas the experience I had previously in the French system was they just did things and tell you the results. There seemed to be no worry whether or not there might be some degree of... you just sort of got told: 'You've got a 1:330, but the baby's not positive for Down and it's just left there [laughs]. They can be quite clinical – a 'doctor knows best approach'. There's an appointment made for you. Turn up for it!"

Lisa's previous experience is shaped by the French antenatal care system. Her account suggests a genuine effort to read about the risks/benefits of the screening tests and a grasp of their implications. This finding concurs with the work of Farrell et al (2011), that many women review information at their own pace, rather than trying to absorb large amounts at a single clinic visit. It is the offer of tests in the current pregnancy that appears to have exceeded the woman's expectations and given her a sense of control, that is, she was aware there was a choice and her account suggests she had sufficient information to make a decision. In contrast to the French system, her experience of the offer of screening appeared non-directive and neutral. This is an example of the guideline enhancing the woman's autonomy.

The guideline coheres with her values in that it encourages her participation. Of course, it may be that her newly found empowerment is related more to the comparisons she inevitably draws between the French system and care offered in her current pregnancy and somewhat less to the offer of a choice in recommendations in NICE clinical guidelines.

### *Screening for Down syndrome in France*

The policy for prenatal screening of Down syndrome in France in 2009 stated:

- Nuchal translucency measurements as a matter of routine between 11 and 13 weeks of (sic.) gestation.
- Maternal serum screening between 14 and 16 weeks, which should be systematically proposed to all women as stated by a law implemented in 1997 (de Vigan, 2004).

In this respect, it would be interesting to turn the equation around and ask if the woman had been cared for in England last time, whether her perception would have differed, or whether she would have accepted her care without question. A different system of care this time enhances her autonomy, but arguably it is within that very system. The wording of the French guideline made no reference to a choice and it is interesting that the woman's perception of what she perceived as routine is borne out in the guideline's recommendations. The woman's account concurs with Vassy's (2006) research, which found that most women in France did not make informed decisions to be tested, which affected their autonomy.

The wording of the NICE guideline (2008) is more facilitative than the French. For Lisa, there has been a conscious effort to offer testing within the context of informed choice in accordance with guidelines. Her account suggests that being in England made her feel more in control than in France. Rather than a direct, prescriptive approach, the woman was able to arbitrate on the information she was given.

### *Little concept of choice*

**Safia: gravida 5; para 4; 28 weeks' gestation; uncomplicated pregnancy**

Researcher: "Were you offered antenatal screening tests?"

Safia: "Yes. I had the scan and blood test. I don't mind anything [laughs]. Whatever's going – exactly. Down syndrome they test for is it? I forget about this word [laughs again]."

Safia suggests she accepted the tests, which she viewed as unproblematic. Screening is sending out a clear message of approval which is woven into the matrix of what was expected in that it was routine, not questioned and hardly experienced as a choice. Her account concurs with the work of Tischler et al (2011), which pointed to women's acceptance of screening as routine. This is not in accordance with the recommendations in the guidelines. Although she had a decision to make, she suggests she had not gone through the process of thinking about what might happen with a high-risk result. This highlights the importance of interactions between women and midwives and suggests that there are instances when directiveness is necessary in order for women to make a decision based on good information.

### **Implications**

A trusting relationship can enhance the woman/midwife relationship. This finding concurred with the work of Thorstenson et al (2015) whose qualitative work suggested that women valued their trusted midwives' support during pregnancy. A grandemultigravida's account suggested that trust in a familiar midwife helped empower her, as screening tests for Down syndrome were novel for her. The implication for midwives working with the guidelines is the importance of recognising and responding to women's changing information needs in subsequent pregnancies. The woman suggested she and her midwife established common ground based on two-way trust, which is key to the midwife's supportive involvement in the decision-making process.

This is an example of not-so-subtle pressure being placed on a woman to accept antenatal screening. Although not directly attributable to the guideline's recommendations, a woman suggested she was not given information in a non-judgemental way. Recommendations in guidelines set out non-directive counselling, suggesting the midwife's actions compromised the woman's autonomy. The implication is that midwives should follow guidelines where they refer to being non-directive and enable women to consider screening options carefully, unless, of course, the woman expresses a specific wish for directive information.

Other women's accounts suggested that the offer of screening was irrelevant. Recommendations in guidelines meant they could not elect not to be given the option of testing. On one level, they had little control over this aspect of their care, as the offer of screening forced them to choose. On another level, they expressed their autonomy by declining. It is ironic that the expansion of antenatal screening tests is perceived by some women as placing a restriction on their autonomy. Midwives should be aware that some women may choose not to choose and it is through effective interactions that midwives can discover when non-directive support may

be the woman's preferred option.

The offer of a choice as a means of empowerment was suggested by another woman. This is an example of the enabling effect of written information that the woman was able to deliberate over. Another woman's account suggested that the offer of screening was barely experienced as a choice. Rather, it was seen as a stage to be completed in the process of having a healthy baby. Hence, what is clearly set out in guidelines as a choice became absorbed into the organisational context of antenatal care. Midwives should be aware that this is contrary to recommendations in the guidelines and a directive approach may be warranted to ensure the woman makes her decision based on good information.

#### *Strengths and limitations*

There were minimal study exclusion criteria, which enabled sampling of a range of women with different gestations, parity and pregnancy conditions to have their views explored.

However, several limitations should be noted. The study was confined to a single hospital antenatal clinic and limited to women who could read, understand and speak English. Hence, no comparison data are available, for example, from women attending general practitioners' surgeries, or women receiving care in their own homes, or women from more diverse populations.

Interviews were conducted post-screening. Future work would need to take into consideration that women were interviewed at different gestations, which may have influenced their accounts.

Further, Taylor and Francis (2013) highlight the risk of researcher influence on the interview process. Preconceived thoughts through a former practising midwife lens were a potential bias in this study.

#### *Practice*

Analysis of findings suggested that midwives need to communicate in a range of different ways to meet diverse

needs. The intertwining rhetoric of informed choice and non-directive care should be carefully negotiated between woman and midwife. The study highlights the need for further development, support and possibly training for midwives.

#### *Research*

The wider recommendations in NICE guidelines are clear about the importance of discussion between women and midwives. However, more research is needed to understand how non-directive/directive information-giving can impact on women's decisions. The use of focus groups could provide additional insights. An observational study of interactions between women and midwives could add a further dimension and help determine the type of interactions which are most effective. It would be valuable to capture women's experiences of their care in which they received the correct 'balance' of information and the ways in which it empowered them. A controlled comparative study would be useful in this respect.

#### *Conclusion*

The study's findings make clear the need for a broader reflection about the nature of non-directive and directive information-giving. Enabling women's decision-making is not a process with one specific approach and should be negotiated. Non-directiveness does not exempt midwives from responding to women's need for information, that is, in the strictest sense, it may not be possible.

Guidelines should place greater emphasis on exploring women's particular needs and preferences, learning from them and offer midwives specific means to do this. It places an onus on midwives to adapt their communication skills in order to strike a balance consistent with individual women's information needs.

The research contributes by making visible alternative ways to promote women's informed decision-making. In line with the aim of grounded theory to promote useful research, it aims to make modest improvements.

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# Maternity high dependency care in obstetric units remote from tertiary referral centres: findings of a modified Delphi study

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## Abstract

**Background.** Increasing numbers of pregnant and postnatal women require higher levels of care, including maternity high dependency care (MHDC), due to comorbidities and/or obstetric complications. Up to 5% of women in the UK will receive MHDC, although there are varying opinions as to the defining features and definition of this care. Furthermore, some evidence suggests that the size and type of obstetric unit (OU) influences the way MHDC is provided.

**Objectives.** The aim of this modified Delphi study was to 'determine what constitutes high dependency care in OUs remote from tertiary referral centres'. The research objectives were to achieve a consensus on the definition and defining features of MHDC in OUs remote from a tertiary referral centre, examine whether the definition for defining features of MHDC were the same for OUs with differing annual birth rates and to investigate if the definition for, and defining features of MHDC were the same for the professional groups of doctors and midwives working in OUs with similar annual birth rates.

**Ethics.** Ethical approval was granted by the NHS research ethics committee and the relevant local NHS research and development departments.

**Method.** A three-round modified Delphi survey was conducted. The first-round questionnaires were sent to 193 obstetricians, anaesthetists, and midwives who worked across seven OUs (with annual birth rates ranging between 1500 and 4500), remote from tertiary referral centres, in southern England. Round one involved completion of a qualitative self-report questionnaire. Rounds two and three were predominantly quantitative and respondents were asked to rate their level of agreement or disagreement against five-point Likert scale items for a series of statements derived from the first-round findings. The level of consensus for the combined percentage of strongly agree/agree statements was set at 80% for the second and third rounds. A detailed account of the research methods used are reported in the September 2017 issue of *Evidence Based Midwifery* (James et al, 2017).

**Findings.** Response rates for the first, second and third rounds were 44% (n=85/193), 87% (n=74/85) and 90.5% (n=67/74) respectively. The respondents achieved consensus regarding the defining features of MHDC with some exceptions including post-operative care and postnatal epidural anaesthesia. MHDC was defined as 'an interim level of care for women requiring interventions over and above the [specialised] "high-risk" obstetric care that will be carried out routinely on a consultant-led labour ward, but not requiring care on an intensive care unit. It will be implemented where a woman has deteriorated clinically but her care can be managed appropriately on the labour ward'. MHDC was likened with level 2 care (Intensive Care Society, 2009) although respondents from the three smallest OUs agreed it also comprised level 1 care. The smaller OUs were less likely to provide MHDC and had a more liberal policy of transferring women to intensive care. Midwives in the smaller OUs were more likely to escalate care to the intensive care unit than their medical colleagues.

**Conclusion.** MHDC is complex and this Delphi survey corroborates previous evidence that local variations exist in MHDC provision. Varying opinions as to the level of care that equates with MHDC were apparent, but it is unknown how these variations influence women's care. Organisationally robust systems are required to promote safe, equitable MHDC including precise escalation of care guidelines incorporating standardised terminology.

**Key words:** Maternity/obstetric high dependency care, maternal critical care, levels of critical care for adults, invasive monitoring, obstetric intensive care, Delphi survey, evidence-based midwifery

## Introduction

Increasing numbers of pregnant and postnatal women require higher levels of care, including maternity high dependency care (MHDC), due to comorbidities and/or obstetric complications. Up to 5% of women in the UK will receive MHDC (Saravanakumar et al, 2008), although there are varying opinions as to the defining features and definition of this care. Furthermore, some evidence suggests that the size

and type of obstetric unit (OU) influences the way MHDC is provided (Zwart et al, 2010; Cordingley and Rubin, 1997). The overarching aim of this modified Delphi study was to 'determine what constitutes high dependency care in OUs remote from tertiary referral centres'. The research aim was addressed through the following objectives, which were to:

- Achieve a consensus on the definition for, and defining features of MHDC



- Examine whether the definition for, and defining features of MHDC are the same for OUs that have different annual birth rates and are remote from a tertiary referral centre
- Investigate if the definition for MHDC and its defining features are the same for the professional groups of doctors and midwives, who work in OUs with similar annual birth rates that are remote from a tertiary referral centre.

A detailed rationale for this Delphi survey examining MHDC, and the precise methods used, are reported in the September 2017 issue of *Evidence Based Midwifery* (James et al, 2017). This paper presents and discusses the research findings.

## Findings

The response rates were 44% (n=85/193) for the first survey round, 87% (n=74/85) for the second round and 90.5% (n=67/74) for the third round. Despite non-responders, all professional titles comprising the expert panel were represented during the three survey rounds, which upheld panel stability. A mixture of midwives and doctors represented each OU, although the ratio of midwives to doctors was not equal across all the OUs. No respondents had been registered with their requisite professional bodies for less than five years. Overall, 76.5% of the respondents (n=65) stated they had undertaken training, courses or study days that were relevant to MHDC provision. By contrast, n=20 (23.5%) identified they had not undertaken any training relevant to MHDC provision, with the majority of these being midwives. Most of the midwives who returned the round one (R1) questionnaire (n=41, 93.2%) identified they also held a nursing qualification.

### Round one findings

Findings are presented by round of the Delphi study. Four overarching themes emerged from the qualitative data. These were: conditions, vigilance, intervention, and service delivery.

The theme of 'conditions' encompassed the categories of obstetric conditions, comorbidities, intrapartum care, complications, physiological instability and emotional and psychosocial complications. The 'vigilance' theme focused on the respondents' need to detect clinical changes in a woman's condition. Vigilance comprised not only basic non-invasive clinical monitoring such as pulse, blood pressure and respiratory rate recording but more complex invasive monitoring such as central venous pressure and arterial line recording. Vigilance also included the categories of staff to patient ratios, the need for medical reviews, clinical investigations, and the use of documentation, such as Early Warning Score systems to detect clinical changes.

The interventions theme included the categories of post-operative care, step-down care following an admission to intensive or coronary care, care planning and treatments related to MHDC. This theme also included 'intervention level', which included the sub-categories of 'subjective' definitions for MHDC and 'objective' definitions for MHDC using the Intensive Care Society (ICS) (2009) levels of care classification system.

The service delivery theme encompassed the categories of multidisciplinary working, the environment in which

care was delivered, funding/available resources, the need for appropriately trained professionals and the risk management systems in place to ensure safe and effective care provision.

### Round two findings

There were 36 statements where consensus agreement was achieved by the respondents during round two (R2). Specific conditions, clinical circumstances and interventions were identified as defining features of MHDC and these are presented in Table 1 (overleaf).

Relating to the theme of 'conditions', the respondents' additional qualitative comments identified that the stability of the patient and severity of the condition would influence the decision to provide routine labour ward care, MHDC or transfer a woman to intensive care:

*"All are mainly dependent on severity of the conditions and stability of patient as most – if stable, can be managed normally"* (B/12).

In terms of the vigilance that characterises MHDC, there was strong consensus that non-invasive monitoring was vital to MHDC. However, some respondents commented that invasive monitoring was an indication for transfer to the intensive care unit (ICU):

*"Women with arterial lines should not be cared for on a labour ward"* (D/23).

Some of the interventions identified as indications for MHDC were also highlighted as indications for ICU care:

*"Any active respiratory or renal support is critical care level 3 and not high dependency care as I see it"* (D/23).

The R2 statements that did not achieve 'strongly agree' or 'agree' consensus responses included 25 statements describing conditions (such as obstetric cholestasis, mental illness, gestational diabetes, fetal loss), 13 statements relating to vigilance (such as vital signs recorded <4 hourly but > or =hourly, increased use of imaging, informal medical reviews), and 25 statements describing interventions (such as routine post-operative care up to 24 hours after CS, prolonged post-operative care >24 hours, postnatal epidural, oxygen therapy <50% by face mask and oxygen therapy >50% by face mask).

Of the four R2 statements providing overarching descriptions for MHDC, only one of these – 'MHDC is an interim level of care between normal and intensive care' – achieved a consensus response (83.8% agreement). Only 33.8% (n=25) of the respondents were familiar with the ICS levels of critical care for adults (ICS, 2009). A total of 48 (64.9%) respondents were not familiar with the ICS levels of care and one respondent (1.3%) did not answer this question. Those who were familiar, equated MHDC with level 2 care (n=24/25, 96.0%), although level 1 care almost gained consensus (n=19/25, 76.0%). Twelve of the respondents (48%) also likened MHDC with level 3 care.

### Round three results

The round three (R3) results are presented for the whole respondent group (n=67), but are also reported for respondents representing OU groups with similar birth rates

**Table 1. The R2 statements where consensus agreement was achieved**

Key: SA = strongly agree, A = agree, SD = strongly disagree, D = disagree, NAND = neither agree nor disagree

Please rate how strongly you agree or disagree that the conditions/ pre-existing conditions/complications listed below are indications for maternity high dependency care (MHDC).		Median score (IQR)	SA/A %	SD/D %	NAND %	Missing response %
<b>Conditions</b>	Hypertensive disorders (for example moderate to severe pre-eclampsia; HELLP syndrome)	5 (1)	98.6	0	1.4	0
	Obstetric haemorrhage	5 (0)	97.3	0	2.7	0
	Confirmed amniotic fluid embolism (AFE)	5 (0)	97.3	2.7	0	0
	Signs/symptoms of shock	5 (0)	97.3	2.7	0	0
	Sepsis	4 (1)	95.9	1.4	0	2.7
	Disseminated intravascular coagulation (DIC)	5 (0)	95.9	1.4	0	2.7
	Organ failure	5 (0)	95.9	4.1	0	0
	Diabetes	4 (1)	94.6	1.4	4.1	0
	Physiological compromise	5 (1)	94.6	5.4	0	0
	Maternal collapse	5 (0)	94.6	4.1	1.4	0
	Suspected AFE	5 (0)	93.2	0	6.8	0
	Woman who is critically ill	5 (0)	93.2	4.1	1.4	1.4
	Organ dysfunction	5 (1)	93.2	4.1	2.7	0
	Condition threatening maternal life	5 (1)	89.2	2.7	6.8	1.4
	Acute fatty liver of pregnancy	5 (1)	85.1	5.4	8.1	1.4
	Cardiac conditions (such as valvular heart disease)	4 (1)	83.8	2.7	10.8	2.7
Confirmed deep vein thrombosis/pulmonary embolism	4 (1)	83.8	4.1	12.2	0	
In relation to the observation and monitoring of women, please rate how strongly you agree or disagree that the statements below represent features of MHDC.		Median score (IQR)	SA/A %	SD/D %	NAND %	Missing response %
<b>Vigilance</b>	Recording of observations on HDU chart	5 (1)	91.9	0	5.4	2.7
	Continuous monitoring vital signs	5 (1)	90.5	1.4	8.1	0
	Vital signs < hourly	4.5 (1)	86.5	1.4	12.2	0
	Continuous electrocardiogram (ECG)	4 (1)	86.5	4.1	9.4	0
	Neurological observations	4 (1)	86.5	5.4	5.4	2.7
	Continuous ECG	4 (1)	86.5	4.1	9.4	0
	Neurological observations	4 (1)	86.5	5.4	5.4	2.7
	Joint lead clinicians	4 (1)	85.1	2.7	10.8	1.4
	Regular and frequent investigations	4 (1)	85.1	2.7	9.4	2.7
	Invasive monitoring such as central venous pressure (CVP line)	5 (1)	82.4	2.7	13.5	1.4
	Invasive monitoring arterial line	5 (1)	82.4	5.4	12.2	0
Please rate how strongly you agree or disagree that the interventions listed below are components of MHDC.		Median score (IQR)	SA/A %	SD/D %	NAND %	Missing response %
<b>Interventions</b>	Step-down care post ICU	4 (1)	93.2	4.1	2.7	0
	Administration of intravenous (IV) anticonvulsants	5 (1)	93.2	0	6.8	0
	Involvement of critical care outreach team or ICU	4 (1)	90.5	4.1	5.4	0
	Transfer of patient such as to ICU or coronary care	5 (1)	90.5	1.4	5.4	2.7
	Administration of IV antihypertensive	4 (1)	89.2	2.7	8.1	0
	Drugs/fluids via central line (CVP line)	5 (1)	87.8	2.7	6.8	2.7
	Administration of inotropes/vasopressors	4 (1)	86.5	5.4	6.8	1.4
	Renal support	5 (1)	81.0	17.6	1.4	0

**Table 2. R3 results identifying the indications for intensive care, as reported by doctors and midwives for all the OUs combined and those working in OUs with similar annual birth rates**

Obstetric unit (Annual birth rate)	Column 1 All OUs A-G (1500 -4500)		Column 2 Group one C and D 4000/4500		Column 3 Group two A and B 3300/3300			Column 4 Group three E, F and G 1700/2220/1500		
	DR + MW	DR + MW	DR	MW	DR + MW	DR	MW	DR + MW	DR	MW
Professional group (DR= doctor, MW= midwife)										
Number of respondents	67	25	13	12	21	9	12	21	10	11
<b>Section 1. Patients with the following conditions or interventions should be cared for on an ICU:</b>	<b>Percentage of respondents in favour of ICU care</b>									
Severe obstetric conditions (such as severe pre-eclampsia, HELLP, eclampsia, major haemorrhage, acute fatty liver disease)	61.2	56.0	69.2	41.7	42.9	44.4	41.7	85.7	80.0	90.9
Suspected amniotic fluid embolism	70.1	60.0	69.2	50.0	66.7	55.6	75.0	85.7	70.0	100
Confirmed amniotic fluid embolism	92.5	88.0	76.9	100	95.2	100	91.7	95.2	90.0	100
Disseminated intravascular coagulation	89.6	88.0	76.9	100	90.5	88.9	91.7	90.5	90.0	90.9
Physiological deterioration/compromise (unstable patient despite escalation of appropriate care)	98.5	96.0	100	91.7	100	100	100	100	100	100
Continuous ECG monitoring and/or neurological observations required	56.7	52.0	46.2	58.3	52.4	33.3	66.7	66.7	30.0	100
Invasive monitoring – arterial line	62.7	56.0	53.8	58.3	47.6	33.3	58.3	85.7	70.0	100
Invasive monitoring – pulmonary artery flotation catheter (Swan Ganz lines)	91.0	80.0	100	58.3	95.2	88.9	100	100	100	100
Administration of inotropes/vasopressors (for example dopamine)	86.6	80.0	100	58.3	85.7	88.9	83.3	95.2	100	90.9
Drugs and/or fluids administered via a central line	46.3	40.0	30.8	50.0	19.0	22.2	16.7	81.0	60.0	100
Continuous oxygen therapy (such as >50% given by face mask)	55.2	44.0	38.5	50.0	52.4	33.3	66.7	71.4	60.0	81.8
Continuous oxygen therapy (such as <50% given by face mask)	16.4	20.0	7.7	33.3	0	0	0	28.6	10.0	45.5
Non-invasive ventilation such as CPAP or BIPAP	86.6	72.0	76.9	66.7	100	100	100	90.5	80.0	100
Intubation and ventilation	98.5	96.0	100	91.7	100	100	100	100	100	100
Renal support	94.0	84.0	84.6	83.3	100	100	100	100	100	100

(James et al, 2017) and by the professional groups of doctors and midwives representing OUs with similar birth rates, where findings of significance were noted.

The first section of the R3 questionnaire asked the respondents whether intensive care was required for 15 statements identified during the second round. Of these 15 statements, n=8 achieved ≥80% ‘yes’ responses in favour of intensive care as opposed to providing MHDC (see Table 2, column 1).

The respondent group as a whole did not achieve consensus agreement that intensive care was required for women with severe obstetric conditions, suspected amniotic fluid embolism (AFE), or those requiring continuous ECG or neurological observations, arterial line monitoring, drugs/ fluids administered via a central line, and continuous oxygen therapy (for example >50% given by face mask) (see Table

2, column 1). By contrast, the respondents representing OU group three, the OUs with the lowest annual birth rates (see Table 2, column 4), achieved consensus that women with severe obstetric conditions, suspected AFE, invasive monitoring by arterial line and the administration of drugs/ fluids via a central line required intensive care as opposed to MHDC. Overall, the respondents of OU group three recorded the most statements in favour of intensive care (n=12) when compared with the respondents representing the other two OU groups.

Further analyses by the professional groupings of doctors and midwives identified that n=14 of the 15 statements were identified as indications for intensive care by the midwives representing OU group three, compared with n=9 statements for the doctors (see Table 2, column 4). Suspected AFE, continuous ECG monitoring or neurological observations,

invasive monitoring (by arterial line), drugs/fluids administered via a central line and continuous oxygen therapy (such as >50% given by face mask) were all identified as indications for admission to ICU by these midwives.

The number of 'yes' responses (n=8) provided by the doctors and midwives working in OU group two were identical and applied to the same statements (see Table 2, column 3). In contrast, the number of 'yes' answers provided by the doctors and midwives representing OU group one were the same (n=5), but there was disparity in terms of the statements these related to (see Table 2, column 2). The second section of the R3 questionnaire achieved consensus responses across the whole respondent group for all statements.

A total of 10 third-round statements did not achieve consensus responses including:

- Five describing conditions (autoimmune disorders with clinical instability, severe pre-existing condition with clinical stability, suspected pulmonary embolism (PE), morbid obesity, history of organ transplantation with clinical stability)
- Two relating to vigilance (referral to paramedical staff, such as a physiotherapist, operating department practitioner and monitoring of vital signs more frequently than four hourly but not more frequently than hourly)
- Three interventions (prolonged post-operative care because of unsatisfactory patient recovery, a woman needing epidural anaesthesia, excluding pain relief during labour, and immediate post-operative care (first hour post-CS)).

When comparing the responses provided by the doctors and midwives representing each OU group, there was comparatively close agreement as to the statements that did and did not gain consensus in favour of MHDC however, some variations were evident. Midwives representing OU groups one and three did not achieve consensus that IV antihypertensive administration is an indication for MHDC whilst the doctors did. The doctors across all three OU groups achieved consensus that immediate post-operative care does not constitute MHDC, while the midwives did not achieve consensus. Moreover, the midwives across all three OU groups achieved consensus agreement that prolonged post-operative care >24 hours was an indication for MHDC while the doctors did not.

By the final round of the Delphi survey the respondent group agreed on a definition for MHDC:

*"An interim level of care for women requiring interventions over and above the [specialised] 'high risk' obstetric care that will be carried out routinely on a consultant-led labour ward, but not requiring care on an intensive care unit. It will be implemented where a woman has deteriorated clinically but her care can be managed appropriately on the labour ward. It is more likely to be undertaken for maternal than fetal reasons."*

## Discussion

### Defining MHDC

The consensus definition emerging from this Delphi study has similarities to that provided by Martin and Hutchon

(2008: 954) who define high dependency care as 'a standard of care between the general ward and full intensive care'. It also equates with a definition for 'step-up care' where patients are transferred to a higher level of care from a ward area or emergency department due to 'acute clinical changes' not requiring intensive care (Prin and Wunsch, 2014: 1212). The MHDC definition is not absolute, as the phrase 'can be managed appropriately on the labour ward' reflects local variations. Using the objective criteria of the ICS's (2009) 'levels of critical care for adult patients' classification system, the respondents equated MHDC with level 2 care. However, the number of professionals who were aware of this classification system was relatively low, and some equated it with level 1 and level 3 care.

Education regarding the ICS levels of care for both medical and midwifery staff is needed to promote a shared understanding of what constitutes MHDC at the local level and standardise the terminology used to describe this cohort of women. MacLennan et al (2016) highlight that accurate data collection is particularly important as women receiving level 2 care forms part of the Critical Care Minimum Data Set that feeds into the service commissioning process. As the ICS levels of care were first introduced in 2002 (ICS, 2009), the term 'high dependency care' may no longer be useful.

### Defining features of MHDC

The complexities of MHDC were reflected by the large amounts of data generated over the three rounds of the Delphi study and encompassed the conditions, vigilance, and interventions characterising this type of care.

In terms of the conditions that typify MHDC, the familiarity and expertise that professionals acquire due to frequent or 'high volume' exposure to certain conditions or complications may explain why the respondent group agreed that women with severe obstetric conditions such as hypertensive disorders of pregnancy and obstetric haemorrhage were suitable candidates for MHDC (Sultan et al, 2013; Saravanakumar et al, 2008). Moreover, venous thromboembolism and sepsis are also 'high profile' complications that were likely to be familiar to the respondents (Society of Critical Care Medicine, 2015). AFE is rare (Knight et al, 2010) and women with confirmed AFE may go on to develop pulmonary hypertension, left ventricular failure and coagulopathy requiring advanced respiratory/organ support (level 3 care) and intensivist expertise (Foley et al, 2014; Winter et al, 2012), which may explain the consensus that these women require intensive care.

While the presence of clinical instability was agreed to be an indication for MHDC, ongoing physiological instability was viewed as an indication for intensive care, reflecting the assertion that care in the ICU is required for women 'whose conditions are life-threatening' (Martin and Hutchon, 2008: 954). Unresolved physiological instability is associated with increased severity of illness, and higher patient acuity necessitating complex haemodynamic monitoring and more active treatments outside the facilities within OUs (Maternal Critical Care Working Group, 2011). This also corroborates



why the complex disorder of disseminated intravascular coagulation (DIC), often indicative of maternal physiological deterioration secondary to major obstetric haemorrhage and sepsis, achieved consensus in favour of intensive care (Belfort et al, 2010). Overall, the respondents focused heavily on the conditions that necessitate MHDC and a shift of focus towards the need for organ support in line with the ICS (2009) levels of care classification system is required.

#### *Vigilance as a characteristic of MHDC*

Level 2 patients require a minimum of hourly observations (ICS, 2009), and there was consensus that vital signs recorded less than hourly and/or continuously were a feature of MHDC. In line with other reports, ECG monitoring, neurological observations and invasive monitoring using central venous pressure and arterial lines were viewed as features of MHDC by many of the respondents (Whitworth et al, 2016; Saravanakumar et al, 2008). However, midwives representing the three OUs with the lowest annual birth rates agreed that intensive care was indicated. This finding may reinforce previous assertions that midwives in smaller OUs do not have the appropriate equipment or skills to care for women requiring these types of monitoring (Sultan et al, 2013; Cordingley and Rubin, 1997). Swan Ganz monitoring was agreed to be an indication for ICU admission and reflects the respondents' recognition of the complexities and complications associated with this type of monitoring which is indicated for the sickest patients (Carlin and Alfirevic, 2008).

Most respondents viewed "one-to-one" care with a professional in constant attendance' as a characteristic of MHDC. This staff to woman ratio is advocated for women receiving MHDC when in individual rooms and is a normal clinical requirement within UK labour wards (Obstetric Anaesthetists' Association and the Association of Anaesthetists of Great Britain and Ireland (OAA/AAGBI), 2013). However, this ratio does not reflect the general literature suggesting lower staff to patient ratios may be acceptable for patients receiving high dependency care (Garfield et al, 2000).

The respondents agreed that women needing MHDC should receive regular medical reviews, and care should be led jointly by a consultant obstetrician and a consultant anaesthetist. This joint leadership approach utilises the different skills that obstetricians and anaesthetists bring to MHDC provision and reflects professional recommendations (Maternal Critical Care Working Group, 2011; Martin and Hutchon, 2008).

#### *Interventions characterising MHDC*

Step-down care, classed as level 2 care (ICS, 2009), is appropriate for patients no longer requiring intensive care, but still requiring a level of monitoring and/or intervention that cannot be provided in the general ward area (Vincent and Rubenfeld, 2015). Staff working on busy antenatal/postnatal wards may not have the necessary equipment, skills, and/or capacity to provide safe level 2 care (Vincent and Rubenfeld, 2015). This may explain why most

respondents achieved consensus that step-down care is an indication for MHDC on the delivery suite.

The importance of accessing specialist knowledge and expertise when caring for acutely ill women was recognised in this study, with most respondents agreeing that referral to specialist medical staff, the critical care outreach team (CCOT) and ICU were components of MHDC. The CCOT has previously been reported as a mechanism for supporting ward staff to care for acutely ill patients (Chellel et al, 2006) thereby promoting safe care. Conversely, the roles of paramedical staff including physiotherapists, ODPs and registered general nurses (excluding critical care nurses) were not strongly regarded as part of the wider MHDC support network, despite their expertise in caring for acutely ill patients (Patil et al, 2015). This finding may reflect variations in local MHDC provision.

The administration of medications, including intravenous anticonvulsants and antihypertensives, were agreed components of MHDC, while intensive care was identified as the preferred option for women requiring inotropes and vasopressors. The latter may be administered to women with physiological instability at the severe end of the illness spectrum, reflecting the respondents' propensity to transfer women with unresolved physiological instability to ICU (Benham-Hermetz et al, 2012). Only the midwives in the three smallest OUs achieved 100% consensus that women needing drugs and/or fluids via a central line require intensive care, reflecting previous propositions that smaller OUs may be poorly equipped to provide this level of care (Cockerill et al, 2011; Cordingley and Rubin, 1997).

The administration of 50% or more oxygen via a facemask to maintain oxygen saturations is a feature of level 2 care (Maternal Critical Care Working Group, 2011). This treatment evoked variable opinion as to whether it was an indication for MHDC or intensive care. The aetiology of respiratory failure is complex and multifactorial (van de Velde et al, 2013) which may explain why the respondents were unable to take a definitive stance on the most appropriate care for women with respiratory failure.

The variations in responses, and lack of consensus relating to the provision of immediate and extended post-operative as interventions comprising MHDC care, may be attributed to the differences in service provision across OUs. Some services utilise nurses to provide immediate post-operative care, while others use appropriately trained midwives (OAA/AAGBI, 2013). The administration of epidural postnatal pain relief is classed as level 1 care (ICS, 2009) and this intervention also caused varying opinion among the respondents and consensus was not achieved. Local variations in the methods of postnatal pain relief adopted may have influenced this finding (National Collaborating Centre for Women's and Children's Health, 2011).

Women requiring the complex interventions of non-invasive ventilation, tracheal intubation/ventilation, and renal support were agreed to be candidates for the ICU. The equipment and expertise required for these interventions frequently fall within the remit of the intensivist (Vaughan

et al, 2010) and the respondents' opinions reflected this.

Routine physical care (such as pressure area care) and psychological/family support were agreed components of MHDC, reflecting the respondents' holistic view of this type care (Billington and Stevenson, 2007). A balance between physical and psychological support is paramount for women receiving MHDC as a qualitative study reports women felt healthcare professionals prioritised physical care over emotional support during MHDC (Bassett et al, 2016).

#### *The impact of annual birth rate and professional role on the defining features of and definition for MHDC*

Although there was parity across the three OU groups regarding many of the defining features of MHDC, the professionals working in the three OUs with the lowest annual birth rates were more likely to request women be transferred to ICU. This finding reflects dated evidence and expert opinion suggesting local variations exist in MHDC provision (Vercueil and Hopkins, 2015; Scrutton and Gardner, 2012; Cordingley and Rubin, 1997). Furthermore, midwives working in the three smaller OUs were more likely to request that women be transferred to ICU than their medical colleagues, suggesting they did not have the appropriate skills or they did not use them frequently enough to maintain competence to provide MHDC (Sultan et al, 2013; Bench and Fitzpatrick, 2007).

It is not known how midwives' and doctors' differing perceptions of MHDC manifest in the OU setting on a day-to-day basis, or whether these differing opinions are mediated by team interactions utilising a collaborative approach to decision-making (Hastie and Fahy, 2011). Patient safety is enhanced when members of a team possess a common understanding regarding a task, the objectives they wish to achieve and the processes that will be used to meet these objectives (The King's Fund, 2008). Varying definitions of MHDC may lead to inequitable care provision for acutely ill women (Williams et al, 2015) and the admission of relatively low acuity patients to ICU may have a deleterious impact on those with greater need for higher levels of care (Stelfox et al, 2012). Moreover, the detrimental effect of early escalation to the ICU on the mother-baby relationship cannot be discounted.

The draft recommendation that one midwife per shift has the skills to provide MHDC (Intercollegiate Maternal Critical Care Sub-Committee of the Obstetric Anaesthetist

Association, 2015) is a pragmatic approach to ensure women can receive MHDC. However, the introduction of midwives with MHDC skills in smaller OUs is controversial, given the limited opportunities for maintaining their competencies and transfer of women to the ICU may be more feasible (Vercueil and Hopkins, 2015). In OUs where midwives with the skills to provide MHDC are unavailable, the mobilisation of external support mechanisms including the CCOT or recovery/anaesthetic nurses may facilitate short-term MHDC provision (Vercueil and Hopkins, 2015; RCOG, 2013).

#### **Strengths and limitations**

This is the first published Delphi survey involving obstetricians, anaesthetists and midwives that has examined the concept of MHDC. The findings offer a detailed, and holistic insight into MHDC. While this survey was completed approximately seven years ago, the issues and ambiguities regarding the terminology used to describe MHDC, and the variations surrounding local service provision appear to reflect previous dated research and contemporary discourse (Vercueil and Hopkins, 2015; Williams et al, 2015; Cordingley and Rubin, 1997).

#### **Conclusion**

Despite the complex nature of MHDC, the respondent group agreed on many of the features that comprise MHDC by the third round of the Delphi survey. A definition for MHDC was obtained, although leeway for local variation was intrinsic in the definition. Although the respondent group equated MHDC with level 2 care, some professionals were unaware of the ICS (2009) levels of care classification system, suggesting education is required. Raising awareness of this classification system may facilitate a shift of focus away from the conditions that characterise MHDC, to the need for organ support. Midwives working in the three OUs with the lowest annual birth rates had lower thresholds for requesting that women be transferred to ICU than their medical colleagues. Further research is required to assess the impact this may have on cohesive multidisciplinary team-working. Service providers in district general hospitals remote from tertiary referral centres are challenged with complex decisions when developing escalation of care guidelines, and must decide whether MHDC is provided equitably for all acutely ill women, or some/all are transferred to the ICU.

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# Risk factors and assessment tools for mother-infant bonding: a scoping review to assist future research

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## Abstract

**Background.** Mother-infant bonding refers to the early emotional connectedness between a mother and her infant. As there are clear benefits to strong mother-infant bonding and evidence of negative outcomes following impaired mother-infant bonding, knowledge of any risk or protective factors that affect mother-infant bonding is important. The administration of synthetic oxytocin to induce or augment labour has been shown to affect breastfeeding and maternal mood, however there appears to be no literature investigating the effects of synthetic oxytocin on mother-infant bonding. The aim of this scoping review was to identify factors that are known to influence or disrupt the mother-infant bond, and to examine how the mother-infant bond is assessed, to be able to assist future research investigating the effect of synthetic oxytocin administered during childbirth on mother-infant bonding.

**Methods.** A scoping review of published literature was guided by the framework of Arksey and O'Malley (2005). Eight electronic databases and reference lists were searched. Key words were used to guide the search. Inclusion criteria included any form of literature written in English pertaining to mother-infant bonding in an infant population, and articles where the overall theme related to one of the two research questions. Exclusion criteria included articles published before 2005, animal studies, and articles relating to mother-infant attachment. Information was collated into tables to summarise findings.

**Results.** A total of 2298 articles were identified, 38 of which were included in this review. Twenty-four articles were identified relating to risk factors for disrupted mother-infant bonding. Factors identified were grouped into five categories: mental health, lifestyle influences, thinking and attitudes, obstetric history, and infant factors. Fourteen articles were identified that related to tools to measure mother-infant bonding. Four tools were described, all of which employed self-reporting methods.

**Conclusion.** This review highlights the absence of literature investigating the effect of synthetic oxytocin to induce or augment labour, a common practice in Western countries, on mother-infant bonding. Secondly, all tools that measure mother-infant bonding utilise self-reporting methods, potentially introducing bias. While the literature is lacking in these two areas, there appears to be substantial knowledge on the risk factors that influence disrupted mother-infant bonding, such as postpartum depression and poor maternal social networks. Such factors will be important to consider when conducting future research into the effects of synthetic oxytocin on mother-infant bonding.

**Key words:** Mother-infant bonding, oxytocin, risk factors, bonding assessment tools, scoping review, evidence-based midwifery

## Introduction

Mother-infant bonding refers to the early emotional connectedness between a mother and her infant (Bicking Kinsey and Hupcey, 2013). The term is often linguistically confused with mother-infant attachment, a theory developed by Bowlby (1988), describing an infant or child's behaviour towards their mother, wherein the child selectively seeks out the mother in times of stress as a means of comfort, or exhibits emotion upon separation. While mother-infant bonding and mother-infant attachment are two distinct phenomena, the quality of mother-infant bonding is related to the subsequent quality of mother-infant, or mother-child attachment (Nolvi et al, 2016).

Mother-infant bonding is primed by the oxytocin system, as the hormone oxytocin plays a critical role in the bond formation between mother and infant (Galbally et al, 2011). Additionally, the hormone is involved in further maternal physiology including induction of labour (Campbell, 2005) and breastfeeding (Goodman, 2008). The importance of endogenous oxytocin in such behaviours has led to the use of

synthetic oxytocin in the induction and augmentation of labour.

Synthetic oxytocin, commonly Pitocin or Syntocinon, mimics endogenous oxytocin by initiating uterine contractions and stimulating prostaglandin release. As such it is the most common labour induction agent used worldwide (Alfirevic et al, 2009). In South Australia, approximately one quarter (26.2%) of the 20,448 women who birthed in 2014 received intravenous synthetic oxytocin to induce or augment labour (Scheil et al, 2016). In contrast, approximately 63% of women who gave birth in hospitals in the US from 2011 to 2012 received synthetic oxytocin (Declercq et al, 2013). While the use of synthetic oxytocin to induce or augment labour is common, the most suitable dose to enable a safe birth for mother and baby within a reasonable timeframe, is unknown; no universal evidence-based standard for its use exists (Budden et al, 2014) and it is therefore potentially over-utilised.

As stated, the endogenous oxytocin system is integral to motherhood in relation to breastfeeding (Riordan, 2005) and mother-infant bonding (Gordon et al, 2010). Thus, a disruption



to the natural oxytocin system, such as administering large doses of synthetic oxytocin during labour, may affect adaptation to motherhood. Researchers discussing the effects of synthetic oxytocin administration during labour have observed negative effects on various breastfeeding outcomes (Gu et al, 2016; Brimdyr et al, 2015; Gabriel et al, 2015) and correlated its use with increased maternal depressive, anxious and somatisation symptoms (Kroll-Desrosiers et al, 2017; Gu et al, 2016) and autism risk in males (Weisman et al, 2015). The underlying physiology of this is currently a research focus (Buisman-Pijlman et al, 2014), however, it is hypothesised that the high dose of synthetic oxytocin administered to induce or augment labour alters oxytocin receptor sensitivity in both mother and infant (Robinson et al, 2003).

While the effects of synthetic oxytocin to induce or augment labour have been examined on breastfeeding and other specific maternal and child outcomes (Gu et al, 2016; Weisman et al, 2015), it appears no research has been undertaken to investigate the impact on mother-infant bonding in human studies. In addition to the quality of mother-infant bonding relating to the subsequent quality of mother-child attachment, mother-infant bonding also facilitates improvement in maternal parenting skills, forms a basis for the child's sense of self, and may assist in prolonging breastfeeding (Bicking Kinsey and Hupcey, 2013). Furthermore, impaired mother-infant bonding correlates with a range of problems in infants and children; for example, externalising behaviours (Hairston et al, 2011). With clear benefits to strong mother-infant bonding and evidence of negative outcomes following impaired mother-infant bonding, knowledge of any effect synthetic oxytocin administration during childbirth has on mother-infant bonding is of high importance.

While the initial aim of this research was to scope the available literature on the effect of synthetic oxytocin administration during induction or augmentation of labour on mother-infant bonding, the review revealed that there is no literature investigating this association. Clearly there is a need for future research investigating any association between synthetic oxytocin administration and mother-infant bonding. Nevertheless, an understanding of other factors known to influence mother-infant bonding is vital to aid the control over confounding variables, and allow clearer associations to be identified. Likewise, having access to a valid and reliable tool to assess mother-infant bonding will allow future research to adequately measure the mother-infant bond and make reliable inferences onto the effect of synthetic oxytocin administration.

Therefore, the aim of this research was to scope the available literature to explore factors that may influence or disrupt the mother-infant bond, and to examine what tools are available to assess the mother-infant bond. It is anticipated that gaining knowledge in such areas will assist future research to investigate the effect of synthetic oxytocin administration to induce or augment labour on mother-infant bonding.

## Method

A scoping review, following the five-step framework of Arksey and O'Malley (2005), was employed using a systematic process to ensure rigour and transparency.

### Stage one: Identify the research question

The following research questions were used to guide the search for this scoping review:

- What are the known risk or protective factors for disrupted mother-infant bonding?
- What tools are available to assess mother-infant bonding?

### Stage two: Identify relevant studies

Eight electronic databases were searched: Medline, CINAHL, PubMed, Embase, Scopus, PsycINFO, Health and Psychosocial Instruments, and the Cochrane database. In addition, a hand search of the reference lists of identified articles was undertaken and Google Scholar was searched to identify any further relevant articles. The search terms were ('mother adj infant' OR 'maternal adj infant') AND ('bond' OR 'bonding' OR 'postpartum adj bonding' OR 'relations' OR 'relationship'), ('risk' OR 'risks' OR 'risk adj factor') AND ('disrupt\*' OR 'impact\*' OR 'poor\*'), ('instrument' OR 'tool').

The inclusion criteria were articles from 2005 onwards, written in English, where the overwhelming theme relates to either of the research questions, articles pertaining to mother-infant bonding, infant population (<12 months of age) across forms of literature.

The exclusion criteria were animal studies, non-infant (child, adolescent, or adult) population and articles pertaining to mother-infant attachment.

The search was conducted in October 2016. An academic librarian was consulted to assist the search process. Search techniques including use of medical subject headings (MeSH) and Boolean operators were employed to widen, narrow, or combine search results.

While mother-infant bonding was first described in the 1960s, its definition is continually being updated (Bicking Kinsey and Hupcey, 2013) and information on tools used to measure the phenomena are more abundant in the past decade. Therefore, only material from 2005 was included.

### Stage three: Study selection

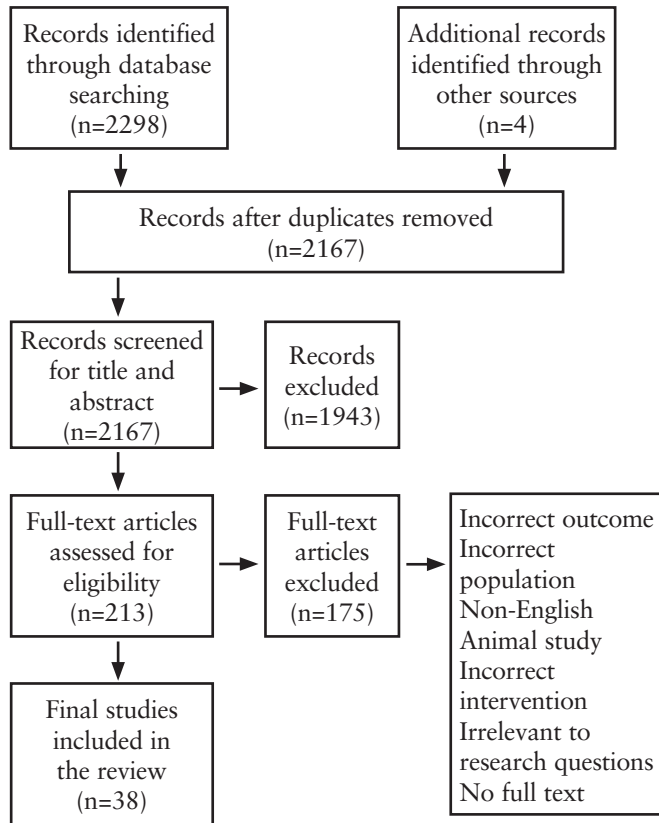
The paper selection process is outlined in Figure 1 (overleaf). Online reviewing service Covidence (Covidence systematic review software, Veritas Health Innovation) was utilised to conduct the selection process. The lead author conducted the initial screen and two second authors, in addition to the lead author, reviewed all papers in the full-text screen.

Some articles were initially considered, but were ultimately excluded as their overwhelming theme did not match either of the research questions. Such articles investigated how factors, including extremely low birthweight (Neri et al, 2015) and high risk, substance-dependent mothers (Savonlahti et al, 2005), influenced mother-infant interaction, however did not assess mother-infant bonding as a whole and were therefore excluded.

### Stage four: Charting the data

Charting of selected articles was undertaken by means of summarising the articles into tables. Summaries developed for each article related to author, year, study location, risk or

Figure 1. PRISMA flow diagram of scoping literature search and selection



protective factor for bonding or bonding tool identified, study design, study methods and sample size and a brief comment on the limitations and recommendations of the individual study.

#### Stage five: Collating, summarising and reporting results

The results presented in the charting stage were summarised and critically reviewed to determine the extent of existing knowledge. The literature was organised thematically according to risk or protective factors identified (research question one) or mother-infant bonding tools identified (research question two) and are presented in the results section. An in-depth discussion of the results of the review explores commonalities, limitations, and implications for future research.

## Results

A total of 2298 articles were identified. Of those, 38 studies were included in this review. The majority of the included studies were conducted in the UK (8), the US (6), Germany (5), Japan (5), Portugal (2), and New Zealand (2).

#### Risk and protective factors for mother-infant bonding: Research question one

Twenty-four studies identified in this scoping review cited factors that were risk or protective factors for disrupted mother-infant bonding. Risk factors were more often investigated, as only five studies provided results of protective factors for increased mother-infant bonding. Risk and protective factors identified are grouped into five categories:

mental health, lifestyle influences, thinking and attitudes, obstetric history, and infant factors.

#### Mental health

Maternal postpartum depression was frequently discussed, and 13 studies reported an association between increased severity of postpartum depression and disrupted mother-infant bonding (n=3845) (Hairston et al, 2016; Kerstis et al, 2016; Reck et al, 2016; Dubber et al, 2015; Ohoka et al, 2014; Sockol et al, 2014; Müller et al, 2013; Muzik et al, 2013; Örün et al, 2013; Seng et al, 2013; Kokubu et al, 2012; Edhborg et al, 2011; Figueiredo et al, 2009). Increased paternal depressive symptoms were also associated with impaired and inadequate mother-infant bonding (n=843) (Kerstis et al, 2016; Falceto et al, 2012). The Edinburgh Postnatal Depression Scale (EPDS) was the most common tool used to assess postnatal depression, however, the Beck Depression Inventory-II (BDI-II) and Postpartum Depression Screening Scale (PPDS) were also used. In addition, antenatal depression was reported to be associated with disrupted mother-infant bonding postpartum (n=537) (Rossen et al, 2016; Müller et al, 2013; Kokubu et al, 2012), and levels of antenatal depression predict levels of postpartum depression (Rossen et al, 2016).

Several studies reported an association between disrupted mother-infant bonding and increased levels of postpartum anxiety (n=985) (Dubber et al, 2015; Tietz et al, 2014; Edhborg et al, 2011; Gunning et al, 2011; Figueiredo and Costa, 2009). The common consensus was that increased postpartum anxiety negatively affects mother-infant bonding (Dubber et al, 2015; Tietz et al, 2014; Figueiredo and Costa 2009), however, one article reported increased levels of postpartum anxiety being associated with increased levels of mother-infant bonding (Edhborg et al, 2011). Maternal attachment anxiety was also described as a risk factor for disrupted mother-infant bonding (Gunning et al, 2011). Increased levels of anxiety in the antenatal period were also associated with disrupted mother-infant bonding (Dubber et al, 2015; Kokubu et al, 2012).

Post-traumatic stress disorder (PTSD) was described by two studies as a risk factor for poor mother-infant bonding (Muzik et al, 2013; Seng et al, 2013), as mothers diagnosed with PTSD were more likely to have disrupted mother-infant bonding (Muzik et al, 2013). Mothers who were self-reportedly suicidal were also more likely to have disrupted mother-infant bonding (Sockol et al, 2014). While self-reported suicidality was associated with disrupted mother-infant bonding, suicidality as assessed by a professional clinician was not (Sockol et al, 2014).

In addition to diagnosable mental health disorders, one study also assessed other high-risk mothers. High-risk mothers were reported to have lower bonding in the postpartum period, and included mothers with a history of abuse including physical, emotional, or sexual abuse or physical or emotional neglect (Muzik et al, 2013).

#### Lifestyle influences

Social influences pertaining to the mother were reported as factors that influenced mother-infant bonding. Maternal

education in years of secondary and tertiary education was explored in two studies. One study (Figueiredo et al, 2009) reported that higher maternal education was positively associated with mother-infant bonding, whereas the second study (Dubber et al, 2015) reported higher maternal education was negatively associated with mother-infant bonding. A mother's strong social network was an important factor in achieving higher mother-infant bonding (Falceto et al, 2012), including being married or in a strong, stable relationship (Kerstis et al, 2016; Figueiredo et al, 2009). Unemployed mothers reported lower mother-infant bonding than employed mothers, but it was not noted whether employed mothers were working at the time or on maternity leave (Figueiredo et al, 2009).

### Thinking and attitudes

Many studies described the way mothers think, and the attitudes felt towards the infant, both antenatally and postnatally, as factors influencing the strength of bonding. Antenatally, the influence of a mother's bond towards her fetus was assessed by several of the identified studies. A weaker mother-fetal bond during pregnancy was associated with a weaker mother-infant bond postpartum (Dubber et al, 2015; Edhborg et al, 2011; Figueiredo et al, 2009) and the level of antenatal bonding predicted levels of postnatal bonding (Rossen et al, 2016). A negative attitude of not having wanted or planned the pregnancy was also associated with disrupted bonding (Kokubu et al, 2012).

In the postpartum period, a mother's lack of emotional intelligence (Gunning et al, 2011), negative perception of difficult infant temperament (Hairston et al, 2016), and unproductive ruminative thinking (Müller et al, 2013) were all associated with increased incidence of bonding problems. Alternatively, attentional processing bias towards the infant positively influenced the relationship with the infant (Pearson et al, 2011).

### Obstetric history

Both a history of miscarriage and mode of delivery, vaginal versus caesarean section, were explored as potential risk factors for disrupted mother-infant bonding, however, they were found to have no effect (Noyman-Vekslar et al, 2015; Bicking Kinsey et al, 2014a). Various difficulties with the infant during and after childbirth were also described as affecting the mother-infant bond. Obstetric problems, neonatal problems and/or admission to a neonatal intensive care unit were all reported to lower mother-infant bonding (Figueiredo et al, 2009).

### Infant factors

Three studies described disrupted mother-infant bonding in participants who had given birth to a girl as compared to a boy (n=1176) (Örün et al, 2013; Edhborg et al, 2011; Figueiredo et al, 2009). In the postpartum period, infant sleep difficulties and bed-sharing with the infant were negatively associated with mother-infant bonding (Hairston et al, 2016; Mitchell et al, 2015). No use of a pacifier was also associated with poor bonding (Mitchell et al, 2015).

### Tools used to assess mother-infant bonding: Question two

A total of 14 studies identified in this scoping review cited tools to measure and assess mother-infant bonding. Tools identified included the Postpartum Bonding Questionnaire (PBQ), Mother-to-Infant Bonding Scale (MIBS), Mother and Baby Interaction Scale (MABISC), and Mother-Infant Bonding Questionnaire (MIBQ).

Of the tools identified, the self-report PBQ, in its many versions, was most frequently used in articles pertaining to both research questions. Brockington first developed the 25-item tool in 2001 and published its validation in 2006, which confirmed the value of the PBQ in detecting disruption in the mother-infant bond (Brockington et al, 2006). Many variations of the original PBQ were identified in the current study, including four articles translating the tool into another language, and reassessing its validity. The PBQ has proven validity when translated to, and assessed in Spanish (Garcia-Esteve et al, 2016), German (Reck et al, 2006), Chinese (Siu et al, 2010), and Japanese (Suetsugu et al, 2015) maternal populations. In translating the PBQ, a 16-item and 14-item tool were found more valid than the original 25-item tool in German and Japanese populations (Suetsugu et al, 2015; Reck et al, 2006). The validity of a shortened PBQ in an untranslated form was investigated, and found an abridged 10-item questionnaire was also a valid and useful alternative to the original 25-item version (Bicking Kinsey et al, 2014b). While the PBQ was reported to be a valid tool for assessing the mother-infant bond in many different populations, one study did express the PBQ be used with caution in a psychiatric patient sample as the risk of abuse subscale was not confirmed in this sample and therefore omitted (Wittkowski et al, 2010).

In addition to the PBQ, the current study identified three further tools used to measure mother-infant bonding. The self-report MIBS was first devised and validated by Taylor et al (2005). Two further studies examined the correlation between the MIBS and the PBQ, reporting acceptable reliability and validity of both tools, with the exception of one PBQ subscale (Wittkowski et al, 2007), and strong correlations between the tools (van Bussel et al, 2010; Wittkowski et al, 2007). Use of the MIBS was also explored in a neonatal unit of a maternity ward, concluding its satisfactory use in such a setting (Bienfait et al, 2011). Like the PBQ, the MIBS has been translated to and assessed in a Japanese maternal population (Yoshida et al, 2012), and demonstrated acceptable reliability and validity.

The self-reported MABISC was developed and examined by Hoivik et al (2013). The scale is 10 items long, shows satisfactory internal consistency and good stability. In addition, the MABISC shows strong correlations between the MABISC total score and two of the PBQ subscales.

The self-reported MIBQ was also identified as a tool to measure mother-infant bonding. This tool is shorter than others identified, with nine items and has confirmed reliability and validity in both pregnant and postpartum populations (Ohara et al, 2016).

### Discussion

This scoping review aimed to explore factors that may influence or disrupt the mother-infant bond, and to examine

how the mother-infant bond is assessed. It is anticipated that such knowledge will assist in future research investigating the effects of synthetic oxytocin administration during childbirth on mother-infant bonding, an area currently lacking in the literature.

The majority of research identified in this scoping review focused on factors that influence mother-infant bonding. While many key themes were identified, mental health was the most commonly occurring topic with increased rates of poor mental health being associated with disrupted mother-infant bonding. Interestingly, many recent articles investigating the relationship between mother-infant bonding and depression stated that previous research has scarcely examined the link (Ohoka et al, 2014). However, studies and their findings identified in this scoping review suggest otherwise. Many articles identified are merely re-examining the link between mother-infant bonding and depression in similar populations, with similar sample sizes and methods, when an association had already been established (Ohoka et al, 2014; Örün et al, 2013; Edhborg et al, 2011).

It is evident that bonding starts in the womb (Rossen et al, 2016; Dubber et al, 2015; Edhborg et al, 2011; Figueiredo et al, 2009). Four articles reported the influence of the mother-fetal bond during pregnancy on the mother-infant bond postpartum (Rossen et al, 2016; Dubber et al, 2015; Edhborg et al, 2011; Figueiredo et al, 2009). Depression or anxiety during pregnancy further influences the mother-infant bond in the postpartum period (Rossen et al, 2016; Dubber et al, 2015; Müller et al, 2013; Kokubu et al, 2012). Such research suggests that women with bonding, depression and anxiety issues during pregnancy must be prioritised as higher risk for disrupted mother-infant bonding postnatally. It may be prudent in such cases to explore or offer interventions to support mothers who are of known risk.

Three studies reported giving birth to a girl as a risk factor for disrupted mother-infant bonding (Örün et al, 2013; Edhborg et al, 2011; Figueiredo et al, 2009), an interesting finding from this scoping review. While one study commented that this finding may be due to societal preference for boys in the Bangladeshi population (Edhborg et al, 2011), the other two studies did not offer a possible explanation for this finding. These latter studies were conducted in Portuguese (Figueiredo et al, 2009) and Turkish (Örün et al, 2013) populations. While statistical data show that Turkey also has a high son bias (Social Institutions and Gender Index, 2014a), Portugal does not (Social Institutions and Gender Index, 2014b) and as such it is unclear why this study produced similar results. While not the focus of this scoping review, support for new mothers in these countries who give birth to a girl may be indicated.

This review also sought to identify tools which measure mother-infant bonding. The tool most commonly discussed was the PBQ. This tool was also the most commonly utilised in the methods of literature investigating risk factors for mother-infant bonding. While commonly used, many studies specified that use of the tool was a limitation as it relied solely on self-reported measures. However, the current review failed to identify a tool that did not employ

a self-report method to measure mother-infant bonding. Identifying or developing a tool which collects more objective observational data is of particular importance, as recent unpublished data has indicated that there is no association between self-report and observed parenting behaviour (Alves et al, 2014).

A previous literature review identified that there is still confusion regarding the use of terms 'mother-infant bonding' and 'mother-infant attachment' and this was also evident in this study (Bicking Kinsey and Hupcey, 2013). This also appears apparent from the current scoping review. Since mother-infant attachment is a theory well developed and discussed throughout the literature, it is concerning that the term is still being confused with, and used as a surrogate, for mother-infant bonding.

#### *Limitations*

While this scoping review followed the five-step framework outlined by Arksey and O'Malley (2005), there are still some limitations to the review conducted. Firstly, the search strategy included only English language literature. As many identified studies were undertaken in non-English speaking countries (Europe and Asia), it is possible that some relevant studies were missed. Secondly, as there still appears some confusion in terminology between mother-infant bonding and mother-infant attachment, it is possible that some relevant studies did not fit the inclusion criteria, since they incorrectly used the term mother-infant attachment when they were actually investigating bonding.

#### *Future research*

While the current review uncovered many factors that affect the mother-infant bond, no study was found that examined whether the administration of synthetic oxytocin affects maternal-infant bonding. There is clearly a need for research in this area. However, it will be important to consider other risk factors for mother-infant bonding as part of this research.

Secondly, while many tools to measure mother-infant bonding were identified, all of these were self-reported measures. Development of further tools to measure mother-infant bonding which employ a different method, for example an observational tool, may assist in generating a more objective measurement of mother-infant bonding, especially when used to complement existing self-report instruments.

#### **Conclusion**

This scoping review confirms that while there are many known factors that influence mother-infant bonding, little is known about the levels of synthetic oxytocin administered at the start of, or during the maintenance of labour and mother-infant bonding, despite the widespread use of this intervention. Existing tools to measure mother-infant bonding appear to be highly subjective, and further research is required to develop a more objective tool to assess mother-infant bonding, and to study the association between the administration of synthetic oxytocin administration and mother-infant bonding.



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# Complementary and alternative medicine in midwifery: a qualitative exploration of perceptions and utilisation of CAM among trained midwives in rural Ghana

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## Abstract

**Background.** Recently, complementary and alternative medicine (CAM) therapies have become popular in maternity care as many midwives either use or recommend them to women. Studies in Ghana, however, have conspicuously missed the standpoint of the persons working within maternity care, specifically midwives' perspectives concerning their perception and utilisation of such therapies.

**Rationale.** As midwives work closely with pregnant women, evaluating their perception and utilisation of CAM could be important in the planning of future integration policies.

**Aim and objectives.** To explore the perceptions and utilisation of CAM by trained midwives in rural Ghana, and to determine their attitudes toward the implementation of an intercultural healthcare policy in Ghana.

**Methods.** In-depth interviews, augmented by informal conversations, were conducted with all (n=25) trained midwives within the Birim South District in the Eastern Region of Ghana from 10 June to 30 July 2017. Data were thematically analysed and presented based on the posteriori inductive reduction approach.

**Ethics.** Institutional ethical approval was gained through the office of the Department of Geography and Rural Development, Kwame Nkrumah University of Science and Technology.

**Findings.** Trained midwives have positive perceptions about CAM, use CAM therapies frequently and recommend them to women. Herbal medicine, prayer and fasting were mostly practised. However, trained midwives have very limited knowledge about CAM. Findings reveal a positive attitude to, and support for, integrative medical care in Ghana by trained midwives.

**Implications.** The study findings suggest a perfect opportunity for the integration of CAM into the mainstream healthcare system in Ghana to address the shortfalls in knowledge. Evidence-based integration of traditional medical therapies into clinical practice will provide safer, faster and more effective healthcare for the underserved and resource-poor, particularly in the rural areas.

**Key words:** Complementary and alternative medicine, trained midwives, philosophical conformity, utilisation, rural Ghana, evidence-based midwifery

## Introduction

Globally, one research area which has attracted considerable attention among researchers and policy-makers in the last decade has been the prevalence of the use of complementary and alternative medicine (CAM) for health issues. Previous studies investigating the use of CAM by medical staff across different countries have reported varied results (Adib-Hajbagherya and Hoseinian, 2014). Midwives had been found to have interest in CAM and their place in maternity care (Kenyon, 2009) with existing evidence suggesting a high uptake of CAM among maternity care staff (Adams et al, 2011). For instance, evidence indicates that many maternity care staff regard CAM as an important addition to orthodox treatments (Mitchell et al, 2006; Gaffney and Smith, 2004; Beer and Ostermann, 2003), and that many midwives considered CAM therapies as safe, natural and coexistent with orthodox medicine (Wills and Forste, 2008; Mitchell and Williams, 2007; Allaire and Wells, 2000). Studies also

show that midwives perceive CAM therapies to assist in lessening complicated medical intervention, and as a means of empowering women and increasing their autonomy (Adams, 2006). These perceptions are generally in line with the core tenet of midwifery, as presented by many in the profession, that childbirth is a natural process and that there is a role for midwives in facilitating support and choice for women (Pairman et al, 2006).

Investigations into the reasons for the support and use of CAM therapies by midwives have been reported in previous studies (Hastings-Tolsma and Terada, 2009; Bourgeault and Hirschhorn, 2008; Gaffney and Smith, 2004). One important observation that has emerged to account for the growing support and use of CAM by midwives is the belief that the provision of such medicine is harmonious with midwifery philosophy (Bourgeault and Hirschhorn, 2008; Gaffney and Smith, 2004). In addition, Mitchell et al (2006) and Harding and Foureur (2009) asserted that CAM provides

additional options to avoid medical interventions, enhances midwifery care and professional autonomy and is part of supporting women's choice and autonomy (Harding and Foureur, 2009; Shuval and Gross, 2008). Thus, midwifery and CAM philosophy share a holistic world view and the notion that benefit can be gained from supporting, rather than overriding, natural physiological processes.

Trained midwives play an integral role in the healthcare system, providing a wide range of services to pregnant women and are at the forefront of informing pregnant women about their healthcare options. These options not only include conventional treatments, but also a range of CAM therapies that may support the health and wellbeing of pregnant women. Acknowledging this, evaluating midwives' perception and use of CAM could be important in the planning of future integration policies by informing the design of strategies and policies that bring together the separated cultural medicines and healthcare in Ghana. This might also serve as a useful reference for other settings where the tailoring of CAM into mainstream healthcare policies is planned. Thus, this qualitative study was conducted with the underpinning aim of exploring trained midwives' perception and utilisation of CAM.

#### **Literature review**

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CAM, according to Mariano (2007: 45), is 'a broad set of healthcare practices, therapies and modalities that address the whole person-body, mind, emotion, spirit and environment, and not just signs and symptoms. CAM can replace or may be used to complement conventional medical, surgical and pharmacological treatments'. Various aspects of CAM are rooted in the pre-historic and ancient systems of healing approaches and therapies, particularly found in Africa, Asia and America (Varghese et al, 2010). Recently, various CAM therapies have entered into maternity care globally. Although, several studies show that many health providers have accepted the use of CAM, Bourgeault and Hirschhorn (2008) found that midwives have a particularly strong interest in these therapies; nevertheless some researchers have argued against the suitability of CAM in midwifery practice (Johnston, 2008; Leap, 2000). Notwithstanding this, Bayles (2007) suggested that between 65% and 100% of midwives endorse the use of CAM by childbearing women, and it has been estimated that, between 78% and 96% of midwives refer clients to CAM practitioners (Harding and Foureur, 2009; Gaffney and Smith, 2004).

Arguably, the current increasing rate of use of CAM in a maternity setting may reflect a fundamental shift in healthcare system toward CAM (Braun and Cohen, 2007).

#### **Materials and methods**

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##### *Study design and context*

The authors conducted a qualitative study to identify trained midwives' perception and utilisation of CAM therapies in rural Ghana. This study adopted an interpretivist paradigm and subjectivist epistemology (Angen, 2000), which allows the original feelings, experiences and belief systems of participants to be valued. This approach requires maximum

interaction between the researchers and the interviewees to generate a meaningful collaborative effect (Guba and Lincoln, 1994). This research orientation was appropriate because it helped to avoid rigid structural paradigms, such as those in positivist research, and adopt more personal/flexible research structures, which are receptive to capturing meanings in human interaction and make sense of what is perceived as reality. With this, the interviewer and his/her informants are interdependent and mutually interactive and remain open to new knowledge throughout the study (Angen, 2000; Guba and Lincoln, 1994).

The study was conducted in the Birim South District within the Eastern Region, an area which is popularly known for healthcare and therapeutic pluralism where traditional and conventional medicines are used side by side; however, traditional medicine utilisation dominates. The district is located within a semi-deciduous forest landscape, which provides a wide variety of medicinal plant products for traditional and alternative healing purposes. Hence, the district and communities were considered ideal location for a study that sought to explore trained midwives' perceptions and utilisation of CAM therapies.

##### *Recruitment*

All trained midwives (n=25) in the district were recruited for the study. Trained midwives in this study encompassed staff who had undergone formal education and a training process with the core duty of assisting pregnant women during and after childbirth. The study participants were enlisted through purposive sampling techniques.

##### *Data generation tool and procedure*

An in-depth interview was the tool for data collection. In-depth interviews were used to generate data and an interview guide developed to ensure that similar themes and questions were covered in each discussion and interview. Participants in this study were approached in two ways. Initially, telephone conversations were used to seek their consent for participation; during these, a short briefing of the aim and objectives of the study was given. The second approach involved a face-to-face in-depth interview process with the participants. The interviews were systematically conducted between a participant and an interviewer at the place where the participant was recruited, mainly in the maternity centres. The researchers ensured that interviews were carried out in an enclosed space that was free from interference by any third party; they were conducted in English and, with consent, audio-recorded while field-notes were also taken. The interviews were supported with informal and personal conversations conducted by the first author who has an in-depth knowledge of medical geography, health policy and health development. Data credibility and rigour were enhanced through prolonged engagement with participants; each interview lasted approximately 60 minutes, and was supported by field observations and the participants' checks and validation. Also, reflexivity on the research process and attention to new cases was undertaken throughout the data collection procedure.



#### Data saturation

Recognising that failure to reach data saturation has a negative impact on the quality of the research conducted and the validity of the study results (Kerr et al, 2010; Bowen, 2008), a ‘saturation grid’ was constructed listing the major topics and research questions against interviews. This ensured that all bases were covered, as recommended (Brod et al, 2009). After conducting a series of interviews, the researchers noticed a point when there were very repetitive responses coming from interviewees. Thus, the general principles and concepts of no new data, no new themes, no new coding, and ability to replicate the study (Guest et al, 2006) were encountered. At this point, the researchers valued variation over quantity (Morse et al, 2014) and were confident that the categories were saturated, with the descriptions of these categories being sufficiently rich to allow for analysis to be undertaken.

#### Data analysis

Data for the study were analysed using the thematic approach (Ritchie and Spencer, 1994). This technique permitted movement between the empirical data and theoretical literature and afforded a contextual understanding of the data. This technique also allowed researchers to derive themes from the experiences the interviewer obtained from the interactions with the respondents, rather than any prior theoretical standpoint of the researchers as it adopted a posteriori inductive reduction approach. After the data collection, all recorded data were transcribed then read by the researchers independently. The transcripts were read and re-read for data familiarisation and to gain an in-depth understanding of the participants’ words. The authors initially conducted open coding of the data, followed by a selective coding. These generated a number of themes after careful multiple readings of the transcripts. A thematic analysis was conducted based on the data content. Themes were compared with the responses to identify common trends, similarities and contrasts. The thematic data analysis offered the opportunity to identify, analyse and report patterns within data and also helped to organise and describe the data in rich detail (Braun and Clark, 2006). The study results are presented under specific broad themes and key subjective views of the participants are presented using quotations.

#### Data verification

The authors conducted full data verification where all the transcribed and coded data were checked through proofreading against the original audios and documents to ensure accurate and quality data for the study. To enhance reliability, all the researchers analysed the data independently and then met together to agree the common themes identified.

#### Ethical considerations

As the dignity, safety and wellbeing of the interviewees were a matter of primary concern to the researchers, participation in the study was strictly voluntary, and no identifying or

**Table 1. Key themes influencing midwives’ perceptions about CAM**

S/N	Key themes
1	Demographic characteristics of the study participants
2	Midwives’ knowledge about CAM
3	Source of CAM information
4	Midwives’ perception about CAM
5	Prevalence and patterns of midwives’ CAM use
6	Recommendation and referral practices
7	Opinions on intercultural healthcare implementation
8	Challenges of intercultural healthcare implementation

sensitive information were recorded. Institutional ethical approval was gained through the office of the Department of Geography and Rural Development at the Kwame Nkrumah University of Science and Technology.

#### Results

The findings of the study reflect the perspectives of the trained midwives’ perception and utilisation of CAM in a rural Ghana context. The explanations identified from the interviews were organised and presented as eight interlinking subthemes. These themes are presented in Table 1.

##### Participants’ demographics

After interviewing 25 midwives, no new information was forthcoming and data saturation was reached. The greatest proportion of study participants were in the age group 35 to 45 years (n=15) and married (n=23). All our study participants had tertiary level schooling; 21 professed a Christian faith and four an Islamic one. Most of the participants were earning an average monthly income ranging between GHS 1000 and 2000 (\$227.27 to \$454.54). The majority of the participants (n=20) constituted Akans of various sects since the study prefecture is one of the homes of Akan ethnic group. Table 2 (overleaf) presents detailed characteristics of the study participants.

##### Midwives’ knowledge about CAM

Most of the participants did not have very much knowledge about CAM therapies, especially herbal medicine, and recognised this themselves. It was noted that none of the midwives had received any formal education and training on CAM therapies, although most of them expressed

**Table 2. Participants' characteristics**

Variable	Responses	N (25)
Age	Below 35	2
	35-45	15
	46-55	4
	Above 55	4
Education	Tertiary	25
Marital status	Married	23
	Divorced	1
	Widow	1
Household size	1 to 3	2
	4 to 6	17
	>6	6
Average monthly income (GH¢)	<1000	1
	1000 to 2000	22
	>2000	2
Religious affiliation	Christianity	21
	Islam	4
Ethnicity	Akan	20
	Other	5

the willingness and readiness to learn more about such treatments if given the opportunity:

*“Personally, I do not have in-depth knowledge about CAM therapies. I do not even know most of the therapies names, I only know the use of some of them. I wish I do because I use it and I should have some information about the therapies”* (midwife 1).

#### Source of CAM information

CAM therapies mostly became known to the participants through interaction with clients, co-workers, friends, and the mass media. It emerged that the majority of the study participants followed recommendations made by friends and others who had used a particular CAM therapy. In addition, the constant advertisement of CAM therapies on radio and television provided participants with CAM information. The following explanations were provided by some of the participants:

*“I got to know about the first CAM therapy I used through a co-worker who recommended it to me. I also think the mass media, especially, radio and television provide information on CAM therapies through advertisement”* (midwife 2).

*“It was a friend who suggested the CAM therapies I used. Also, some of the pregnant women who come for delivery give us information on some effective CAM therapies when we interact with them”* (midwife 5).

#### Midwives' perceptions about CAM

All the participants had positive perceptions toward CAM therapies. Previous good experiences with CAM therapies was the main mediating factor influencing perception toward CAM and they perceived CAM therapies to be effective and safe. As a result, the study found that participants held strong beliefs in the potency of CAM; key issues such as holistic treatment, availability and ‘naturalness’ were perceived to be associated with most CAM therapies, as the following comments highlight:

*“I have special respect for some CAM therapies I have used. In fact, I see some CAM therapies to be very effective and safe. For me, CAM therapies have minimum side effects compared to most of the conventional medicines. One thing is that, most forms of CAM therapies are always available and can be found with ease when needed”* (midwife 5).

*“I trust in the effectiveness and safety of most CAM therapies. So I have good reservations about CAM. CAM heals ‘all-round’ without targeting one particular disease in the body. One therapy can heal about eight different diseases”* (midwife 7).

#### Prevalence and patterns of CAM utilisation

A high prevalence of the use of CAM therapies by the participants was noted in the study as all reported the use of at least one form of therapy in dealing with their health problems in the last six months preceding the interviews. The major forms of CAM therapies utilised by the participants were natural herbal plants, medicines and faith healing modalities, specifically prayer and fasting. Most of the participants used biologically-based products, specifically herbs (n=21), with the remaining four favouring prayer-based interventions. It was noted that participants use CAM therapies in shorter intervals for curative and preventive purposes. Various reasons were reported to explain the high prevalence and pattern of CAM use. The principal factors were: whole- person treatment and efficacy, personal philosophies and perceived cause/source of diseases, unpleasant experiences of using formal healthcare and orthodox medicines, and easy access and availability. Participants particularly viewed CAM therapies, especially herbs, prayer and fasting modalities, as holistic approaches to healing where whole-person treatment is conducted, as stated below:

*“One advantage of CAM, which is pushing more people to use it, is that it cures holistically with much safety. It does not target a particular health problem. For example, when one is using a concoction which is a mixture of several herbs serving different purposes, it heals the whole being not one particular disease in the body. Also, one does not pray to God to cure him from only one particular disease but prays to cure all diseases present and future or unforeseen illness as well”* (midwife 9).

*“Herbs are natural, safe and effective. Prayer and fasting are also good for healing certain kind of diseases. One thing is all these CAM modalities are not scarce, for example herbs are readily available provided you know what you want, while prayer and fasting are free for all”* (midwife 11).

### *Recommendation and referral practices*

Most of the participants had either referred patients to CAM practitioners in the course of working or recommended one form of CAM therapy for patients, but these recommendations and referrals were irregular and mostly took place secretly, outside the healthcare environment. The main CAM therapies recommended by participants were herbal plant medicines and prayer.

Likewise, the majority of the participants (n=22) referred patients to herbal medicine use during pregnancy or after pregnancy. The remaining three participants mentioned that they had suggested patients use prayer-based interventions for pregnancy-related issues. It emerged that midwives' expectation of meeting community demands, especially during childbirth was the main reason for the decision to occasionally refer clients to CAM. The participants believed that conventional medicines are not always effective in treating all kinds of complications. As a result, certain pregnancy-related complications require traditional medicines for treatment:

*"I see traditional medicines as alternative to the conventional one. I have discussed and recommended CAM to my clients as well. From my own experience, not all complications could be cured with conventional medicines. I vividly remember one instance where I recommended a certain conventional drug to a client who applied it for some period without any significant improvement in her condition. I heard about a certain herbal drug on radio. I read about it and found that it could help her so I recommended it for her and within some few days she was okay. So, I believe that if the conventional medicine fails, traditional medicine can be effective, that is why we occasionally recommend"* (midwife 12).

*"For recommendation and referral, we do it occasionally. We normally do it when conventional medicines prove to be failing and clients expressed strong interest in CAM. Some CAM therapies are really good for birth complications. Normally, recommendations take place secretly and outside the workplace"* (midwife 15).

### *Opinions on intercultural healthcare implementation*

The study participants welcomed the discussion on intercultural healthcare implementation in Ghana, with all the participants expressing maximum interest in the policy and support for its implementation. They also acknowledged that the policy would allow pregnant women to receive prenatal and postnatal traditional medical care from a primary care environment and the health facilities. They maintained that this would encourage pregnant women to give birth in hospital since they are likely to find traditional midwives at formal hospital facilities. They perceived the childbearing process as a shared responsibility between pregnant women and midwives, and that implementing an intercultural healthcare policy would empower pregnant women to have some sort of control in childbirth:

*"To me, the integration would be a good news since it can encourage more pregnant women to give birth at the hospital. So I wholeheartedly support it and hoping to see it*

*done – it will help all of us"* (midwife 15).

*"I am looking forward to seeing intercultural healthcare implementation in Ghana. I think efforts have been put in place long ago but still need to be done to ensure a successful implementation. When it happens like that, pregnant women would feel at home when they come to the hospital, because they will have alternative medicines. These medicines will be culture-sensitive. It is a very good idea, and we all support it"* (midwife 4).

### *Challenges of intercultural healthcare implementation*

Some intercultural healthcare implementation challenges were reported by the participants. Poor implementation mechanisms, weak institutional support, and lack of political will were highlighted as key institutional setbacks for actualising an intercultural healthcare implementation. Also, one critical issue that was trumpeted throughout the discussions was the argument that most CAM therapies are built on tradition and uncertainty and cannot be explained scientifically:

*"For me, I think herbal medicine can be easily practised and dispensed at hospital places. My worry is about the spiritual aspects of most traditional medicines. Some herbal medicines may have certain belief connotations before they can work effectively and this cannot work at any scientific environment like hospitals"* (midwife 6).

*"I think the respective institutions and sectors responsible for this agenda are not committed and have not showed enough political will towards this integration. I actually expect the government to do more in this regard by showing more political will and commitment to ensure that appropriate policies and mechanisms are in place for a successful integration"* (midwife 13).

### **Discussion**

The present study utilised a qualitative approach to explore trained midwives' perception and utilisation of CAM therapies in rural Ghana. Furthermore, midwives' knowledge and source of CAM information, recommendation and referral practices and opinions on intercultural healthcare implementation have been explored. Positive perceptions toward CAM were demonstrated by midwives in rural Ghana. However, their perceptions reflect their personal experiences as well as their levels of individual exposure to CAM therapies in the past and present.

The study found that clients, co-workers, friends and the mass media are the significant sources of knowledge about the therapies, a finding which concurs with other previous studies (Gyasi et al, 2017a; Holroyd et al, 2008; McFarlin et al, 1999). The propagation of media outlets in the form of diverse radio waves, television telecasts and widespread informal information points have emerged and contributed immensely to the spread of information about CAM therapies through announcements and advertising modules. This finding contradicts other previous studies, which reported that midwives learnt about CAM therapies through private studies, attending workshops and seminars (Harding and Foureur, 2009; Hastings-Tolsma and Terada, 2009).



Interestingly, this study's finding adds a new dimension to existing evidence by identifying a dynamic whereby trained midwives received information and knowledge about CAM therapies from clients.

Contemporary documented evidence indicates that CAM use is common among midwives and has penetrated into maternity care (Hall et al, 2012; Adams et al, 2011; Samuels et al, 2010). The present study demonstrated a very high prevalence of the use of CAM therapies with the majority using herbal medicines and faith healing modalities, specifically prayer and fasting. This high prevalence and patterns of CAM therapy use by midwives have been previously reported by studies elsewhere in Israel (Samuels et al, 2010), the US (McCabe, 2005) and Australia (Davis, 1984).

The generally perceived efficacy and safety vis-à-vis the dissatisfaction felt by the conventional medicine consumers invariably push more people toward using herbs and prayer-based interventions. The belief that conventional medicines are not effective in dealing with the identified 'tropical' medical episodes, as well as the perceived side effects, sway people into CAM use. The study participants complained that most conventional medicines could generate adverse reactions in the form of side effects, which threaten the safety of the users. These ideas mirror the findings of other studies in both economically developed (Williams et al, 2011) and developing nations (McLaughlin et al, 2012). Among many psychosocial variables, the findings revealed the holistic nature of CAM approach as unique. Midwives' regular use of CAM is associated with the beliefs in holism. Our findings suggest that holism remains one major concept that separates the traditional system of medicine and its conventional counterpart.

The ability of CAM to treat not just an aspect of the being or disease specifics but a whole being, taking into account the importance of body, mind, and spirit in health, is critical. Unlike scientific medicine, CAM conveniently deals with physical and spiritual and or emotional problems toward a 'whole health' restoration (Gyasi et al, 2016; Gaffney and Smith, 2004).

In the evaluation of healthcare behaviours, personal philosophies and beliefs are critical agents that pull people into CAM use. The belief that the use of CAM therapies are in line with midwifery philosophy influences midwives' decision to use CAM. Hall et al (2012) argued that midwives' use of CAM therapies may be as a result of philosophical conformity. Adams (2006) suggested that the use of CAM by both midwives and clients empower them while increasing their sense of autonomy. It may be that midwives perceive the childbearing process as a shared responsibility between women and midwives, hence using CAM allowed pregnant women to have some sort of control over the process. Thus, midwives might be attracted to CAM use because they hold beliefs that are congruent with CAM practices.

In line with other studies, for example Gyasi et al (2011) and Warriner (2007), the authors argue that certain aspects of traditional medicines, specifically herbal medicines and

prayer-based interventions, are more readily available and accessible to the people than orthodox care. In Ghana, specifically rural settings, many herbal plants medicine and faith healing centres are widespread and serve as alternative treatments for midwives and the general population.

Significantly, this study provides evidence to indicate that midwives were enthusiastic supporters of CAM use. Many of the midwives reported to have either recommended or referred patients for CAM therapy. In alignment with Hall et al (2012), CAM offers alternative options to medical interventions and their provision supports women's autonomy and enhances the professional role. In view of this, the acceptance of CAM by midwives provides them room to align with community expectations and respond to the demand by childbearing women (Shuval and Gross, 2008; Adams, 2006). The present study finding that CAM therapies were recommended by midwives appeared to be in agreement with some research (Bayles, 2007), while contradicting other studies (Hall et al, 2012; Wiebelitz et al, 2009; Allaire and Wells, 2000). This is because the popularity of specific therapies endorsed and recommended by midwives varies by country, and may be affected by local healthcare cultures, conditions and demands. However, Adams et al (2011) cautioned that divergence in practice/referral for complementary medicine across healthcare systems needs to be considered alongside the wider social and cultural contexts of healthcare provision and policy, and the training available to providers in different countries.

The present study demonstrated that midwives have limited knowledge about CAM therapies, which concurs with copious previous studies (Hall et al, 2012; Adams et al, 2011; Samuels et al, 2010; Wiebelitz et al, 2009). Midwives recommending and referring women to CAM use have received no formal education and training on CAM therapies. This act is risky to the health of both midwives who use CAM therapies and clients to whom they recommend CAM therapies. A midwife recommending CAM therapy based on mere perceived efficacy without having in-depth knowledge about the therapy may not know the principles and concepts of the recommended or referred therapy. The authors believe that this lack of knowledge about CAM therapies by most midwives has the tendency of limiting their recommendation and referral practices. Similar opinion was shared by McFarlin et al (1999) who argued that lack of knowledge about the safety of the CAM therapies has stopped most midwives from either practising, recommending or referring alternative medicines. However, Adams (2006) and Shuval and Gross (2008) maintained that such recommendations and referrals have the advantage of providing midwives with emerging perspectives on the therapeutic relationship and range of treatment options packaged in patient-centred terms.

One positive finding was that the participants expressed a strong willingness and readiness to learn more about CAM therapies. Evidence from previous studies suggested that many care providers, including midwives, indicated gaining knowledge about CAM as an important and pressing



professional issue and supported the idea that CAM teaching should be integrated into conventional medical and healthcare curricula (Einarson et al, 2000). This finding suggests a unique opportunity for the implementation of intercultural healthcare in Ghana. In recent years, there have been calls for the integration of CAM therapies into the mainstream national healthcare in Ghana through a policy which includes education and training about all aspects of complementary therapies, with the introduction of relevant courses into midwifery and nursing education institutions (Dayhew et al, 2009). Nevertheless, previous studies on intercultural healthcare in Ghana reveal that despite previous efforts, any significant incorporation of the traditional systems of medicine into mainstream healthcare is far from a reality (Gyasi et al, 2017b).

Chung et al (2011) noted that the integration of CAM with mainstream healthcare systems is not a recent phenomenon, particularly in East Asian healthcare systems. For example, in countries such as China (Hesketh and Zhu, 1997), Taiwan (Chi et al, 1996), Vietnam (Ladinsky, 1987) and South Korea (Cho, 2000), a CAM curriculum is often an integral part of the higher medical education system, and referrals between the two systems is common (Dixon, 2008). In these countries and regions, established medical pluralism and integrated policy have formed a unique healthcare context, which has blurred the boundary between Western medicine and CAM. With such successful integrations elsewhere, Ghana could integrate CAM into the mainstream healthcare system if there

were conscious policy decisions coupled with a strong political commitment. This would provide the opportunity for mutual knowledge acquisition and sharing among practitioners while encouraging maximum healthcare utility. Moreover, such integration would help promote open referrals and recommendations of CAM by midwives as opposed to the secret and unauthorised referral and recommendation practices observed by the present study. Gyasi et al (2017b) advise that effective intercultural implementation should start from the grass-roots level, involving training of physicians and practitioners to ensure mutual understanding and direct communication between them. The traditional and medical practitioners should not be seen battling for supremacy as each of the two healthcare systems has its own value; instead, they could mutually benefit from each other's strength.

The authors would like to acknowledge the sample was purposeful and small and the findings are context bound.

### Conclusion

This small study demonstrated that midwives have positive perceptions toward CAM, they use CAM frequently and they recommend CAM to mothers. Three main CAM therapies were reported: herbal medicine, prayer and fasting. Midwives believed in the integration of CAM and conventional medicines, considering this as an ideal option. However, formal training in CAM was needed and there appears to be a unique opportunity for the implementation of intercultural healthcare in Ghana.

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## Information for authors

*Evidence Based Midwifery* is published quarterly and aims to promote the dissemination, implementation and evaluation of midwifery evidence at local, national and international levels. Papers on qualitative research, quantitative research, philosophical research, action research, systematic reviews and meta-analyses of qualitative or quantitative data are welcome. Papers of no longer than 5000 words in length, including references, should be sent to: [rob@midwives.co.uk](mailto:rob@midwives.co.uk) in MS Word, and receipt will be acknowledged. Suitable papers are subject to double-blinded peer review of academic rigour, quality and relevance. Subject area and/or methodology experts provide structured critical reviews that are forwarded to authors with editorial comments. Expert opinion on matters such as statistical accuracy, professional relevance or legal ramifications may also be sought. Major changes are agreed with authors, but editors reserve the right to make modifications in accordance with house style and demands for space and layout. Authors should refer to further guidance (RCM, 2007; Sinclair and Ratnaik, 2007). Authorship must be attributed fully and fairly, along with funding sources, commercial affiliations and due acknowledgements. Papers that are not original or that have been submitted elsewhere cannot be considered. Authors transfer copyright of their paper to the RCM, effective on acceptance for publication and covering exclusive and unlimited rights to reproduce and distribute it in any form. Papers should be preceded by a structured abstract and key words. Figures and tables must be cited in the text, and authors must obtain approval for and credit reproduction or modification of others' material. Artwork on paper is submitted at the owner's risk and the publisher accepts no liability for loss or damage while in possession of the material. All work referred to in the manuscript should be fully cited using the Harvard system of referencing. All sources must be published or publicly accessible.

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## News and resources

### Mary Seacole Awards open

Applications are due to open for individual midwives, nurses and health visitors in England to participate in the prestigious Mary Seacole Awards. The awards – funded by Health Education England and awarded in association with the RCM, RCN, Unison and Unite – provide the opportunity to undertake a specific healthcare project that benefits and improves the health outcomes of people from black and minority ethnic communities and contributes to personal development. At the annual awards ceremony on 23 October 2017, five new awardees were announced. Applications for next year's awards were due to open this December. For more information and to apply, visit [rcm.org.uk/mary-seacole-awards-201718](http://rcm.org.uk/mary-seacole-awards-201718)

### RCM awards shortlist announced

The shortlist for the RCM Annual Midwifery Awards has been announced. They recognise the best new evidence-based practice projects and the best in team-working. The awards aim to discover outstanding individuals making a difference for women, families and the newborn. They promote best practice and world-class midwifery standards, showcase practice innovations and ground-breaking initiatives and recognise individual and team excellence. There are 12 awards in total. Winners will be announced at a ceremony at The Brewery in London on 6 March. To see the shortlist and for more information about the awards, visit [rcmawards.com/2018-shortlist](http://rcmawards.com/2018-shortlist)

### Wellbeing of Women research grants

Wellbeing of Women is inviting applications for projects in basic science, clinical or translational research, in the areas of pregnancy, birth and the postpartum period. Also, general wellbeing surrounding women's health issues, such as menopause, incontinence, sexual health, mental health, menstrual disorder and endometriosis and gynaecological cancers. These awards are intended to support established, independent researchers, the work must be carried out in the UK or Ireland and the upper funding limit is £200,000. For more information, visit [wellbeingofwomen.org.uk](http://wellbeingofwomen.org.uk)

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