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EVIDENCE BASED MIDWIFERY



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I spy with my little electronic eye your digital profile: living with the discoverability factor

Key words: Social media, Twitter, Facebook, digital footprint, spy software, evidence-based midwifery

Information about people, colleagues, friends and enemies is powerful and the more we believe we know, the greater is our personal challenge to remain ethical and just in our use of that information.

As midwives we adhere to our code of conduct (NMC, 2015) and we are duty bound to confidential use of the personal data we acquire from those women we care for in childbirth. However, how many of us have taken time to think about the magnitude of data that is available about each one of us on the internet? If we so wished, we could purchase spy software of one type or another and retrieve every electronic piece of data that relates to us or to others for a small fee. Recently, I completed a simple online search for spy software and was amazed to see how much information I could acquire about a person without them ever knowing I had opened their emails, accessed their texts and blogs as well as obtaining a profile of their social media activities. Wow, what a shock! Money opens our electronic data fields. This is a salutary reminder for all of us.

Many academics use Research Gate, Academia.edu or LinkedIn to promote their publication profile. The use of Alta metrics for research purposes is acceptable and most academics preparing for REF 2021 will be using their Twitter and Facebook accounts to enhance their outreach and increase their research dissemination profile. However, that is very different to being profiled by a software company espousing expertise in finding our darkest secrets! You may very well be thinking, just now, so what exactly is the problem?

Let me share some thoughts about this with you. When I was a child I lived in a small world where I just knew that only God could see everything I ever did and hear my most secret thoughts. Funnily enough, I was not fearful with this knowledge, as my mother told me that this was the most important factor for living a good life and going to heaven... such childish simplicity. My mother's words echoed through my early years: 'Always remember God is watching and listening and you will do no harm; only good.' How true and wise were these words, but how quickly I forgot about them as the stuff of everyday life consumed my space and the demands of work and family life took precedence. There was little time to think and none at all to remember the words of wisdom.

Many of you will remember the story of Professor Penny Proffit from Edinburgh University who resigned her post as chair of nursing studies in 1992 when she was exposed for claiming to have a PhD. The exposure came about through mostly hand-searching of records. Today, we have the electronic eye of the Retraction Watch group, which has now set up a database of over 16,000 retractions of published papers.

The digital mark or footprint as it is often referred to is a very powerful method of portraying the lifeworld of a person and can be used in the courtroom as well as the social media platform. How many of you Google yourselves and how many of you have paid for the hidden profile? As health professionals we need to remember that the NMC and the public are all watching us with their different lenses. The boundaries between our performance in public and private are being blurred by the online life we now lead with live-streaming and Facetime becoming more and more popular and, as such, becoming another invisible technology that we accept and file away in the recesses of our minds.

Last week I took part in three webinars. During the first one, I completely forgot that every word I said could be heard and re-heard and could not be erased with a quick rub out nor could it be struck through with a pen and a quick signature added. I did not state anything libelous, but I did share personal details that I did not feel comfortable about when I remembered they were 100% accessible and traceable to me. This very sobering thought has inspired me to write this reflection as a reminder to all of you about the new paths we are walking in the 21st century. These are electronic fields with gateways to pleasant – and perhaps not so pleasant – outcomes and ones that we need to take cognisance of right now and be better prepared as midwives, to walk in safely.

The world of work is a very different place now for our young midwives and it is very easy for them to check out any woman who comes into their care by doing a quick search online for their profile. Is that appropriate, I ask you? I know it has happened and I ask you is that a natural part of our new virtual reality? Where do we draw our boundaries now? What do we do if we find unsavoury or child safeguarding issues in the profiles of some of the parents when we are traversing or surfing through our routine social media fields? Of course, every woman and their partner who meets us in the clinic or in their home can easily search for us online and meet our virtual self.

I know for certain, the wisdom of my mother remains the key to retaining sanctity and safety in my mind, body and soul, as now more than ever I see the evidence for supporting that statement about everything being discoverable. More than God is watching us now.

Reference

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Professor Marlene Sinclair, editor

PhD, MEd, PGDip/Education, BSc, RM.
Professor of midwifery research and head of the Centre for Maternal, Fetal and Infant Research at Ulster University, Northern Ireland

An ethnographic exploration of midwives accessing and using information for practice in the labour ward

*Elinor Jenkins*¹ BSc, RM, DClinP. *Elizabeth R Cluett*² PhD, MSc, RM, RGN, PGCEA, PFHEA.

1. Midwife/midwifery researcher, Isle of Wight NHS Trust Maternity Unit, St Mary's Hospital, Newport, Isle of Wight PO30 5TG England.

Email: elinor.jenkins@iow.nhs.uk

2. Lead midwife for education and director of practice projects, Professional Practice in Health Sciences, Nightingale Building (67), University of Southampton, Highfield Campus, Southampton SO17 1BJ England. Email: e.cluett@soton.ac.uk

Abstract

Background. As maternity care becomes more complex, midwives need to use information at the point of care when working on the labour ward. Understanding how midwives use information could support improving the labour ward information environment.

Aim. To explore how midwives in the high-risk environment of the labour ward access and use information for practice.

Design. This is a qualitative study using the principles of ethnography.

Methods. A total of 21 purposively sampled midwives were observed providing care to women with complex needs in the labour ward of an English tertiary referral hospital with a delivery rate of 6000+ births per annum. Ten of the observed midwives were purposively sampled for interview. Data were collected and analysed between October 2011 and November 2014. Ethical approval for the study was obtained from the national research ethics committee.

Findings. Thematic analysis using open and focused coding revealed that midwives identified their information needs when they recognised limitations in their knowledge. Information sources used by midwives were usually verbal or documented and included maternity notes, guidelines, equipment, computers, colleagues, women and the environment. Midwives sought woman-specific, objective and organisational information. Facilitators and inhibitors were related to the search time, usability, versatility and approachability of the source. Verbal information was transmitted through a network of women and colleagues via midwives either one-to-one or as a collaboration.

Conclusion. Information behaviour was used constantly by midwives in the labour ward. Accessibility, usability and approachability were key to midwives using an information source. Spontaneously convened multidisciplinary team collaborations may not function as well as formal collaborations.

Implications. The quality of midwifery clinical care could be improved by enhancing the woman's contribution to verbal information/collaborations and increasing the accessibility and usability of information sources.

Funding. The study was funded by NHS Education South Central and latterly Higher Education England, Hampshire and Isle of Wight Comprehensive Local Research Network, Florence Nightingale Foundation, RCM Ruth Davies Research Bursary and Portsmouth Hospitals NHS Trust.

Key words: Information needs, information source, information type, information seeking, point of care, midwife, labour ward, ethnography, evidence-based midwifery

Introduction

Better births (Cumberledge, 2016) and the RCM (2017) acknowledge the rising complexity of birth. Social trends for women having children in their 30s and 40s means that they may have developed more medical conditions that need to be managed during pregnancy (RCM, 2017; National Audit Office (NAO), 2013). The 20% rise in obesity is also impacting on birth complexity (RCM, 2017). The publication *Safer maternity care* (Department of Health (DH), 2016) also recognises this increasing complexity. As an indicator of the increased severity of the types of conditions, data from Birmingham Women's Hospital recorded 2.67% of admissions to high-dependency care in 1984 rising to 5.01% in 2003 (Saravanakumar et al, 2008). An audit by the Royal College of Anaesthetists (RCA) stated that 72% of women admitted to intensive care units are admitted with obstetric reasons (RCA, 2011). NHS Digital (2018) reports that over 42% of births have an intervention during delivery and up to 80% of women have trauma post birth.

Midwives have autonomous clinical responsibility for women in the labour ward environment and are required by their professional registration to use the best available

evidence (NMC, 2015). This is always in conjunction with the woman (NMC, 2015) and frequently in combination with obstetric colleagues. In view of this increasing complexity, this study sought to explore the midwives' information environment in the current clinical context of a busy labour ward.

Background

Care in the labour ward is usually one midwife to one woman, time limited, acute and occasionally emergency. If midwives do not know or recall details about conditions at the point of care, they need to be able to locate information that contributes to the clinical picture in order to provide the best care. This activity is termed 'information behaviour' (IB). IB is an academic discipline developed and influenced by sociology (Hersberger, 2005), information technology (IT) (Wilson, 2000), information science (Davies and Harrison, 2007) and library science (McKnight, 2006). It relates to all behaviour connected with information seeking, searching, channels and sources (Kumaran and Chipanshi, 2015; Wilson, 2000). In healthcare, IB has been studied to guide and promote effective database searching techniques

(McKnight, 2006), library searching (McKnight, 2007) and decision-making (Del Fiol et al, 2014; Kannampallil et al, 2014) and point-of-care information needs (Ebenezer, 2015).

There is minimal research evidence of midwives' IB in the clinical environment of the labour ward. Studies of clinicians' IB in acute healthcare environments such as intensive care, showed that nurses and doctors use their personal knowledge, guidelines, databases, journals, colleagues and the patient as information sources (Cranley et al, 2009; Bertulis and Cheeseborough, 2008; Spenceley et al, 2008), but these were not consistent throughout the studies. Clarification of sources and types of healthcare information for midwives may enable consistency in further midwifery research and improvement to the quality of sources.

Recognised information need, as a function of IB, is an acknowledged/identified gap in knowledge or inability to predict outcomes and precedes information seeking (Cranley et al, 2009; Thompson et al, 2004). The search is critical to IB and is related to the accessibility and usability of the information source (Ebenezer, 2015). Difficulties with the search may render some information sources more inhibited than others regardless of overall value. The role of these inhibitors in IB may be a key to establishing effective IB of midwives.

Research from related clinical professions suggests that searching for information and accessibility is linked to the source and sources are integral to the environment (Bonner and Lloyd, 2011; Bertulis, 2008; Spenceley et al, 2008; McKnight, 2006; Sharit et al, 2006; Estabrooks et al, 2005).

Greater understanding of midwives' IB may facilitate the production of appropriate information in a suitable format thus improving standards of care.

Aim

The aim of this study was to explore the IB of midwives by looking at how they recognise their information needs, identifying the sources and types of information that they use and ascertaining the facilitators and inhibitors to midwives accessing information.

Literature search

A detailed literature search using Amed, CINAHL, EMBASE, Medline and the Cochrane databases was undertaken with the key words midwi*, nurs*, information behaviour, information need, information seek*, information, information access, information use, knowledge management, evidence-based practice and decision-making. The search limits were research or systematic review articles from 2004 to 2011 and hospital-based clinicians (not students) with diverse (rather than a single) information sources or focus. This was in view of changing IT and recognition of different information source availability in the hospital environment.

Design

The principles of ethnography (Hammersley and Atkinson, 1983) shaped by symbolic interactionism (Blumer, 1969) were used in this study to enable the clinical context and social environment of the labour ward to be revealed. Midwives in

the labour ward are a social group. They share a system of meanings and develop the organisational and cultural rules of IB through social interaction (Chatman, 1996; Spradley, 1980; Blumer, 1969). Observation and interview data collection methods associated with ethnography facilitated the exploration of the IB of midwives using both the emic and etic perspectives.

Participants

A total of 21 purposively sampled midwives were consented for observation in the labour ward. Their experience ranged from one to 20 years (see Table 1 overleaf). Each midwife was given a pseudonym at recruitment which was used throughout the study.

The inclusion criteria was registered midwives providing care to a woman with complex needs (see Table 1). Exclusion criteria was either the midwife or woman not wishing to take part. No attempt was made to recruit midwife participants by age or experience. A sample size of 21 was stated at the outset as a requirement of the research ethics committee's ethical approval and to stay within the time and funding limits of the doctoral study.

Consent to approach midwives was gained by the midwifery researcher from the labour ward coordinator. The labour ward whiteboard was screened by the midwifery researcher for midwives providing care to women with complex needs. Approach was then made directly to the midwife by the researcher knocking on the door of the labour room and giving a short explanation of the study and written information about the study to the midwife and the woman. With the researcher not present, midwives were asked to pass on the written information to the woman in the room while she was receiving care. Informed verbal consent was received by the midwife from the woman in her care for observation at that time. Then the researcher received written informed consent from the midwife for both observation at that time and possible interview at a later date. Only one midwife declined participation.

Up to three weeks later, midwives were contacted for their willingness to take part in an interview. Three to 10 weeks later, 10 of the observed midwives were interviewed.

Data collection

Data were collected in the labour ward of a moderate-sized tertiary referral maternity unit (6000+ births per annum) in a UK city with a population of 250,000. Further setting detail may compromise the confidentiality of study participants.

A single midwife researcher observed midwives providing care to women whose needs were complex and interviewed midwives about how they access information in the labour ward. Data were collected using observation at varying times on 10 separate days between October and November 2011 and using interviews between November 2011 and February 2012.

Observation

Each midwife was observed providing care for up to three hours at a time, dependent on the duration of care (see Table 1).

Table 1. Chronological details of midwives, their profile and the women for whom they were providing care (all names are pseudonyms allocated by the researcher)

Midwife episode	Midwife	Woman	Woman's condition determining high-risk status	Obs mins	Int mins
1	Anna	Alice	Vaginal birth after caesarean (VBAC), in labour	90	Not interviewed (NI)
2	Beatrice	Betty	Augmentation of preterm labour after prelabour rupture of membranes at <35/40	180	56
3	Cassie	Betty	Augmentation of preterm labour after prelabour rupture of membranes at <35/40	20	NI
4	Diana	Daisy	Induction of labour	60	39
5	Eugenie	Ella	Syntocinon induction of labour, significant meconium, low platelets, epidural	175	NI
6	Frances	Fay	Induction of labour, previous postpartum haemorrhage and third-degree tear	160	NI
7	Georgie	Fay	Induction of labour, previous postpartum haemorrhage and third-degree tear	20	NI
8	Harriet	Holly	Planned induction of labour for mitral valve disease, heparin infusion	105	NI
	Harriet	Hannah	Moderate postpartum haemorrhage		
9	Jodie	Holly	Planned induction of labour for mitral valve disease, heparin infusion	180	49
10	Kathy	Kirsten	In labour, epidural, safeguarding issues	180	37
11	Eugenie	Evie	Significant antepartum haemorrhage at <32/40	100	NI
12	Marie	Maya	Possible pre-eclampsia, for induction of labour	180	37
13	Eugenie	Emily	In labour, epidural, slow progress	60	NI
14	Nancy	Emily	In labour, epidural, slow progress	120	45
15	Olivia	Orla	Latent labour, lupus	175	NI
16	Penelope	Poppy	Paralytic ileus, postnatal	180	NI
17	Rachel	Rose	Syntocinon induction of labour for fetal gastrochisis	120	41
18	Eugenie	Rose	Syntocinon induction of labour for fetal gastrochisis	40	NI
19	Sarah	Sally	VBAC, in labour, group B strep positive	90	NI
20	Tessa	Tamsin	Pyelonephritis, possible early labour, diabetes	120	46
21	Una	Ursula	Pre-eclampsia, intrauterine growth restriction, <32/40	90	43
22	Una	Tamsin	Pyelonephritis, possible early labour, diabetes		
23	Violet	Tamsin	Pyelonephritis, possible early labour, diabetes	50	NI
24	Yolanda	Yvonne	Transfer from low-risk birth environment with raised blood pressure	120	24
25	Zoe	Zara	Early labour, raised temperature, fetal distress	180	NI

This amounted to 25 episodes of observation from 20 to 180 minutes each (average 112 minutes). Each midwife episode was determined by the midwife. One midwife providing care to two women at the same time was counted as one midwife episode. When another midwife came to cover for a break, s/he was consented and it became another midwife episode. The midwife researcher was positioned in the room on a birth ball or in a corner on a chair. The midwife's pseudonym, time and date were typed directly onto a laptop computer. Observation was recorded openly, that is as much as the midwife's activity was recorded without following a structure or plan. As IB for midwives is a relatively new concept, it was not clear what it would look like so it required open recording which, when fitted to the analysis framework, would become clearer. Therefore what the midwife was doing was recorded using free text. At the end of each observation, the midwife was asked for contact details and willingness to take part in an interview.

Interviews

Interviews with 10 of the 21 midwives ranging from 24 to 56 minutes (average 42 minutes) were conducted and recorded on a voice recorder and mobile phone (password protected) within the host maternity unit. Midwives were contacted by telephone and asked whether they would be willing to be interviewed. Midwives were purposively sampled from those observed according to willingness to take part but not age and experience. A semi-structured approach was taken using a series of generic IB trigger questions including:

- What influences the type of information you use for practice?
- Do you always use the information that you find?
- What preferences do you have for types of information?
- What prompts you to look for information?
- When you have asked for information, how do you know it is correct?
- When would you not ask for information?

The content of the observation was also discussed with the midwife during interview using the generic IB trigger questions as a framework. At the start of each interview each midwife was orientated back to the observed scenario. Absolute consistency was not the priority but each midwife was offered similar opportunities while enabling the natural course of the conversation. This was to avoid impeding, influencing or biasing any data.

Ethical considerations

Ethical approval was given by the national research ethics committee dependent on two conditions:

- Assurance that the midwifery researcher would intervene, summon support from the labour ward lead and or report to the consultant midwife if poor practice was observed.
- Justification for the number of participants.

Data were stored on a password-protected computer. Voice recordings were stored securely until verbal data were transcribed, and time to receive a response from participants to check transcriptions had passed, at which point both verbal recordings were deleted.

Data analysis

The data, consisting of typed observations and transcribed interviews, were analysed using thematic analysis. Once line numbered and printed, the data were cut into sentence-long segments each sentence was openly coded and grouped with similar sentences by noting instances in the data relating to the research aims. The codes were then grouped into themes, categories and overarching themes. The codes were then manually coded again using focused coding with pre-set themes developed from the initial open coding.

The analysis was developed as a composite method from the techniques described by Scott-Jones and Watt (2010), Emerson et al (1995) and Strauss and Corbin (1990).

Rigour

Data were collected by the midwife researcher in the labour ward that was not their employing trust. This was to reduce bias and issues of a midwife researcher collecting data at their employing trust (Burden, 1998). The possibility of an overt observer affecting what was happening in the field was accepted. Observational data were not altered or amended in any way once recorded to ensure it remained true to the vision of the field.

Awareness of personal judgements, ensuring that representation of findings was the participants' and in-depth discussions of the data with doctoral supervisors supported the reflexivity required for ethnographic enquiry (Mulhall, 2003). Participants were invited to read and comment on interview transcripts but none responded.

Findings

The overarching themes were:

- Sources and types of information
- Needs and searching
- Colleagues as information sources
- Woman as an information source.

Sources and types of information

The findings showed that information sources used by midwives included maternity notes, guidelines, computers and equipment, women, colleagues and sources in the environment such as posters, pro-formas and books. Three types of information were identified in the study: woman specific – related directly to a woman (found in maternity notes); objective – could be related to any woman (found in guidelines and books); and organisational – related to what was happening in the labour ward. Organisational information was usually found with the labour ward coordinator or possibly other colleagues.

Needs and searching

Midwives enacted IB alongside clinical care; information needs were identified and searches were carried out for different types of information, including woman specific, objective and organisational. Information needs occurred at the start of care, midwives liked to know women's birth plans, history and liked to have an understanding of any conditions the woman had. This meant they were "one step

ahead” (Nancy) and prepared for what may happen during the course of the care.

Needs could be triggered by midwives themselves because they recognised their limitations. Kathy, a newly qualified midwife, said:

“At three o’clock in the morning you think you might know something and actually get it slightly wrong because you are tired and then it is always good to look up things specifically” (Kathy Int KI473).

Jodie recognised her information needs due to the speed that care may be required:

“If a woman comes in and she delivers quickly, I need to get the really important bits of information from her or the computer, like what her blood group is, ready for when she delivers... Have you got any medical problems? Have you had any massive bleeds before or group B strep? And all those sort of things” (Jodie Int JI574).

The woman and her maternity notes, both a source of woman-specific information, were usually in close proximity. Guidelines, a source of objective information, were stored on the computer system. Searching involved accessing a computer, finding the relevant guideline and then finding the information within the guideline. Eugenie maintained they were easy to access. Marie, on the other hand, found it difficult:

“You put in the policy for and then loads of other stuff comes up and you think: ‘I didn’t ask for that I just want the policy for this’” (Marie Int MI286).

Once the guideline was found, information needed to be located within it. Una said that a lot of the guidelines:

“...are far too wordy and complicated and too, they’re not user-friendly to use in a hurry” (Una Int UI140).

Midwives had concerns with how long it may take to find information:

“Like, if it is there and available then you would use it but if you have got to hunt for it, you just don’t have the time on labour ward” (Kathy Int KI288).

Midwives sought information but they preferred it to be straightforward to locate and simple to find specific information within the source. This suggested that the accessibility and usability of the information source was important to midwives.

Colleagues as an information source

Midwives’ colleagues were usually in the labour ward and could be questioned directly, making them an accessible and usable information source. Midwives talked with their colleagues when they recognised the limitations of guidelines. Marie liked the flexibility and the potential to discuss care that may not fit a guideline (protocol):

“You have to follow the protocol but you know like the little bits the individual bits, what works for one woman won’t work for another” (Marie Int MI106).

There were instances when the complexity of care meant that the midwife was professionally bound to refer or inform the obstetricians such as the woman Tessa cared for in labour with diabetes and pre-eclampsia:

“When she came back [from theatre] that was impossible

because she had to have a certain amount of syntocinon but then her insulin was changing and they [obstetricians] wanted her on 85mls an hour... and again it didn’t matter what guidelines I had in front of me then because we were changing the guidelines to try and fit. They even changed the amount of syntocinon” (Tessa Int TI390).

The labour ward coordinator was a key colleague when midwives needed to check care plans or required help with equipment. Beatrice, a midwife with several years’ experience, said:

“Sometimes you just need to talk something through” (Beatrice Int BI409).

She added that she would talk to the coordinator to outline her care plan for agreement or discussion.

Harriet asked the coordinator to help with an unfamiliar pump and medication regime for a woman with heart disease. Diana also sought information from the labour ward coordinator when doing something that she was unfamiliar with:

“Someone that I would know that is experienced, so perhaps one of the coordinators if they weren’t too busy” (Diana Int DI154).

Marie, a midwife of 23 years, was unsure how to proceed with a woman with raised blood pressure in the latent phase of labour, as the labour ward was busy. Marie sought advice from the coordinator. Similarly, Yolanda, a recently qualified midwife talked to the coordinator about care planning:

“I wanted to double check with (coordinator name) whether I should break the waters because of the clinical situation and stuff and the coordinator agreed that it was the right thing to do” (Yolanda Int YI99).

Midwives referred to the coordinator for information in several types of circumstances. This process meant the coordinator became informed of clinical activity on the labour ward which was subsequently amalgamated into organisational information. The coordinator could then deliver organisational information back to midwives who were making decisions about women’s care.

Approachability

When using colleagues as an information source midwives were selective about who they spoke to because some were perceived to be unapproachable:

“If I liked the person in charge, because every so often there are some that make you more nervous than others” (Kathy Int KI541).

Some midwives were clearly uninhibited about approaching colleagues, selecting by appropriateness, rather than approachability:

“Depending on how high risk somebody was that would make me decide who, which doctor I would speak to and who was available, whether I would go straight to senior registrar or consultant or whether I would speak to the registrar or the SHO [senior house officer] depending on what they needed” (Una Int UI44).

A perception of non-approachability appeared to influence who midwives would refer to. However, this may have led to midwives seeking information from inappropriate

colleagues which could have yielded incorrect or less reliable information.

Collaborations for information

Midwives used referral and the round for information. Collaboration was seen to occur during a labour ward round comprising obstetric registrar, midwife, labour ward coordinator, SHO and student midwife. The round was appraised of the condition of a woman with significant heart disease whose labour was being induced and who did not fit the criteria for the guideline. Decisions regarding care planning were made collaboratively within the round by all members.

Collaborations triggered by referral were spontaneous. Zoe referred to the registrar for a woman with possible sepsis. The referral then became a spontaneous collaboration as the registrar then invited another registrar and consultant to the room to discuss the cardiotocograph. Zoe gained the information she needed for care. However, spontaneous collaborations were not always effective. Another midwife, Tessa, was on a busy night shift providing care for a woman in labour who was diabetic and appeared to be developing pre-eclampsia. Tessa approached the registrars on several occasions for referral:

“I said she’s got flashing lights and her headache is getting worse, she’s now got epigastric pain etc, etc. No matter what I did and what I said there was never a decision made with her PET [pre-eclampsia toxemia]” (Tessa Int TI369).

Despite making an appropriate referral for collaborative information, Tessa was unable to get information for care planning. She was aware that the registrars were talking to the consultant on the telephone, but she was still unable to gain information:

“It just felt like there was this... from being on the phone to the consultant, to the registrars, to me there was like Chinese whispers almost” (Tessa Int TI308).

The obstetricians did not include Tessa in the collaboration for care of this woman with complex needs (diabetes, pre-eclampsia and labour).

The round was a planned collaboration with information shared between midwives and obstetricians for each woman on the labour ward. Referral was usually a one-to-one spontaneous collaboration initiated by the midwife to the obstetrician based on a clinical need for further care planning or decision-making. It could increase in size if new colleagues joined. The findings suggest that spontaneous collaborations, as compared to the round, could be less effective at times for care planning and decision-making.

Woman as an information source

Midwives used women as an information source for woman-specific information. Jodie recognised that when talking to women she needed to ask questions in a particular way to ensure she extracted appropriate answers and thus increase the usability of the woman as a verbal information source:

“Sometimes I find that if you ask people: ‘Have you got a medical problem?’ They won’t necessarily, if they’ve got asthma, say ‘I’ve got asthma’ because it’s well controlled, it’s

not a current medical problem in their eyes” (Jodie Int JI122).

Jodie anticipated what may inhibit answers in order to question effectively thus demonstrating a proficiency with her information seeking.

The data suggested that collaborations between midwives and obstetricians may or may not have involved the woman.

“‘I want the baby safe and I’m so hot as well,’ says woman. Zoe is listening to the plan, consultant suggests epidural and review in 30 minutes. Consultant talks to Zoe and asks her if she thinks the plan is OK” (Zoe Int Z310).

Despite the woman talking to the collaboration, her input was not acknowledged.

Women did occasionally deliver information directly to the collaboration:

“The doctor will come in and (the woman) will say something extra that they haven’t told you” (Jodie Int JI280).

Information directly from women could be delivered, acknowledged and not incorporated into a collaboration. Equally, a collaboration that included women could deliver information that the midwife had not been able to retrieve during information seeking.

Discussion

Accessibility, usability and approachability of information

Information for midwives in the labour ward was accessible from several sources that delivered different types of information – woman-specific, objective and organisational. Midwives liked information sources that were easy to locate – their accessibility, and their propensity for delivering the type of information required – their usability. Sources for woman-specific information (the woman and maternity notes) tended to be reliable, accessible and usable. Objective information, applicable to all women, such as guidelines, could be less accessible – because they needed to be found and were less usable as specific information needed to be located within them. There is acknowledgement that information for clinical practice is often not user-friendly (Izcovich et al, 2017; Shahmoradi et al, 2017). Del Fiore et al (2014) suggested that less usability may mean that information needs may not be met or be redefined as simpler needs. Both scenarios have the potential to impact on the quality of care given (Kumaran and Chipanshi, 2015), as care may be tailored to meet the limited accessed information rather than care driving appropriate information needs.

Midwives’ IB in the labour ward could be enhanced by improving the accessibility and usability of objective information through improved presentation and effective search software on computers. Equally, teaching midwives how to formulate effective clinical questions to satisfy objective information needs could be developed to complement effective information seeking with non-user-friendly sources.

Midwife and colleagues discussion

Colleagues are recognised as a frequently used (Ebenezer, 2015) and valuable information source for healthcare professionals (Papermaster and Champion, 2017). Labour ward coordinators hold organisational information,

transmitted to and from them by midwives. The study findings suggest that the labour ward coordinator is a key colleague for discussions of clinical care. Midwives validate their care plans and gain information about procedures and equipment with coordinators. Papermaster and Champion (2017) asserted that informal consultation with colleagues when seeking information is more effective when a care plan and goal are presented with the initial problem. Labour ward coordinators are an information source in that they can disseminate local guideline and policy changes very quickly, however, they may not always be approachable. The perception of their approachability may stop midwives using them as an information source.

The relationship between information sources, and the types of information each yielded may also point to the prevalence of midwives using colleagues as an information source. It could also indicate why objective (type) information and by default, evidence-based practice, may be less used in the labour ward. According to the principles of evidence-based practice (Straus et al, 2011) research, which is objective information in this study, should underpin care management and practice-based information. Several studies (Ebenezer, 2015; Kannampallil et al, 2014; Kostagiolas et al, 2012; O’Leary and Ni Mhaolrunaigh, 2012; Spenceley et al, 2008; Funk et al, 1991) suggested that this is problematic in clinical practice due to time constraints, limited evidence-based skills of health professionals and the lack of versatility of documented information. Objective information sources, such as the guidelines, can only deliver objective information. If women meet the criteria then this is all that is required. However, colleagues are versatile and can deliver objective, woman-specific and organisational information to meet the needs of women whose care falls outside of guidelines.

Collaborations

Collaborations are recognised as beneficial to general patient care (Lewin and Schaefer, 2017) and in high-dependency maternity care (RCA, 2011; RCOG, 2007). Benefits include the negotiation of care planning through opposition of knowledge from members of the multidisciplinary team (MDT) (Mahdizadeh et al, 2015). In this study there was appreciation that effective collaboration contributed to IB for midwives. Kumaran and Chipanshi (2015) acknowledged that nurses (and midwives) needed to take part in care collaborations to verbalise the needs of patient. Aripoli et al (2016) supported the attendance of members of the MDT on the round to improve patient care and increase the visibility of members. Effective collaboration was seen during the round when it was formally convened, each member of the MDT was present, recognised and contributed to the discussion. However, the findings suggested that spontaneous collaborations may not function as well as formally convened collaborations for information access for midwives. There is minimal evidence in the literature regarding processes to improve ineffective collaborations and their expected positive outcomes (Huynh et al, 2017). For this study, with a focus on IB, improving information

access via collaboration is key. Duner (2013) maintained that good teamwork is helped by ‘formal and informal team time, worked in a more integrated manner’ (Duner, 2013: 252). However, a systematic review by Mahdizadeh et al (2015) identified research studies that did not find significant differences when examining the characteristics of MDT collaboration members on the success of the collaboration process. Midwives and obstetricians often work together in teams. To promote effective information collaboration there is the potential for expanding the scope and evaluation of practical obstetric multidisciplinary training (PROMPT, 2018) to encompass IB.

Including women in care collaborations

According to patient charters (International Confederation of Midwives, 2017a; 2017b; NHS England, 2014; DH, 2013; 2010; 2001; RCOG, 2008; 2007), all women should be involved in their care and labour ward collaborations are an ideal opportunity for this to happen. Ensuring that the woman is included in collaboration is understood to potentially improve health but is known to present a challenge (Shahmoradi et al, 2017). As initially the midwife gathered information from the woman, she may input this information on behalf of the woman during collaboration. Porter et al (2007) termed this model ‘classical professional, where control remained with the professionals’ (Porter et al, 2007: 526), rather than ‘new professional’, in which negotiation took place between the woman and healthcare professionals. Women were not routinely included in collaborations about their care, although were able to contribute on occasions but not always effectively. The dual position of midwives receiving information from women and presenting it to collaborations, and women participating in collaboration could enable them to be included by the informed choice model to ‘make a choice based on unbiased, clear and full disclosure of available information with their preference in mind’ (Noseworthy et al, 2013: 43).

Information excellence

Some midwives exhibited excellent IB during clinical care, demonstrated by the comparison of information-searching techniques among all the midwives in the study. This excellence was hallmarked by appropriate selection of information sources, effective interrogation and a greater resilience to issues of accessibility, usability and approachability. These midwives were able to engage and manage the woman and colleagues as sources of verbal information, but also documented sources. Appropriate colleagues were approached to deliver information to ensure that collaborations were effective. Information excellence showed the level of complexity that the information excellent midwife was able to engage in during information search. It suggested that the information excellent midwife was able to balance the value of information gained against the search time taken and clinical needs. In contrast, midwives with information adequacy did not share the level of engagement with all information sources. When considering colleagues as an information source the approach of information

adequate midwives was based on whether they liked the colleague or found them approachable, rather than how suitable they were to provide the information.

The way midwives enact IB may influence the volume, quality and effectiveness of information retrieved by midwives. If a lesser quality of IB is enacted, it is possible that the volume and quality of information will be reduced. If unsuitable sources are used to provide the information then there may be a resultant issue with quality. Benner suggested that expert practice can be 'emulated by others' (Benner et al, 1996: 145) although experience is required (Benner, 1982). If information excellence can be enhanced or taught, in much the same way as evidence-based practice techniques are, and emulated in the way that expert practice is, it could improve IB and contribute to better information quality. Equally, if midwives understand the value of excellent IB, they may appreciate that the investment of time is worth appropriate information gain. If midwives understand the relationship between information types and sources, and the reliability issues associated with information formats, it may improve the appropriateness of the sources they use.

Study strengths and limitations

A qualitative methodology was required that could observe participants in their environment while also enabling

participants' own meanings to be explored. Ethnography has ecological validity, it acknowledged context and understanding of meanings for participants was revealed.

The depth of the data collected contributed to the credibility of this study, although there was also a resultant wealth of unfettered data that was complex and difficult to manage and analyse for a novice researcher. Equally, the midwife status of the researcher may have influenced what was recorded during data collection and the analysis.

Conclusion

Excellent and effective IB by midwives at the point of care has the potential for improving safety and quality of clinical care. Creating more user-friendly formats of guidelines and search techniques for electronic information could improve information access. IB education for midwives, including defining appropriate information needs at the point of care and effective search techniques for guidelines, could support improved information practice. Discussion with colleagues, whether informal or formal, can deliver information tailored to individual women who do not fit guidelines. Educating MDTs around making this effective and including women in their care collaborations is possible through existing MDT training.

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Online medication purchasing behaviour in pregnancy: a structured review of the literature

Alison Little¹ MSc, BSc, RM, RN. Marlene Sinclair² PhD, MEd, PGDip/Education, BSc, RM. Huiru Zheng³ PhD, MSc, BEng, PG Cert. Patricia Gillen⁴ PhD, MSc, PGD, BSc, RM, RGN, FHEA.

1. PhD student, Institute of Nursing and Health Research, Ulster University, Newtownabbey BT37 0QB Northern Ireland. Email: little-a4@ulster.ac.uk

2. Professor of midwifery research and head of the Centre for Maternal, Fetal and Infant Research, Institute of Nursing and Health Research, Ulster University, Newtownabbey BT37 0QB Northern Ireland. Email: m.sinclair@ulster.ac.uk

3. Professor of computer science, Computer Science Research Institute, Ulster University, Newtownabbey BT37 0QB Northern Ireland. Email: h.zheng@ulster.ac.uk

4. Head of research and development for nurses, midwives and allied health professionals, Southern Health and Social Care Trust, Rosedale, Moyallen Road, Gilford BT37 0QB Northern Ireland. Email: patricia.gillen@southerntrust.hscni.net

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Abstract

Background. When deciding to purchase medication online, a pregnant woman has to negotiate a complex health system that involves concerns regarding risk, safety and responsibility for the baby along with her own needs. Research is required to determine what modifiable factors influence a pregnant women's behaviour with regard to the purchasing of medications online.

Aim. To identify the modifiable factors that influence a pregnant woman's intention to purchase medication online.

Methods. A structured review of the literature was completed using a 12-step approach. PRISMA guidelines were followed to ensure credibility and transparency in the review. A systematic search of the literature was carried out on eight databases including: Medline (OVID), CINAHL Plus, PsycINFO, Web of Science, Scopus, Google Scholar, EtHOS and PROSPERO. Inclusion criteria were primary quantitative, qualitative, mixed-method studies or literature reviews, having been published in peer-reviewed journals between January 2007 to January 2018 in English. The population was pregnant women, and the outcomes of interest were the modifiable factors that influence intention to purchase medication online. Quality appraisal of the retrieved papers was assessed using the Joanna Briggs Checklists for Analytical Cross-Sectional Studies, Qualitative Studies and Diagnostic Test Accuracy.

Findings. The search of the databases retrieved 4150 papers. Only four papers were eligible for inclusion in the review. Themes of medication safety, online purchasing of medication and the mother's relationship with healthcare professionals were identified. Subthemes included attitudes towards taking medication, safety of the unborn baby, risks of online medication purchasing, advertising factors, customer reviews, changing dynamic of the doctor/patient relationship, and ability to bypass medical consultation.

Conclusion. There is a definitive lack of empirical studies in this field and further qualitative and quantitative research is needed.

Implications for practice. Midwives and healthcare professionals need to be aware that pregnant women are purchasing medications online.

Key words: Pregnancy, medication, safety, online purchasing, internet, evidence-based midwifery

Background

Over recent years there has been changing dynamics in the pregnant population. Women are becoming pregnant at an older age (Kenny et al, 2013) and there is poorer general health at the start of pregnancy associated with lifestyle factors such as smoking, alcohol consumption, recreational drugs, obesity, reduced physical activity and a recognised increase in IVF pregnancies (Klonoff-Cohen, 2017). These factors, along with pre-existing medical conditions, increase the need for some women to continue taking medication during pregnancy, with more than 90% of pregnant women taking a prescribed or over-the-counter (OTC) medication at some stage during their pregnancy (Mitchell et al, 2011).

For many medications, there is a lack of evidence regarding specific recommendations for use by pregnant women (Thorpe et al, 2013; EUROmediCAT, 2011). When taking a medication, a pregnant woman has to negotiate complex health-based decision-making that includes concerns involving risk, safety and responsibility for the baby along with her own needs (Meurk et al, 2014). A lack of evidence regarding the safety of medications for use in pregnancy creates a challenge for healthcare professionals and pregnant women. Ultimately this

may impact on women's ability to make informed decisions (Hansen et al, 2016).

In recent years, the internet has developed widespread attention as a source of health-related information for women during pregnancy (Sinclair et al, 2018; Gao et al, 2013; Song et al, 2013; Lagan et al, 2010) and a purchasing channel for medication (Sinclair et al, 2018; Holtgräfe and Zentes, 2012). Sinclair et al (2014) identify women are self-medicating and buying paracetamol, opiate-based drugs, such as codeine, and anti-inflammatory medication for lower back pain. There is also a body of evidence that women are using herbal medication during pregnancy (Kennedy et al, 2016; Kennedy et al, 2013). For the pregnant woman, the internet has now provided the option to purchase OTC medications, herbal/homeopathic medications and prescription-only medicines online (Fittler et al, 2013). The literature regarding the increasing prevalence of e-pharmacies in use would suggest the online medication industry is a growing economy (The Centre for Safe Internet Pharmacies, 2016).

With the growing importance of the internet as a source of information and provision of options to purchase medications online, research is required to address the gap in knowledge

and to determine what modifiable factors influence a pregnant woman's behaviour with regard to the purchasing of medications online. Ability to signpost women and healthcare professionals to access valid and reliable online information about medication usage, and online purchasing in pregnancy is our shared responsibility (Sinclair, 2014). Understanding what, how and why women purchase medication online is important to shape future communications between healthcare professionals and pregnant women regarding self-medication, medication safety and service provision.

Aim

The aim of this structured review was to critically analyse and synthesise previous research studies in a transparent and reproducible way in order to increase knowledge of online medication purchasing behaviour in pregnancy.

Research question

The authors used the approach recommended by Khan et al (2003), Patient, Exposure and Outcome (PEO) to focus the research review question: 'What modifiable factors influence a pregnant woman's intention to purchase medication online?'

The objectives were to:

- Describe and analyse patterns of online medication purchasing by pregnant women, locally, nationally and internationally
- Explore the theoretical, technical, social, financial and practical factors likely to influence a pregnant woman's intention to purchase medication online.

Method

The 12-step guideline by Kable et al (2012) was used to provide a structured and replicable literature review. This structured approach was used to document the search strategy prior to the critical analysis and synthesis of the data retrieved (see Table 1). This structure was also chosen as it provided a framework that was easily translatable for writing for publication. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were also followed during the review to ensure credibility and transparency in the review process (Shamseer et al, 2015).

The databases Medline (Ovid), CINAHL Plus, PsycInfo, Web of Science and Scopus were searched in April 2017 and the search was updated in January 2018 to locate published research regarding online medication purchasing behaviour in pregnancy. Medline (Ovid) was identified as one of the key databases for the topic of interest in this review and the search strategy was initially trialled on this in order to test that the MeSH and key word terms retrieved relevant papers.

Searches of the grey literature were carried out using Google Scholar for any other published or unpublished material such as conference presentations. Searches for theses were undertaken by searching Ethos, which provides a list of theses stored by the British Library. Manual searches for references were undertaken by searching for relevant citations of selected articles. PROSPERO was searched for any ongoing or recently completed systematic reviews. Alerts were set up on the first author's personal account for each database in

Table 1. A 12-step guideline for authors (Kable et al, 2012)

1.	Provide a purpose statement
2.	Document the databases/search engines used in your search strategy
3.	Specify the limits applied
4.	List the inclusion criteria and exclusion criteria
5.	List the search terms used
6.	Document the search process
7.	Assess retrieved articles for relevance
8.	Document a summary table of included articles
9.	Provide a statement specifying the number of retrieved articles
10.	Conduct quality appraisal of retrieved literature
11.	Critical review of the literature
12.	Check the reference list for accuracy

order to receive notifications of new publications during the period of the review.

The following inclusion/exclusion criteria were applied:

Inclusion criteria

- Studies that involve pregnant women purchasing medication online
- Papers from peer-reviewed journals, published from January 2007 to January 2018
- Primary quantitative, qualitative, mixed-method studies and literature reviews
- Articles written in English
- Studies involving only human subjects.

Exclusion criteria

- Studies that do not focus specifically on pregnant women purchasing medication online
- Studies focusing on online purchasing of contraception
- Studies that were not peer-reviewed
- Studies not written in English.

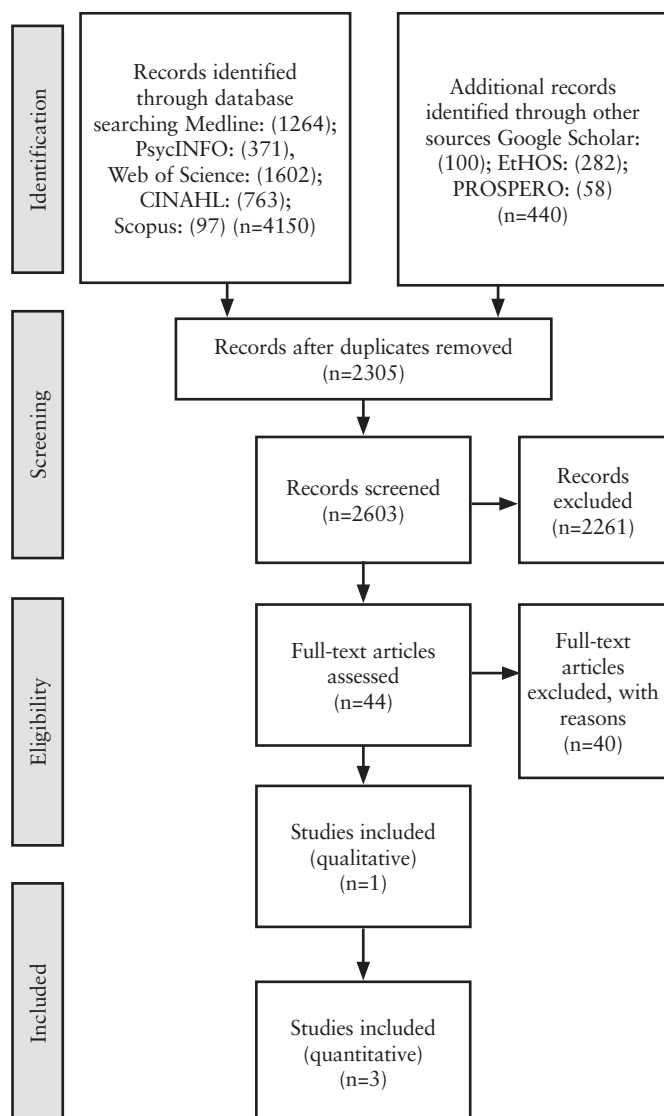
Search strategy

The research question was broken down into the component parts to identify the appropriate search terms.

The search strategy was created with the assistance of the university librarian who had expertise in systematic review searching specialising in life and health sciences. The search terms were tested to verify their effectiveness in locating papers consistent with the inclusion and exclusion criteria for the review, prior to applying to all searches. After the Medline strategy was finalised, it was adapted to the syntax and subject headings of the other databases. Literature search results were transferred to the Refworks reference management software package to facilitate collaboration with reviewers during the study selection process.

The PRISMA flow diagram (see Figure 1) demonstrates the strategy used for the selection of the papers included in the review. The Refworks reference management software package was used to remove all duplicate references. All remaining

Figure 1. Search strategy for article selection PRISMA flow diagram



relevant papers were screened by title. Those not meeting the criteria were removed. Where there was uncertainty regarding the relevance of the study by title, the abstract was read to determine if the study met the inclusion criteria. In cases where it was unclear from the abstract if the article had relevance to the review, the full paper was obtained from the databases, open access or inter-library loan system and inclusion and exclusion criteria applied.

Quality appraisal of the retrieved articles was assessed using the Checklist for Analytical Cross-Sectional Studies (The Joanna Briggs Institute, 2016a), the Checklist for Qualitative Studies (The Joanna Briggs Institute, 2016b) and the Checklist for Diagnostic Test Accuracy Studies (The Joanna Briggs Institute, 2016c). In the EUROmediCAT (2011) study, methodological limitations were identified with only two focus groups having been carried out. It is, therefore, debatable if data saturation would have been achieved from the findings. However, the study was considered too valuable to exclude and was included to explore all the current body of knowledge of the topic.

The study by Sinclair et al (2018) included in the review identified 5% of the population were using the internet to purchase medication online, though the data were collected in 2013, so an update is required for today's population of pregnant women. There was also no breakdown of what actual medications pregnant women specifically purchase from the internet. None of the studies extracted from the literature address the social factors that influence medication purchasing behaviour online, such as the influence that family and friends have on a pregnant woman's intention to purchase medication online. There are also no studies that look at purchase intention in relation to the human/computer interaction of the mother and website. It is relevant to discover if factors, such as website navigation and interpretation of information provided on the site, influences a woman's purchase intention.

Results

In total, 4590 hits were obtained from the search strategy. After screening 44, full-text papers were accessed for eligibility and four papers met the inclusion criteria to be included in the review. Three of the papers retrieved from the literature search all related to the EUROmediCAT (2011) four phase, multi-method scoping study conducted from March 2011 to December 2013 (see Table 2 overleaf). The findings from the included papers were explored using thematic analysis. Overarching themes were identified to elicit what modifiable factors influence a pregnant woman's intention to purchase medication (Braun and Clarke, 2006). Theme maps were used to form a visual tool to map out the facets of the developing analysis and to identify themes, subthemes, and interactions between themes and subthemes. The main themes and subthemes were:

- Medication safety
- Attitude towards online medication purchasing
- Mother's relationship with healthcare professionals.

Medication safety

Attitude towards taking medication in pregnancy

Attitude towards taking medication in pregnancy is a key determinant of whether a pregnant woman will decide to purchase medication online. Sinclair et al (2018) identified that 87% would only take a medication if it was absolutely necessary to maintain their health status. Furthermore, in their study 40% of the sample (n=82) had a prior history of a chronic health condition and 39% were taking at least one medication when they became pregnant.

Concerns for their unborn child

Sinclair et al (2018) identified that regardless of age, 90% of women would reconsider taking medication if they were to become pregnant due to the potential risk to their unborn child. This is in stark contrast to the study by Murtagh et al (2017) that demonstrated there is a cohort of pregnant women at the other end of the spectrum who can avail of the option to purchase medication online with the intention to end their pregnancy.

Attitude towards purchasing medications online

Perceived benefits of online medication purchasing

Sinclair et al (2018) identified that 5% of the pregnant

Table 2. Summary of the papers selected for inclusion in the review

Author (year) country	Study design	Sample size and sites	Design/data collection methods	Comments/key findings	Quality appraisal
1 Lagan et al (2014) Assessing the availability of the teratogenic drug isotretinoin outside the pregnancy prevention programme: a survey of e-pharmacies	Cross-sectional survey Online purchase of isotretinoin	n=50 e-pharmacies	Quantitative Phase 1: Cross-sectional survey identifying e-pharmacies Phase 2: Purchasing isotretinoin from subset of phase 1 to access PPP policy adherence, purchasing procedures and check samples for chemical authenticity	Tetrogenic compounds isotretinoin is accessible to purchase online while pregnant without prescription n=43 (86%) e-pharmacies did not have authentication logo Isotretinoin could be purchased from 42 sites without valid prescription Information missing on birth defects n=25 Information on not taking isotretinoin in pregnancy missing in n=24 Information missing on not taking isotretinoin if planning pregnancy missing n=33 Of eight attempted purchases n=7 arrived. All were verified as isotretinoin	Checklist for analytical cross sectional studies (The Joanna Briggs Institute, 2016a)
2 EUROMediCAT (2011) W7 Implications of the internet in relation to medication access and safety information	Four-phase multi-method approach	Phase 4: Two focus groups of women (n=11 and n=15)	Phase 4: Online focus groups	Phase 4: Findings substantiated the data from the literature about accessibility, affordability, convenience and the need to check medication safety information	Checklist for qualitative studies (The Joanna Briggs Institute, 2016b)
3 Sinclair et al (2018) An assessment of pregnant women's knowledge and use of the internet for medication safety information and purchase	Cross-sectional survey	n=284	Quantitative: online survey	5% of women reported buying medication online 46% of women with higher levels of education consider buying medication online as safe	Checklist for analytical cross-sectional studies (The Joanna Briggs Institute, 2016a)
4 Murtagh et al (2017) Exploring the feasibility of obtaining mifepristone and misoprostol from the internet	Online purchase and chemical assay of mifepristone and misoprostol	n=18 websites identified to purchase mifepristone and misoprostol online	Quantitative: n=20 mifepristone-misoprostol combination products and n=2 misoprostol products purchased online	Online abortion medication can be purchased online in the US without prescription Mifepristone tablets purchased had within 8% of the labelled amount of active agent (200mg mifepristone tablet contained between 184.3mg and 204.1mg) Misoprostol 200mcg tablets contained between 34.1mcg and 201.4mcg of active ingredient	Checklist for diagnostic test accuracy studies (The Joanna Briggs Institute, 2016c)

population purchased medications online. A qualitative study by EUROMediCAT (2011) found that women perceived the benefits of online medication purchasing as being cheaper than other retailers, convenient, and accessible without prescription or unavailable in the UK. Sinclair et al (2018) identified that women with a higher educational attainment

were more likely to consider purchasing medication from online pharmacies to be safe (42% vs 26% p<.001) and would purchase medication online from an e-pharmacy while pregnant if they could not buy the medication from a local pharmacy or doctor (54% vs 46% p=.008), or if it was cheaper (41% vs 23% p=.004) compared with women with

lower educational attainment. In addition, they reported that 71% of pregnant women who purchased medication had been asked 'sometimes' or 'never' by the online pharmacy for a prescription and only 57% had been asked 'sometimes' if they were pregnant. The remaining 29% were not able to remember if they had been asked. In total, 43% of women in this study were never asked to complete a medical questionnaire. None of the online pharmacy websites in the study by Murtagh et al (2017) asked for a prescription.

Perceived risk of purchasing online

A pregnant woman's perceived risk plays a major role in the intention to purchase medication online. Sinclair et al (2018) identified that regardless of demographic status, 85% of women would not purchase medications online if they were pregnant, due to fear surrounding legitimacy of the e-pharmacy, safety, quality, dosage and whether or not they would receive the product. Of the women who purchased medication online, 50% always received their order, the rest only received them occasionally or never. This study also reported that 46% of women with higher levels of educational attainment thought that buying medications online from e-pharmacies as safe and acceptable. However, only 5% of the population had done so during pregnancy.

The study by Lagan et al (2014) provided evidence that women of childbearing age, who were potentially in early pregnancy, had the opportunity to purchase online the teratogenic drug isotretinoin for severe acne without any form of risk assessment, pregnancy prevention advice, or warning of the potential teratogenic effects associated with the consumption of the drug. This particular drug is a known teratogen and it should not have been available for online purchase without a prescription as the recipient, if female, must be on double contraception and have medical counselling.

In relation to verifying illegitimacy of an online pharmacy, Sinclair et al (2018) found 200 (70%) women had never seen a symbol or warning message indicating a medication may be harmful to a baby 'if taken in pregnancy' or 'do not take in pregnancy'. Lagan et al (2014) assessed eight e-pharmacy sites that displayed a pharmacy accreditation seal and one of these was not authentic. Also, if the site displayed an 'authentic' accreditation seal, it did not necessarily follow that governance procedures were in place to minimise the risk of harm for consumers who purchase medication online. Regardless of age and educational attainment 75% of women stated they would be unable to differentiate between a legitimate and illegitimate online pharmacy.

EUROmediCAT (2011) identified that pregnant women have concerns regarding the quality of the product they order, what country it is from and whether the product they receive is safe. Lagan et al (2014) found that almost half (41% n=21) of 50 e-pharmacies had a home and purchasing page hosted on servers in different countries and although 94% (n=47) displayed a policy on medication quality assurance, 68% (n=34) did not verify what country the medication was manufactured in, with only 30% stating the medication was manufactured in India and one in the UK. Murtagh et al (2017) found that all of the products were labelled

as having been manufactured in India. They also found evidence of multiple websites being run by the same vendor, with one website disappearing and reappearing several days later during the data collection period. Fittler et al (2013) had similar findings and found one in five online pharmacy websites closed down and reopened again within a four-year period, presumably to avoid prosecution from regulatory bodies or unsatisfied customers.

A major concern identified by pregnant women was whether the medication they received would be of good quality (Sinclair et al, 2018). EUROmediCAT (2011) also highlighted concerns from pregnant women regarding whether the medication was effective or not for their particular condition. Lagan et al (2014) conducted laboratory tests on n=7 samples of isotretinoin purchased from online pharmacies and of these the quality of the compound in all samples was verified to be authentic. Murtagh et al (2017) also conducted chemical assay testing on samples of mifepristone and misoprostol tablets purchased online without prescription. They found the mifepristone tablets contained mifepristone within 8% of 200mg, ranging from 184.3mg to 204.1mg per tablet and misoprostol between 34.1mcg to 201.4mcg.

Lagan et al (2014) found that the medication purchased online had minimal information supplied and none had a patient information sheet. None of the samples were supplied in a box or container, two samples were wrapped in bubble wrap and one tapped between two pieces of cardboard. However, four samples did highlight a warning to female patients that the medication may cause severe birth defects and should not be taken if pregnant or they are likely to become pregnant during treatment. Three samples contained no reference or warning regarding pregnancy. Murtagh et al (2017) found that none of the samples of medication they purchased online came with any form of instruction or written communication. All of the tablets in this study did arrive in blister packs. However, eight of the products had small pin-prick holes and one product arrived damaged with the blister packs split open and some of the tablets broken.

Another concern of online purchasing is whether the product will be received. Murtagh et al (2017) ordered 22 products online from 18 websites and received 20 products from 16 websites. Lagan et al (2014) found of the eight online purchases of medication, seven resulted in the delivery of the product, with one purchase being blocked by the credit card company as it was on their fraudulent blacklist.

Influence of advertising and reviews

Pregnant women have acknowledged that they have read testimonials and blogs provided by other customer reviews to inform their decision to purchase medication online (EUROmediCAT, 2011). Pregnant women have also identified that they use Google as a search engine to identify pharmacy websites and other purchasing channels such as eBay and Amazon to obtain medication (EUROmediCAT, 2011). Lagan et al (2014) identified statements on e-pharmacy websites that were misleading and openly encouraged the online purchase of isotretinoin by promoting the purchase without a prescription and being as easy to obtain as a 'click of a mouse'. Lagan

et al (2014) also highlighted there was little to no adherence of the Pregnancy Prevention Programme (PPP) as a condition of licensing to safeguard pregnant women and women of a childbearing age from the teratogenic effects of isotretinoin.

Mothers relationship with healthcare professionals

Changing dynamic of the doctor/patient relationship

The accessibility of online pharmacies has altered the dynamic of the doctor/patient relationship and the consumer can directly bypass the safeguards provided by this relationship and go online to purchase prescription-only medication without a prescription (Lagan et al, 2014). Murtagh et al (2017) also recognised that purchasing medication online does not require a prescription and provides privacy and self-agency in countries where often restrictive laws, clinic closures and financial barriers inhibit a pregnant woman desiring an abortion.

Ability to bypass medical consultation

Murtagh et al (2017) identified that none of the 18 websites they ordered online medication from required a prescription or medical documentation, with only two requiring an online medical history questionnaire to be completed. Also, none of the questions on the questionnaire asked about gestational age or specific contraindications for mifepristone. Pregnant women have voiced concerns that by purchasing medication online and not having a consultation with a healthcare practitioner, something harmful could be missed (EUROmediCAT, 2011).

Discussion

A pregnant woman has to take into consideration the effect of a medication on her unborn child. This alters the decision-making process from that of a general purchase, often generating reservation in not only purchasing medication online, but on whether to take medication in general. Twigg et al (2016) identified the safety of their baby as one of the main concerns for pregnant women when deciding not to take medication. Clemow et al (2014) found pregnant women routinely overestimated the teratogenic risks of taking medication which subsequently affected whether the woman took medication during her pregnancy. Thorpe et al (2013) also discussed the other potential reason for not taking medication as being a lack of evidence and accessible safety information. However, the majority of literature regarding the online information-seeking behaviour of pregnant women would suggest that safety information was readily available and accessed regularly by the pregnant population (Sinclair et al, 2018; Sayakhot and Carolan-Olah, 2016; Hamäen-Anttila et al, 2014; Gao et al, 2013; Song et al, 2013; Lagan et al, 2010). However, studies by Stephansson et al (2011) and Widnes et al (2012) suggested women with underlying co-morbidities are not compliant with taking prescribed medication during pregnancy. Sinclair et al (2018) attributed this to the possibility that a pregnant woman's own online research regarding prescribed medications influences their informed decision-making.

The papers from the review highlighted the benefits of

online medication purchasing for pregnant women as being cheaper, convenient, accessible, non-prescribed, and the ability to purchase across geographical boundaries contrary to regulation (Sinclair et al, 2018; Murtagh et al, 2017; Lagan et al, 2014; EUROmediCAT, 2011). These factors are not new and there is similar data from the general population by Fitter et al (2013), Assi et al (2016) and Kennedy and Wilson (2017). There is now a recognised growing trend for people accessing OTC medication, herbal and homeopathic medication in pharmacies, health food stores and supermarkets (Holtgräfe and Zentes, 2012). All of these outlets now have online purchasing options without any meaningful engagement with healthcare professionals for guidance, and can thus be a cause of concern and increase the purchasing risk for the pregnant woman.

Sinclair et al (2018) identified that only 5% of the pregnant population have purchased medication online during pregnancy, which is a relatively small percentage. However, our recent pilot data of 44, shows that now almost 25% of pregnant women are purchasing medication online (Little et al, 2018), a sharp increase from the data collected in 2013 in the UK study by Sinclair et al (2018). This is indicative of the growing number of pregnant women who have purchased medication online in the past five years. Further research is required to examine the online purchasing behaviour currently in a larger, more international sample. In the UK, many prescription medications are free, therefore, there is not the same inclination on the purchaser to have to look for alternative, more cost-effective treatment. Conversely, in the US, one in four people who take prescription drugs have difficulty affording them and turn to more cost-effective means of procurement (Cox et al, 2016).

Healthcare in the UK is rapidly changing. Press coverage has highlighted NHS England is cutting low-value medicines, such as indigestion and heartburn medication, from prescriptions (National Health Executive, 2017). With these trends and ever-looming budget cuts, it will not be long before more pregnant women in the UK turn to the internet to obtain medication for pregnancy as a more cost-effective means.

The dangers associated with illegitimate online pharmacies have been recognised by NHS Choices (2015) and the US Food and Drug Administration (2016), who have provided online advice and guidance on how to purchase medication safely online. However, Kennedy and Wilson (2017) highlighted that consumers have difficulty in recognising the signs of an illegitimate pharmacy and that advice alone may not prevent them from accessing such sources. Sinclair et al (2014) also identified 71% of women had never seen pregnancy warning symbols on online medications.

Lagan et al's (2014) study demonstrated that pregnant women and those of a childbearing age can potentially purchase teratogenic medication online without any risk assessment, pregnancy prevention advice or adequate warnings of the dangers associated with taking teratogenic medication on pregnancy. This highlights a strong concern regarding the safety of purchasing medication online with the potential teratogenic risk on the fetus. As such, pregnant women and women of a childbearing age need educating on

the effects of potentially teratogenic medications and how to purchase medication safely online from legitimate websites.

The studies by Lagan et al (2014) and Murtagh et al (2017) both indicated that medications purchased online fall short of the Medicines and Healthcare Products Regulatory Agency (MHRA) guidance on medicines regarding packaging, labelling and patient information leaflets (MHRA, 2016). This evidence is consistent with studies by Fittler et al (2013) and Berard et al (2014) that found pharmaceutical products packaging falls short of what is to be expected, thus validating fears regarding the quality of products and potential risks associated with online purchasing for the pregnant woman. Ultimately, if purchasing a medication online the consumer wants to receive the product ordered. Sinclair et al (2018) have highlighted pregnant women have reservations regarding the quality of the product they receive. However, Lagan et al (2014) found that all the medications purchased online were chemically verified as isotretinoin, as per order. Murtagh et al's (2017) study verified the active ingredient of the medication purchased online was mifepristone. However, the dosage of mifepristone tablets purchased had a range within 8% of the labelled 200mg amount of active chemical agent (ranging from 184.3mg to 204.1 mg per tablet) – a lower range than would be expected. Berard et al (2014) found misoprostol stored outside a blister packet exhibited a 5% loss in the active ingredient within 48 hours and 10% decrease in the active ingredient dosage when exposed to 25°C and 60% relative humidity for one week, thus having the potential to adversely impact the clinical efficacy of the product.

With the emphasis on empowering women in maternity care to make decisions, the use of the internet has facilitated women seeking information for themselves. It has also facilitated women to bypass the healthcare professional consultation, and allow the direct purchase of medication. The emerging trend for self-medication through online medication purchasing has been highlighted in the literature by Mehmood et al (2016) as giving patients an opportunity to take responsibility and build confidence in their ability to manage their own health. However, this has to be balanced

with an individual's level of knowledge, information and healthcare support to avoid issues of misdiagnosis or availing of inappropriate treatment.

Bypassing the doctor-patient consultation can also be an advantage to pregnant women who have decided they no longer wish to continue with a pregnancy (Murtagh et al, 2017). A simple Google search with the search terms 'purchasing medication in pregnancy' produces several thousand 'hits'. However, the information provided was not on OTC, prescription or herbal medications, rather it focused on the medications women do not conventionally want to discuss with their healthcare practitioner; those that relate to termination of pregnancy. Media releases have identified that women have bought termination of pregnancy medication over the internet and in places such as Northern Ireland where the termination of pregnancy is illegal, they have been prosecuted for their choices (McDonald, 2017). As such, further research is required to address these sensitive issues that have ethical and legal implications for women and healthcare practitioners.

Strengths and weaknesses of the review

The methodology adopted has demonstrated quality appraisal, replicability and transparency. However, the review is limited by the timeframe and by the inclusion of English only.

Conclusion

This structured review of the literature has highlighted that there is a paucity of empirical studies that provide evidence on the online medication purchasing behaviour of pregnant women. Midwives and healthcare professionals need to have an awareness that women are now purchasing medication online and be able to guide women and their families to effective and accurate information on purchasing medication safely via the internet.

Research is needed to explore pregnant women's behaviour in relation to purchasing medication online and what factors influence their intention to purchase medication in relation to human/computer interaction and website usability.

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Navigating the social complexities of breastfeeding: an interpretative phenomenological analysis of women's experiences

*Samantha J Charlick*¹ BHLthSc, RM, *Jan Pincombe*² PhD, RM, *Lois McKellar*³ PhD, RM, *Andrea L Gordon*⁴ PhD.

1. PhD candidate, School of Nursing and Midwifery, University of South Australia, GPO Box 2471, Adelaide, South Australia 5001. Email: samantha.charlick@mymail.unisa.edu.au

2. Professor (adjunct), School of Nursing and Midwifery, University of South Australia, GPO Box 2471, Adelaide, South Australia 5001. Email: jan.pincombe@unisa.edu.au

3. Senior lecturer, School of Nursing and Midwifery, University of South Australia, GPO Box 2471, Adelaide, South Australia 5001. Email: lois.mckellar@unisa.edu.au

4. BioSciences tutor, School of Pharmacy and Medical Sciences, University of South Australia, GPO Box 2471, Adelaide, South Australia 5001. Email: andrea.gordon@unisa.edu.au

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Abstract

Background. Exclusive breastfeeding provides complete nutrition for a baby's first six months of life. However, the majority of Australian infants are not exclusively breastfed for this length of time. Although numerous strategies have been implemented to increase rates of exclusive breastfeeding, Australian statistics remain low. Furthermore, most breastfeeding research has focused on why women cease breastfeeding in the early postnatal period (from birth to two months), yet limited research focuses on the experience of exclusive breastfeeding between two and six months, where the greatest decline occurs.

Aim. To provide an in-depth, idiographic interpretation of the experiences of first-time Australian mothers who intended to exclusively breastfeed for six months, but ceased between two and six months.

Methods. The study utilised interpretative phenomenological analysis (IPA) to understand how five new mothers understood their breastfeeding journeys. Data were collected through face-to-face semi-structured interviews. Data were transcribed in full and analysed using IPA's flexible seven-step approach. This research was approved by the women's and children's health network human research ethics committee (HREC) (HREC/14/WCHN/008) and the University of South Australia HREC (0000031997) in early 2014.

Findings. Three higher-order themes were identified: 1) the exclusive breastfeeding journey, 2) the challenge of breastfeeding exclusively, 3) breastfeeding in the 21st century. The mothers intended to exclusively breastfeed for six months. While they overcame many physical difficulties associated with breastfeeding, it was ultimately social complexities that provided the greatest challenges and influenced their decisions to cease exclusive breastfeeding. These included the introduction of solid foods before the recommended time of six months, and the perceived disapproval of breastfeeding in public. Noticing many differences in opinions and recommendations regarding breastfeeding, the mothers began to desire autonomy in their mothering, describing public comments and opinions as unwanted and judgemental.

Conclusion. This qualitative reflection contributes a nuanced understanding of the breastfeeding journey between two and six months, deepening our understanding and enabling the development of appropriate strategies and support for increasing the duration of exclusive breastfeeding, as well as direction for continued research.

Keywords: Exclusive breastfeeding, breastfeeding intentions, breastfeeding in public, breastfeeding support, solids introduction, interpretative phenomenological analysis, Australia, evidence-based midwifery

Background

Exclusive breastfeeding is defined as breastmilk only, with the exception of oral rehydration solution, vitamins, minerals or medicines (American Academy of Pediatrics, 2012). The WHO recommends mothers exclusively breastfeed their infants for the first six months of life to achieve optimal growth, development and health (WHO, 2011). Thereafter, the recommendation is to introduce nutritious complementary solid foods and continue breastfeeding up to the age of two years or beyond. In Australia, breastfeeding initiation rates are high (92.3% at birth), but the continuation is low, with only 17.6% of mothers exclusively breastfeeding for six months (Australian Bureau of Statistics, 2013).

Suboptimal exclusive breastfeeding durations are also observed in other developed countries: at six months, 26% of Canadian mothers are exclusively breastfeeding, with 19% in the US, 17% in Denmark, and only 1% in the UK (WHO, 2016). Given the important benefits of exclusive breastfeeding (American Academy of Pediatrics, 2012; Burns et al, 2012), low exclusive breastfeeding rates present

as an important public health issue.

Previous research regarding the longevity of exclusive breastfeeding has focused on identifying factors that hinder the continuation of exclusive breastfeeding in the early postnatal period (Lewallen et al, 2006; Bailey et al, 2004). Reasons for cessation in this birth to two-month period generally include difficulties such as insufficient milk supply and painful breasts or nipples, rather than maternal choice (Redshaw and Henderson, 2012; Lewallen et al, 2006). In Australia, the time between two and six months has been identified as the largest decline in exclusive breastfeeding rates (Australian Bureau of Statistics, 2013), yet interventions and research during this period is scarce. Exploring the personal and social meanings of exclusive breastfeeding, and what influences a mother to cease exclusive breastfeeding prior to six months, will contribute to identifying better support for continuation of exclusive breastfeeding for the WHO's six-month recommendation (Brown and Lee, 2011).

The aim of this qualitative study is to describe and interpret the experiences of first-time Australian mothers

who intended to exclusively breastfeed for six months, did so for at least two months, but ceased before six months. By focusing on the specific experience of exclusive breastfeeding (Charlick et al, 2016; 2015), in a culture where it is not the norm, this study provides a nuanced understanding of this major life experience along with a detailed, idiographic and in-depth analysis of how the participants made sense of their intended exclusive breastfeeding journey.

Methods

Interpretative phenomenological analysis (IPA) (Smith et al, 2009) was used to gain an in-depth qualitative understanding of the experience of breastfeeding for five Australian women. IPA's epistemological roots are in phenomenology and hermeneutics, and the method is ideographic, where each case is examined in great detail as an entity on its own before a move to more general claims (Smith et al, 2009). IPA seeks to understand the 'lived' experience of the participants with the focus on making sense of people's ways of thinking, their motivations and actions (Smith et al, 2009). With a small number of participants aiming at depth rather than breadth, IPA studies reveal something of the experience of each individual, and explore in detail the similarities and differences between each case, therefore, it is fitting to utilise when examining women's breastfeeding experience (Charlick et al, 2016).

Participants

Five participants were purposively identified to gather a homogenous group of women (Charlick et al, 2016; Smith

and Osborn, 2008). The women responded to a community advertising flyer asking for first-time mothers with babies aged between six and 12 months to volunteer for a study of their breastfeeding experiences. The first five women that met the inclusion criteria were invited to participate (see Figure 1). After an initial telephone conversation where the first author, introduced as a midwife and a researcher, discussed what study participation would entail, a convenient time was arranged with each woman to meet in a private room in a health service centre in metropolitan South Australia.

Ethics

This research was approved by the women's and children's health network human research ethics committee (HREC) (HREC/14/WCHN/008) and the University of South Australia HREC (0000031997) in early 2014. The usual research ethical considerations were adhered to, including consent to have the interviews recorded and the ability to cease participating at any time.

Data collection

Data were collected in mid-2015 through face-to-face, semi-structured interviews, each lasting up to one hour (range: 35 to 57 minutes). The women were recruited two weeks before the time of the interview, by which stage each baby was aged between seven and 12 months. The women were asked to talk as broadly as possible about their exclusive breastfeeding experience, and responded to open-ended questions including: 'What are your general thoughts about breastfeeding?' and 'What has breastfeeding been like for you?' Further open-ended prompts included: 'Can you tell me a story about why you wanted to breastfeed?' and 'What do you think other people think about breastfeeding?' The interviews were recorded digitally and transcribed in full by the first author.

Data analysis

Data were analysed using IPA's flexible seven-step process, described by Smith et al (2009). Analysis began with a close interpretative reading of the first case where initial responses to the text were annotated in one margin. These initial notes were translated into emergent themes at one higher level of abstraction and recorded in another margin. Connections and recurrent patterns were then identified across the emergent themes for the first case, clustering similar themes together under a descriptive label (higher-order theme), which conveyed the conceptual nature of the themes therein. This process was repeated for each of the five participants. Following analysis of each case, cross-case patterns were established and documented in a master theme table for the group. All researchers reviewed and audited the themes to ensure they were grounded and well represented in the transcripts. A reflective journal was also kept where personal experiences, preconceptions and biases were discussed within the research team. The master table was then transformed into a narrative account, supported by verbatim extracts from participants (see Figure 2).

Figure 1. Participant inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
A first-time mother	A mother whose baby required level two or three nursery care (special care or intensive care)
Birthed at 37 weeks' gestation or greater	
Had a live, singleton baby aged between six months and one year	A mother with any kind of disability that would alter physical functioning as a parent (for the sake of a homogenous sample)
Intended to exclusively breastfeed	
Exclusively breastfed for a minimum of two months but ceased exclusive breastfeeding before six months	A mother with a past history of breast surgery (as this can affect milk supply)
Able to understand and communicate in English	
Able to provide informed consent	

Figure 2. Overview of the higher-order themes/subthemes

The exclusive breastfeeding journey	The challenge of breastfeeding exclusively	Breastfeeding in the 21st century
Intending to exclusively breastfeed	Inconsistent professional advice	The public debate on breastfeeding
Experiencing breastfeeding difficulties	The influence of peers	Keeping private but needing support

Findings

Five mothers completed the research. They were all married and of a Caucasian background. All intended to exclusively breastfeed for six months, and did so for at least two months (see Figure 3).

Three higher-order themes were identified, including six subthemes (see Figure 2). The mothers all shared the view that breastmilk was best for their baby, and they intended to exclusively breastfeed for six months. Over time however, the mothers were influenced by social factors, especially those regarding the perceived disapproval of breastfeeding in public and the early introduction of solid foods.

The exclusive breastfeeding journey

The first higher-order theme describes exclusive breastfeeding intentions and the difficulties associated with breastfeeding. The mothers desired to exclusively breastfeed, but did not anticipate breastfeeding to be as difficult as it was. Despite this, they sought help and navigated breastfeeding difficulties and social challenges to the best of their ability.

Intending to exclusively breastfeed

The mothers believed that breastmilk was “best” for their baby, explaining it as “complete food” full of vitamins and nutrients. Conversely, formula was considered more cautiously. Elle commented:

“You hear all the things that breastmilk is the gold of feeding, and that formula has chemicals and whatever in them.”

Breastfeeding was something the women intended to do from childhood. They linked breastfeeding with their image of motherhood and spoke about a commitment to breastfeeding their babies, as explained by Mae:

“I was adamant that I really, really, really wanted to breastfeed... I also felt like it was a bit of my right to be able to do it, so I was going to put whatever effort in to be able to do it.”

The desire to breastfeed was enhanced during their pregnancies through breastfeeding education and hearing public health messages around breastfeeding. As voiced by Tara, all women mentioned the breastfeeding slogan:

“Breastfeeding for six months gives them a good start.”

Jamie also discussed how her positive breastfeeding attitude and confidence set her up for longevity with breastfeeding:

“My midwife said to me, ‘are you going to breastfeed?’, and

Figure 3. The participants

Name	Age	Gestation at birth (weeks + days)	Mode of delivery	Duration of exclusive breastfeeding (months)
Mae	35	37	Planned LSCS	5.3
Elle	34	37	NVB	5
Tara	32	40+2	Ventouse	5
Jamie	25	38+3	NVB	4
Bree	29	41	LSCS	4

Key: LSCS = lower segment caesarean section; NVB = normal vaginal birth. Definition of exclusive breastfeeding = breastmilk only, with the exception of oral rehydration solution, vitamins, minerals or medicines (WHO, 2011)

I said, ‘ah, I’m going to try’, and she goes, ‘no, you’re either going to not do it, or you’re going to tell yourself you can do it, because this trying business is sort of that in between, whereas if you focus everything on that you can do it, you are going to be able to do it, and you will persist’. So I had that attitude. Knowing that I can do it, not I’d like to do it.”

Experiencing breastfeeding difficulties

The mothers were aware exclusive breastfeeding could be challenging, yet still expected it to be easier than experienced, considering breastfeeding as “natural”. Elle explained:

“I just thought that they’d come out and they’d just know what to do... I think because I see it as something that’s natural, I just would have thought it would have been an easier thing to do.”

Each mother experienced different levels of pain, exhaustion and isolation associated with breastfeeding. Bree’s baby struggled to latch on and she routinely used nipple shields to reduce nipple pain. Jamie’s baby was extremely unsettled and was later diagnosed with gastroesophageal reflux disease (GORD). Tara had reoccurring blocked milk ducts and mastitis, and Mae explained:

“There were times where I would sit for an hour and a half in tears, with bleeding nipples.”

Overcoming these physical concerns, however, was less complex than managing the social norms and expectations around the continued stigma of exposing one’s breasts while breastfeeding in public. This concern was central to each woman’s breastfeeding journey and ultimately affected the breastfeeding experience. Elle discussed being constantly aware of the stares from onlookers:

“You can see them kind of staring at you, going ‘why are you out, why are you feeding in public?’”

The trend of covering a baby’s head during breastfeeds appeared to be more socially acceptable, however, Elle could not agree with it for herself:

“Breastfeeding out in public and covering the baby’s head, I just don’t agree with. I just think we don’t cover our heads

when we eat, we don't go and eat our food in the toilets. Everyone has this perception of breastfeeding, as you know, the mum's there with her boobs out, latching her baby and everyone can see everything, it's not, you don't see anything, like there's girls walking through Marion [a shopping mall] with less clothes on."

Tara was initially apprehensive about breastfeeding in public, but found clothes that afforded her modesty, giving her confidence to breastfeed wherever she was:

"I found there was a good range of clothing available so you could still feed and no one really saw anything, and if people saw it, it's not the end of the world, it was me feeding her it wasn't me exposing myself to, you know, get some kind of attention."

Mae called public breastfeeding a "controversial subject", and although she demand-fed, which necessitated feeding in public, she considered her breasts a private and sexual part of her body, so covered herself anyway:

"I'm happy to breastfeed in public, but I'm also not happy to just have my boob hanging out, because it's still my breast, it's still part of my body, it's still a sexual part of my body, and I don't actually want strangers seeing my breasts... so if I was to breastfeed in a public place, I would be discreet."

Jamie likewise wanted to be covered, but the intention came more from a self-conscious body image, "nobody needs to see that". Most of the time, Jamie fed in a parent's room, though recalled feeling comfortable breastfeeding among her mothers' group of friends. Breastfeeding in a group appeared to remove some of the unwanted public glances away from her, and provided confidence in their togetherness, as breastfeeding would be expected within a mothers' group:

"The girls and I were quite happy to sit right at the back corner of San Churros [a café], and I mean we weren't flashing everybody, and people sort of knew that we were a mothers' group and could see that we were all doing it, so it was comfortable and I was around people I knew, and we were all doing the same thing, um, but most of the time I'd go and find a parent room, and do it in there... It's because it's my body. Not everybody needs to see that... My body... My boobs... My stretch marks, and everything else, they just don't need to see that..."

Bree received months of ongoing assistance from a private lactation consultant to help with breastfeeding attachment problems. With her baby constantly "pulling off and back on again," Bree had an acute awareness of her breasts being seen by others. In an attempt to maintain exclusive breastfeeding, Bree decided to breastfeed solely at home:

"I didn't like being in public at all, I felt like everyone was watching me, and I didn't feel right, I always had to go home and feed."

The women spoke of the tension between their commitment to "breast is best" and the social expectation to either not breastfeed in public or breastfeed discreetly so one's breasts could not be seen. Although the mothers navigated this norm by how and where they chose to breastfeed, by four months Bree decided to stop driving home to exclusively breastfeed, and moved to formula. She persisted with breastfeeding until then, but the combination of getting "half naked" with seeing

her daughter struggle to latch on, resulted in Bree becoming unhappy and stopping breastfeeding:

"I was happy to give her a bottle in the end. It [breastfeeding] just wasn't right for both of us. I didn't feel like I was enjoying it very much, and she wasn't happy feeding off of me. It was OK up until the four months, and then, yeah, I was ready to stop. I sort of pushed it out because I wanted to keep going, but it just didn't feel right... I felt more comfortable giving her a bottle. It made her happy, made me happy."

Bree explained that breastfeeding was "too hard for both of us," and began questioning the quantity of milk her daughter was receiving:

"When she was pulling on and off it was hard to tell if she was getting a couple of sips or..."

This decrease in confidence to breastfeed was then reflected in Bree changing her intention of breastfeeding duration from exclusive for six months to "just for as long as she needed".

The challenge of breastfeeding exclusively

The second higher-order theme describes confusion regarding the definition of exclusive breastfeeding and the influences around the right time to introduce solid foods. Each mother interpreted the definition of exclusive breastfeeding slightly differently, but essentially all held the view that it included breastmilk only and no formula. Unsure of where to categorise solid foods, however, the mothers considered the conflicting professional advice they were offered, while also being influenced by other mothers who introduced solids prior to six months.

Inconsistent professional advice

The mothers received varied professional advice on the best time to introduce solid foods. Paediatricians appeared to be in favour of starting solids before six months, claiming benefits to babies' health. At seven weeks postpartum, Mae recalled:

"The paediatrician recommended me to give her yoghurt at seven weeks because she had colic."

Mae believed that seven weeks was too young, so "didn't really pay much attention to that" and continued exclusive breastfeeding. Although not as early as seven weeks, Elle was also told by a paediatrician to start solids before six months:

"They don't get everything from the breastmilk once six months comes... and if you introduce food too late, then they don't chew."

Professional advice during this time began to influence the mothers' decisions regarding the best time to introduce solids. "You don't want to try too late," Mae's paediatrician reinforced. For Jamie, by four months, her unsettled baby was diagnosed with reflux and her paediatrician advised starting solids in an effort to reduce vomiting:

"I was planning on six months, but after seeing the paediatrician and him recommending we start at four months, just to get something heavier in her stomach to try and stop this vomiting before we tried the Gaviscon and the thickener, so we trialled that."

Jamie ceased exclusive breastfeeding due to the introduction of solids. Of note, however, was that she still considered herself an "exclusive breastfeeding mother", claiming:

"I think [solids are] a different category because we get to start solids early due to reflux and weight gain."

The mothers also discussed education and advice provided by the local child and family health service (CaFHS), a government-funded organisation offering services and programmes for parents, children and youth in South Australia. Tara recalled:

"When you come to your CaFHS meetings, the recommended age for solids is six months."

Despite this, each mother also discussed receiving additional advice from CaFHS regarding cues or "signs" that show a baby is ready to begin solids. One sign was specifically remembered by all, which Mae explained as:

"Looking at us eating and grabbing for the food and trying to put it in her mouth, I can't remember what all the other signs were..."

These "signs" became key influences as the mothers interpreted the CaFHS education as "advice" to start solids at six months, unless their baby showed signs of readiness prior to then.

The influence of peers

Although at four months, Bree had introduced formula and Jamie began solids (see Figure 2), Mae, Elle and Tara still intended to exclusively breastfeed for six months. However, with confusion between their initial understanding of the optimal duration of exclusive breastfeeding and the newly received recommendations from health professionals regarding solids, the mothers turned to their friends for advice. Tara explained that she mostly took advice from her "mum friends" as their opinions came from recent experience:

"The people that influenced me were my friends with kids. I found that they gave the best information, and I found that they were the best support."

The mothers found that their friends were beginning to introduce solids prior to six months. They also realised that many other parents had begun solid foods after four months. Remembering CaFHS's teaching regarding an "early" start with solids if the baby had met the developmental milestones, the mothers began linking child development with solids and did not want their baby to be behind. Elle explained:

"I thought it [solids] would be around six months but I just introduced food because I didn't want her to be behind."

When prompted further about this, Elle admitted:

"Peer pressure! That actually sounds stupid when you say it out loud, that sounds really stupid. But in the beginning, when you don't know what you're doing, and you see other people doing it..."

Seeing other parents offer solid foods drew the mothers into "competition" where solids introduction was indicative of infant development and no one wanted their baby to appear behind in reaching their milestones. Influencing the mothers to rethink their original exclusive breastfeeding plan, Tara said:

"I was thinking, I'm not sure how much difference there is between [exclusively breastfeeding for] five and six months... so I thought, I'll just give [solids] a go."

The women weighed up their initial exclusive breastfeeding

plan with professional advice and the experiences of parents around them, and ultimately decided on their own dates to introduce solids. Of interest, both Elle and Tara understood that the commencement of solids changed their breastfeeding category away from exclusivity, though Mae continued to refer to herself as an "exclusively breastfeeding mother" as her baby had not received formula. Despite this variation of understanding the definition of "exclusive breastfeeding", once the mothers had made a decision to commence solids, they showed confidence in their decision and disregarded other people's comments.

Breastfeeding in the 21st century

The final higher-order theme describes the context of breastfeeding in the 21st century for these women. Ambiguity and debates around infant feeding were experienced and necessitated a need for the mothers to withdraw from the public debate and conversation, leaving them with less support than they desired.

The public debate on breastfeeding

The women realised every mother was on her own infant-feeding journey, with differing values and experiences around breastfeeding. The "breast is best" message was known by all of the women and influenced them in different ways. Jamie, whose baby had GORD, felt settled in knowing that breastmilk was best for her baby, even though there were options of anti-reflux formula. Jamie predominantly expressed her breastmilk and gave it to her baby in a bottle so she could add a milk thickener and also monitor the quantity of milk her baby received, who was starting to lose weight. Explaining the effort she put into expressing breastmilk for her baby and her awareness of the "breast is best" health message, Jamie discussed her struggle in being seen as giving formula to her baby and taking "the cheats way out":

"I feel like I'm being judged sometimes, because it's, I know what's in the bottle, but do they know what's in the bottle?! You sort of get these people that are breastfeeding, and they're like, 'you're just bottle feeding and like you're taking the cheats way out'..."

Interestingly, this account of "being judged" was perceived as coming from breastfeeding mothers. Over time, however, as Jamie found confidence in her decision to give bottled expressed milk to her daughter, people's judgement and looks became less important to her:

"I just ignore them, they can think what they want to think, but I know I am doing what's best for her."

The women acknowledged the need for all mothers to feel supported and the importance of eliminating the perception of judgement. Elle explained the unacceptable nature of judging another mother:

"I don't think you can ever judge, no one should ever judge, because you don't know anyone's situations. 'Formula mums', for a lack of a better word, I think you get some mums that are breastfeeding that think they're lazy, but you don't know their situation, what if they couldn't?"

The women in this study held a belief that breastmilk was "best". Yet despite this opinion, they reported not discussing

their personal beliefs in conversations with other mothers. Elle reflected on her values around breastfeeding and attempted to convey the difference between the intentions she set for herself and the expectations she had of others:

"I think formula should be the last resort personally, but from someone that could breastfeed, I don't think that's my place to say. I think everyone should try to breastfeed, but I would never actually say that to anyone, that's just my opinion. Everyone is entitled to their own opinion, but I'm not going to push that on to someone else."

The women saw a link between sharing personal opinions and judgement, and suggested that it might be better for people to keep their opinions private. Mae explained that she did not feel any opinion is warranted unless asked for, and that the feeling of "being judged" is often linked with the passing of an unsolicited opinion:

"I think giving unwanted opinions is a judgement... When someone comes up and says to you, 'well, I did this blah blah blah,' I think that means they're trying to say, 'what you're doing is not ok, I think you should do it this way'."

Keeping private but needing support

The mothers resolved that they wanted autonomy and privacy in their infant-feeding decisions and parenting role. They knew the distress caused by unsolicited opinions and judgemental remarks, so chose to withdraw from the public infant-feeding debate. However, with this decision some of the mothers found themselves withdrawing from the broader support structures they had utilised earlier. Emotional and physical support from the women's partners, however, was still experienced, and was reported to contribute to the women's confidence and desire to continue exclusive breastfeeding. Speaking of her husband, Mae said:

"He was very supportive and helped me ensure we didn't go on to formula, he was a big advocate for it [breastfeeding], I don't know where he got it from, but he was just so excited that I was able to breastfeed... and so the nights where it was very difficult, he was the one making sure that I had water and was comfortable, gave me food and did everything to try and calm me down to make sure that she was still getting milk."

Although some of the partners were strong advocates for continued breastfeeding, others played a more general encouragement role, supporting the mothers to make the infant-feeding decision for the family. Tara said of her husband:

"He was happy to support me with whatever decision I made."

Similarly, Bree's husband was:

"Happy as long as I'm happy. He was happy to do what was best for her and for me."

In addition to partner support, Mae revealed that the relationship with her mother gave her immense support. It was not necessarily because of the connection she had with her mother, but due to her mother's attitude and actions regarding breastfeeding. Mae explained that her mother was able to separate her own breastfeeding history from Mae's breastfeeding journey and did "not push her views whatsoever on to me". Mae interpreted this kind of help as "very supportive".

The mothers in this study defined support as help and

encouragement to achieve their own goals, rather than receiving opinions about other people's beliefs. Mae concluded:

"What I would like to see in the future, is that whatever people's decisions are with their parenting, that they are supported... because the best thing ever is to have an amazing mother that can look after her baby."

For these mothers, once they felt settled in their infant-feeding decisions, their confidence increased and they were able to step outside the perceived "judgement circle". Believing they had made the best decision for themselves and their baby, these mothers were able to harness the positive supports in their life and overcome many physical barriers to continued breastfeeding. Although the social norm of introducing solid food prior to six months shortened their exclusive breastfeeding journey, all except Bree continued to breastfeed past six months, enjoying the health and emotional breastfeeding benefits.

Discussion

This study provides insight into the experiences of women who began their breastfeeding journeys with the intention to exclusively breastfeed. These mothers planned to breastfeed for six months, believing that breastmilk was the best for their baby and having some understanding around the importance of exclusive breastfeeding. Yet all of these mothers ceased exclusive breastfeeding before their anticipated six months. It was clear that the mothers in this study found breastfeeding more difficult than expected. They described the physical difficulties associated with breastfeeding, however, it was not these challenges that affected their longevity in breastfeeding. They all identified a complex social narrative that ultimately influenced their decision to cease exclusive breastfeeding before six months, which included the stigma associated with breastfeeding in public and confusion around timing of the introduction of solid food. They also spoke of feeling judged throughout their breastfeeding journeys and identified that this was unhelpful.

WHO (2011) recommends mothers exclusively breastfeed for six months, however, literature, media and even health professionals confuse this message through advertising and conflicting advice. For example, in Australia local supermarkets stock leading baby food brands claiming to be suitable from four months of age. The paediatricians discussed in this study also appeared to advocate starting solids prior to six months, often linking food to medicinal treatment such as reducing reflux. Similarly, CaFHS encourages mothers to follow the developmental "signs" of their babies when considering the timing of introducing solids (Child and Youth Health, 2017). For the mothers in this study, this inconsistency, coupled with their own peers introducing solids prior to six months, created uncertainty around the best time to introduce solids.

Inconsistent advice has been recognised as problematic for parents with many studies raising this as an area in maternity care that requires ongoing attention (Allcutt and Sweeney, 2010; Burns et al, 2010). In relation to exclusive breastfeeding, the timing of when solid foods should be introduced to infants has become a contentious issue that appears to cause

concern and confusion for parents and professionals alike (Allcutt and Sweeney, 2010). Prior to 2001, the WHO (2001) recommended that infants be exclusively breastfed for four to six months. However, after a systematic review published in 2002 (Kramer and Kakuma), this was amended with a global recommendation that solid foods should not be introduced before six months. Despite this change in recommendation occurring over a decade ago, and supported again in the latest systematic review of evidence on breastfeeding (Kramer and Kakuma, 2012), Australia's most recent reported median age for introducing solids is 4.7 months (Australian Institute of Health and Welfare, 2011). Considering the disparity between global recommendations and local advice, and with the influence of cultural norms, it is not surprising that the mothers in this study did not reach their goal of exclusively breastfeeding for six months.

Breastfeeding in public and an emphasis on the sexuality of breasts were also central to the mothers' conversations as they discussed their breastfeeding journey. In Australian culture, there is low acceptance for women breastfeeding in public (Australia Health Ministers' Conference, 2009). The negative reactions of others towards breastfeeding mothers have caused women nationwide to feel vulnerable or embarrassed, impacting on the number of women publicly breastfeeding (Sayers, 2014; Boyer, 2011; Hauck, 2004). The women in the current study discussed being aware of their body being visible during breastfeeds, and consequently utilised culturally appropriate ways to breastfeed in front of others. This is a common response (Leeming et al, 2013; Wolf, 2008). By wearing breastfeeding-designed clothes, expressing breastmilk into a bottle, or returning home to feed, the mothers for the most part were able to navigate social norms while persisting in giving their baby exclusive breastmilk for as long as they felt they could. This conflict between a community belief that breastfeeding is best while socially disapproving of women publicly breastfeeding (Geddes et al, 2013) contributes to the complexities of exclusive breastfeeding.

Overall, stress with breastfeeding in public, inconsistent health professional advice, misleading advertising, and the influence of other parents commencing solids before six months, present as key influencers in shortening the intended duration of exclusive breastfeeding for the mothers in this study. It would seem that for these women there is an unclear dialogue around exclusive breastfeeding. There is a need to clarify the importance of exclusive breastfeeding for six months and, importantly, that the duration of exclusive breastfeeding is significant. For example, exclusive breastfeeding for six months has several advantages over three to four months, such as less morbidity from gastrointestinal infections (Kramer and Kakuma, 2012). Currently, it would appear that this evidence is not well disseminated, and parents are receiving incorrect and inconsistent advice from the health professionals responsible for informing them of optimal infant-feeding practices (Allcutt and Sweeney, 2010).

Future research and health promotion messages addressing exclusive breastfeeding should clearly articulate the benefits of exclusively breastfeeding for six months (including factors other than health impacts) (Brown,

2016), clarify the recommendations around the appropriate timing of introducing solids, and prepare women for the social complexities that challenge exclusive breastfeeding. Additionally, advocating for more accurate food advertising labels in Australia is also warranted, as current laws do not prevent retailers and resellers from promoting the commencement of solids prior to six months (Standing Committee on Health and Ageing, 2007).

A further finding in this study was that the women recognised that, overall, parenting is a public journey, which they often felt was judged by others. This was experienced through unwanted opinions and/or advice and is supported by previous literature that acknowledges how women can feel judged when they could not, or chose not to, breastfeed (Benoit et al, 2016; Byrom, 2013), even to the point of feeling labelled as a 'bad mother' (Sheehan and Schmied, 2011: 63). The mothers recalled many situations where other people would give advice or tell them how to feed "correctly", and in order to step outside of this "judgement circle", these mothers withdrew from conversations and debates around infant feeding; not surprising as it is well established that when breastfeeding support is offered to women, the duration and exclusivity of breastfeeding are increased, as are confidence levels. The challenge is in finding the right support (Schmied et al, 2011; Dykes, 2006). For the women in this study this required people to first understand their choices and goals before offering advice, and being aware that offering opinions could be interpreted as judgemental.

Finally, it is important to reflect on the fact that these mothers all began their journeys with a strong intention to breastfeed exclusively for six months. Alongside a woman's confidence (or self-efficacy) and social support, breastfeeding intentions have been depicted as a key predictor of both the initiation and duration of breastfeeding (Meedya et al, 2010). In this study, intention certainly gave these mothers the motivation to exclusively breastfeed past two months, but social challenges and perceived judgement appeared to disrupt this intention and shorten their length of exclusive breastfeeding.

Conclusion

For over a decade, the WHO has recommended exclusive breastfeeding for the first six months of life, yet Australian women and those from other developed countries continue to fall well short of this target. Although the mothers in this study all intended to exclusively breastfeed for six months, inconsistent professional advice, issues with breastfeeding in public and feelings of being judged, as well as the cultural norm to introduce solid foods at around four months, affected them to such a degree that they stopped exclusive breastfeeding. By presenting a detailed analysis of the exclusive breastfeeding journey for first-time mothers in Australia, this study reflects the sharp cessation of exclusive breastfeeding between four and five months. Although the results cannot be transferred to a larger population due to the small yet appropriate group size for an IPA study, the findings do favour depth of understanding, and reveal nuances in the exclusive breastfeeding journey, closing the gap between established broad knowledge principles and in-

depth individualised findings from a local context. Future research is needed to further explore the exclusive breastfeeding journey to six months in other locations in Australia, focusing on professional knowledge and advice given to mothers around exclusive breastfeeding and solids. Research exploring cultural norms and social expectations

to enable support for mothers to reach their exclusive breastfeeding goals, as well as to increase the longevity of exclusive breastfeeding into Australia's future, is also needed. This study demonstrated the importance of understanding women's journeys as they navigate the complex social norms around breastfeeding.

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Consideration of a non-dichotomous conceptual framework of childbirth

*Susanne Darra*¹ *PhD, MA, BSc, PGCE, RM.*

Associate professor, College of Human and Health Sciences, 36 Haldane Building, Swansea University, Singleton Park, Swansea, SA2 8PP Wales.
Email: s.darra@swansea.ac.uk

Abstract

Background. The majority of models of midwifery care discussed in current professional and academic literature in the UK are presented as being dichotomous in nature. These are most commonly divided into ‘normal’ / ‘abnormal’, ‘natural’ / ‘medical’, and ‘pain relief’ / ‘working with pain’. Research into childbirth is also commonly separated into research with midwives or research with women.

Aim. To discuss current models of midwifery care with a view to conceptualisation of a new, non-dichotomous, theoretical framework for midwifery care and childbirth.

Design. This is a discussion paper reviewing current models of midwifery care and critically appraising their components.

Data sources. The main data source is literature related to models of midwifery or childbirth from 1964 to 2017. The paper is also informed by data from the author’s 2008 UK qualitative study with 21 new mothers and their 16 attending midwives, and influenced by the author’s 35 years of experience as a registered midwife in the UK.

Outcomes. Dichotomous midwifery models are shown to be unhelpful to explain the contemporary complexity of childbirth in the western world. It is hoped that this discussion paper will prompt debate in the profession and contribute to further theory/model development.

Conclusion. It is timely to reconsider models for midwifery and birth to more satisfactorily explain the nuanced experiences and expectations of labouring women and their midwives. Therefore, a future theoretical paper is planned, where an in-depth, description of a new non-dichotomous, conceptual model will be proposed for consideration by midwifery colleagues.

Key words: Anthropology, midwifery, nursing models, nursing theory, nurse roles, evidence-based midwifery

Introduction

Most of the commonly cited models of midwifery practice in the UK and other western literature are dichotomous in nature. They often relate to doctors, obstetric nurses or midwives working in obstetric practice under the direction of protocols and strict guidelines in specialist obstetrics units on one side, and set this in opposition to midwives working in midwifery practice in the community or small midwife-led units on the other (van Teijlingen, 2005).

Research that explores the experiences of women is also commonly separated from that which considers the experiences of their attending midwives. However, research that involves women and their midwives demonstrates that they appear to have rather different perspectives on labour and birth (Powell-Kennedy et al, 2004; Proctor, 1998; Bradley et al, 1983).

A criticism of dichotomous approaches when researching and explaining childbirth and midwifery is presented here, supported by the author’s research findings (Darra, 2016; Darra and Murphy, 2016). The discussion proposes that a less dichotomous approach might be more appropriate to explain childbirth and midwifery and offers a conceptual framework for such an approach. It is perhaps of particular use in the UK, but may also have international significance, since countries with less developed midwifery services may follow those that are considered to be more developed, such as the UK.

Background

Throughout the late 20th century obstetric and midwifery practice in developed countries generally became set in

opposition to each other and were analysed through dichotomous theories and models. The move to medicalise birth and transfer it from the home to the hospital in the UK, for example, gathered pace in the 1970s (Towler and Bramall, 1986) with models of midwifery and obstetric care emerging and proliferating in the 1980s and 1990s (Bryar and Sinclair, 2011; Davis-Floyd, 1987).

While many nursing theories (and nurse/midwife theories) were developed in the 20th century, largely in the US (Marriner-Tomey, 2002), theories and models for midwifery, especially in the UK, have not progressed to the same level of sophistication (Bryar and Sinclair, 2011). Instead the theories simply set the medical (technocratic) model of childbirth against a midwifery (holistic/social) model (van Teijlingen, 2005; Leap and Anderson, 2004).

The dichotomous nature of models and paradigms in healthcare is thought to have its roots in ancient Greek thinking (Wagner, 1994; 1986; Helman, 1985) and from the work of philosopher René Descartes (Davis-Floyd, 1987). As explained by the sociologist Edwin van Teijlingen (2005), such models have been useful for enabling the study of people who have internalised a specific outlook on life, or exploring what he refers to as taken-for-granted approaches to aspects of society.

As van Teijlingen (2005) stated, such models would seem to be useful when exploring situations or people who operate at each end of two opposites. However, such a dichotomous approach is potentially problematic in terms of the personal and unique situation of childbirth. In her study in an early birth centre in California, midwife Ellen Annandale summarised the situation as follows: ‘Popular

concepts of pregnancy and childbirth tend to juxtapose the ideal-typical natural and medical models, generating an image of childbirth as precarious, as potentially dangerous, and at the juncture of the pathological and the normal. [However] the universe of meaning at the cultural level is diffuse and carries a double (and malleable) message: while the naturalness and normalcy of pregnancy are upheld, edicts about the need for back-ups such as fetal monitors and surgical intervention, and a concern for “risk” abound. In consequence, despite a clear choice of the natural, midwifery model by women in the current research – a choice against the medical model – the women’s expectations of birth were never fully independent of obstetrical notions of risk. These expectations and concerns were also an important part of what the midwives had to manage’ (Annandale, 1988: 99).

One is therefore led to wonder how useful ‘normal’ versus ‘abnormal’, ‘natural’ versus ‘medical’ and ‘pain relief’ versus ‘working with pain’ dichotomies are in everyday practice. As early as 1984, professor of bioethics Raymond De Vries (1984) pointed out that most midwifery practice was unlikely to be at one end of a spectrum or another (practising in a completely obstetric or completely holistic way). This seems to make sense, and it was evident in the stories that were told in a more recent UK study that midwives do not commonly practise in one or other way; instead they appeared to be generally non-technological (non-medical) in orientation but also used some aspects of technology (Darra, 2016; Darra and Murphy, 2016).

This finding reflected the views of De Vries and of van Teijlingen (2005: 4) who provided a logical criticism of dichotomous models: ‘In practice, a whole range of combinations of the two ways of operating can be seen. In terms of a scale from a total obstetrical practice to a total midwifery practice, all working practice is somewhere in between.’ One such model that is widely referred to in midwifery literature is the ‘pain paradigms theory’ regarding pain in childbirth, as proposed by Leap and Anderson in 2004.

The use of dichotomous models in relation to childbirth is widespread but has not been without criticism. Internationally renowned midwife and birth activist Verena Schmid (2011) provided a convincing critique which included reference to how the only way to make births ‘healthy’ is to integrate the dichotomous models that currently exist. Schmid (2011) noted that the models have been useful to explain the multifactorial and pervasive phenomenon of the medicalisation of childbirth, but she went on to propose that in the current climate of relying on dichotomous models it is particularly difficult to advocate and promote normal (physiological) birth.

Schmid’s position (2011) supported earlier proposals by UK midwifery professor Soo Downe (2004) who also recommended a move away from dichotomous models and towards the widespread application of a salutogenic way of being for midwives and the women they care for. Salutogenesis was an idea proposed by American sociologist Aaron Antonovsky (1987; 1979).

Schmid (2011: 147) also referred to his work suggesting

that one should refer to ‘healthy’ birth instead of ‘normal’ birth and stated that midwives need to: ‘Work towards accepting and practising care, which combines the physiological systems with appropriate medical care and which honours women’s needs and choices.’ This approach would seem to be very important from many perspectives including one offered previously by van Teijlingen (2005). He criticised the way in which dichotomous midwifery models led to an over-emphasis on the social aspects of birth as simply a normal, psycho-social and physiological process. Van Teijlingen (2005) went on to warn that if midwives continued to espouse this type of birth model, and women responded by wanting it, then the logical conclusion for strict adherents to it would be a renunciation of the need for any midwifery care in childbirth at all.

This potential problem was also noted by early researcher Damstra-Wijmenga in 1984 and it is particularly pertinent today in the face of rising incidences of ‘freebirthing’ (Shanley, 2018; 2012), in which women give birth at home without any health professional involved (NCT, 2011). Van Teijlingen (2005) recognises that a midwifery model that focuses too exclusively on the social aspects of birth, might logically ignore the biological (and occasionally pathological) facets of childbirth. Considering this, anthropologist Robbie Davis-Floyd suggested: ‘We can combine the best of what technological innovations we have to offer, whilst also embracing the wild beauty and instinctive power of the big bad wolf in the birthplace’ (Davis-Floyd and Cheyney, 2009: 17).

Women’s choices about how they want to give birth have also commonly been considered in a dichotomous format, setting interventionist delivery against physiological birth (Christiaens et al, 2013; O’Dougherty, 2013; Pilley-Edwards, 2005; Lazarus, 1994; Nelson, 1983).

Likewise for midwives and midwifery practice, it is logical to assume that many women’s needs, choices and experiences would not be completely interventionist or completely physiological. It is, therefore, reassuring that the current internationally-recognised framework for quality maternal and newborn care (Renfrew et al, 2014) appeared to signal a move away from a dichotomous way of thinking. The framework relates to women and their babies and calls on midwives to offer appropriate care for all childbearing women. Evidence from eminent thinkers in the field is further supported by empirical research findings to offer a new non-dichotomous way of considering midwifery and childbirth that might complement the framework of quality maternal and newborn care (Renfrew et al, 2014).

Data sources

Empirical data were drawn from findings from a small UK study, the ‘Normal birth stories study’, involving new mothers and their midwives (Darra, 2016; Darra and Murphy, 2016). The original aim of the study was to investigate how ‘normal’ childbirth is described by new mothers and their attending midwives. The study was approved by the local university and the local NHS ethics committee. It was qualitative, reflexive and narrative, using

in-depth, semi-structured interviews comprising the birth stories from 21 new mothers and their 16 attending midwives within six weeks of normal birth in hospital (by far the commonest birthplace of choice of women in the area of the study). These data reflect the experiences of women and midwives in the UK in 2008. In order to expand the discussion, the data are discussed in the context of a theoretical analysis of models of midwifery and childbirth in UK-based midwifery literature.

Discussion

None of the women in the ‘Normal birth stories study’ (Darra and Murphy, 2016) reflected only one side of any of the common dichotomous models of midwifery and childbirth. For example, the findings did not wholly reflect the pain relief paradigm, or the working with pain paradigm. Neither did they fit the ‘with institution approach’ or the ‘with woman ideology’, as proposed by Hunter in 2004. Nor did they match either the ‘medical’ or ‘social’ model, as described by van Teijlingen (2005) (see Table 1).

Instead, the women and their midwives valued non-intervention, an emblem of the midwifery or holistic model, at the same time as using various interventions, which are anathema to the midwifery or holistic model and characteristic of the medical or technocratic model.

The midwives and the women in the ‘Normal birth stories study’ (Darra and Murphy, 2016) seemed able to embrace the wild beauty and instinctive power of labour utilising what medicine offers, while being always aware of nature’s power in childbirth. The midwives and the women were able to ‘borrow aspects from both perspectives, despite the fact that, logically, they are mutually exclusive’ (van Teijlingen, 2005).

They also blurred the boundaries of Leap and Anderson’s (2004) pain paradigms. Women and their midwives told of how they wanted to cope with what was happening (the pain) while at the same time they requested and used some interventions including artificial rupture of membranes (ARM), and all the women used entonox (50% oxygen and 50% nitrous oxide) seemingly as a matter of course. Some of the women even talked of entonox and ARM as being natural. Women in labour in the UK are free (and encouraged) to seek information about and request any of the several forms of labour pain relief that may be available in their chosen birthplace and they have the right to refuse any that is offered or recommended (NMC, 2015; NICE, 2014; Parliament, 1998).

In the labour and birthing room, midwives care for women who are often experiencing pain and fear; both the women and the midwives are also potentially undertaking quite physically exhausting activities. During this time midwives are charged with caring for women as expressed

Table 1. Mapping findings from the ‘Normal birth stories study’ to commonly used dichotomous models of midwifery and childbirth

Two commonly cited dichotomous models of midwifery/ childbirth	(Leap and Anderson, 2004) ‘Pain relief paradigm’ ‘Working with pain paradigm’	
	(van Teijlingen, 2005) ‘Medical model’	‘Social model’
Findings from the ‘Normal birth stories study’ – Birth stories of 21 women and their midwives (Darra, 2016; Darra and Murphy, 2016)	Women chose to give birth in hospital Women did not generally value social support Women requested some interventions (such as amniotomy) Women requested analgesia at times All the women used entonox Midwives offered analgesia to all the women Midwives did not generally value social support Midwives used technological language	Women and their midwives valued ‘coping’ very highly All the women and many of the midwives valued ‘breathing’ as a coping mechanism Women often avoided analgesia Women saw the pain as useful/productive Women ‘listened to their bodies’ All the women and the midwives saw the births as normal despite several ‘risk factors’ Midwives supported women ‘listening to their bodies’ Midwives avoided giving analgesia

in their professional rules, standards and guidance and as set out in various midwifery philosophies, models and theories. Despite all these permissions, restrictions, instructions and guidance, it is the midwife who must decide how to care for each individual woman that they are faced with in each unique labour and birth. One might ask how midwives make these decisions and what use are models or theories of practice? In the case of the pain paradigms theory (Leap and Anderson, 2004) for example, there are two types of midwives, one that would offer all women pain relief as part of a menu of what is available and another type who would not offer pain relief for women who she believes are in normal labour (Leap and Anderson, 2004).

The women and midwives in the ‘Normal birth stories

study' (Darra, 2016; Darra and Murphy, 2016) were interviewed for a study that was specifically concerned with exploring ideas of normal, but it was during the data analysis period that a need to consider the utility of dichotomous models of midwifery and childbirth emerged. The participants in the study clearly demonstrated that they were coping with the challenges of labour and birth but they were able to seek and provide the help that the women needed. Women and their midwives were invited to take part in the study if the woman had recently given birth normally, according to the WHO definition of normal birth (WHO, 1997). However, during the study a third of the women referred to antenatal, labour and postnatal factors that involved increased maternal or fetal risks, which might have affected the definition of their birth as being normal. These included one woman with a bicornuate uterus and another having experienced a previous shoulder dystocia and a forceps delivery.

However, none of the women or the midwives referred to these issues when they were contacted to arrange the interviews. This apparent indifference towards risk factors by both the women and their midwives was unexpected when one considers the current ubiquitous perception of risk and fear in childbirth (Lavender et al, 2012; Nilsson et al, 2012). It appears that the midwives did not think that the risks involved would affect their definition of it having been a normal birth. They and the women also did not seem to consider these factors to be risks at the time of recruitment to the study.

This calls into question the problem of defining normal birth, which has been echoed elsewhere (RCM et al, 2007). However, the 'working with pain paradigm' (Leap and Anderson, 2004: 34) states: 'Women can cope with the pain of normal labour' and that a genuine need for pain relief is associated with "abnormal labour". Part of Leap and Anderson's (2004) 'pain-relief paradigm' also suggests that those midwives who make full use of modern technology in terms of pain relief do it because they feel they are being kind to women who should not have to suffer the barbaric nature of painful childbirth. This paradigm theory also refers to the personal discomfort of the midwives being in the presence of women in pain, which partially contributes to them offering pain relief (Leap and Anderson, 2004).

While this might be the case, being kind to women does not always relate to offering all the benefits of modern technology (which implies that midwives offer women all forms of analgesia as a matter of course, when trying to be kind). In contrast, the midwives in the 'Normal birth stories study' (Darra, 2016; Darra and Murphy, 2016) seemed to also be aiming to be kind to women when they did not give pain relief. Instead they recognised and promoted the women's own ability to cope and respected their reliance on themselves and their bodies.

This was particularly evident in one of the midwife's stories in which she was telling her story of caring for Rhiannon (a pseudonym). The midwife was very keen to avoid administering pain relief to Rhiannon. Instead, she

encouraged her strongly to stay in the birthing pool where Rhiannon was not permitted, according to hospital policy, to have opioid analgesia, even though she was asking for it. In this sense, the midwife appeared to be practising within the working with pain paradigm (Leap and Anderson, 2004).

However, all the women in the study, including Rhiannon, had entonox even though she said it was causing her to vomit. Throughout her story Rhiannon was clearly opposed to using pharmacological pain relief, but she also told of how, when in the birthing pool, she experienced pain severe enough to request something stronger than entonox for pain relief. While not all women would define the pain of childbirth as barbaric, it is a significant aspect of many women's childbirth experience and 'pain is whatever the experiencing person says it is, existing whenever the experiencing person say it does' (McCaffery and Beebe, 1989: 7).

Women must, therefore, be relied upon to characterise their feeling of pain and some will inevitably feel that it is barbaric (Kitzinger, 2006a). Midwives must, therefore, be able to respond appropriately to women's wishes when they are in pain. Being with people in pain on a regular basis, as midwives often are, may lead to them being desensitised to the pain that women express in labour; this has been reported in the literature (Proctor, 1998; Bradley et al, 1983). In contrast, it might lead to midwives feeling overly empathetic and anxious to relieve the pain, as suggested by Leap and Anderson in their pain relief paradigm (2004). However, the midwives in the 'Normal birth stories study' (Darra, 2016; Darra and Murphy, 2016) demonstrated that they were able to be with women in pain in labour but that at times they saw the need to agree to, and at times to offer, pain relief medication.

The findings from the 'Normal birth stories study' demonstrated very clearly that the women wanted to cope and the midwives wanted to help them cope. They also demonstrated that coping and helping was taking place in a context of understanding and accepting their situation according to their expectations and understanding of their own and others' narratives of birth (Darra, 2016; Darra and Murphy, 2016). The study suggested that Leap and Anderson's pain paradigms theory (2004) did not seem to fully explain the phenomenon that midwives and women in the study displayed – of valuing coping while also using some analgesia. A review of the literature relating to dichotomous models in midwifery and childbirth along with the findings from the 'Normal birth stories study' calls for a different explanation and this may be achieved by considering a new way of thinking about and explaining care in childbirth. This paper aims to achieve this with reference to an early North American theory alongside a consideration of salutogenesis (Downe, 2004; Antonovsky, 1979).

The need for help theory

North American nurse Ernestine Wiedenbach's work was influenced by an earlier theory on the nursing process, as proposed by American nurse theorist Ida Jean Orlando (1972), but her need for help theory was developed

inductively through observing practice and from her own working experience as a nurse-midwife (Wiedenbach, 1967). Wiedenbach stated that the goal or purpose of the midwife is to meet a woman's need for help. Her definition of this is: 'Any measure or action required and desired by the individual and which has potential for restoring or extending her ability to cope with the demands implicit in her situation' (1967: 6). Wiedenbach used the terms 'nurse' and 'nursing' in her writing, but as she was referring to her work as a nurse-midwife in the US, it clearly relates to midwives and midwifery in other settings (such as in the UK). She explained: 'Whenever a need for help exists, its presence may usually be suspected by behaviour – physical, emotional or psychological – which is different from the normal or usual pattern. The nurse who is perceptive will be aware of it. Perceptiveness thus is an attribute of nursing [midwifery]. The fact that a need is perceived, however, does not mean that it is met. First it must be identified. To do this requires skilled use of eyes, ears, hands and mind – eyes through which to perceive or look intently; ears with which to listen expectantly; hands with which to feel, touch or palpate sensitively; and a mind with which to understand and interpret the observation. Once the need is recognised and has been validated by the one whose need it is, appropriate action can be taken to meet it' (Wiedenbach, 1967: 353-4).

Wiedenbach's prescriptive theory was strongly influenced by the behavioural paradigm, which assumes that people seek to meet their own needs (McKenna, 1997) and developed throughout the 1960s and 1970s (Gordon et al, 2010; Marriner-Tomey, 2002; Bennett and Coldwell Foster, 1995; Raleigh, 1989). It relies on the nurse-midwife (midwife) observing that a need for help exists, provision of the help that is needed, potentially looking outside of her own skills and capabilities to provide the required help and then validation that the help provided was indeed helpful to the woman (Bennett and Coldwell Foster, 1995). If no need for help is observed then no help is required and none is given.

In the 'Normal birth stories study' (Darra, 2016; Darra and Murphy, 2016) help was either:

- 'Keeping the woman going' through self-help methods, water immersion, distraction or encouragement, as seen in several of the stories
- Offering entonox, as was apparent in all the stories in the study
- Offering and administering further analgesia as is evident in almost half of the stories.

Alongside considering Wiedenbach's theory of the midwife identifying a need for help, one may be led to wonder how the midwife can take account of risk factors and still work to enhance 'coping'. This might be addressed through a consideration of Antonovsky's idea of a sense of coherence within his theory of salutogenesis (Church et al, 2017; Schmid, 2011; Downe, 2004; Antonovsky, 1987; 1979).

The sense of coherence theory

The potential impact of this theory in midwifery emerged in the work of midwifery professor Soo Downe (2004)

and Italian midwife-researcher Verena Schmid (2011). It refers to both the woman and her midwife understanding the concept of risk factors, but also utilising the concept of salutary factors in a context of coherence to promote good health and coping (Schmid, 2011; Downe, 2004).

The stories told by the women and their midwives in the 'Normal birth stories study' (Darra, 2016; Darra and Murphy, 2016) appear to match closely with Wiedenbach's need for help theory (1967) while at the same time reflecting some aspects of Antonovsky's ideas about coherence. This may be seen in the following three aspects of the stories from the women and their midwives:

Coping

- Women and midwives expressed the deep feeling that the demands inherent in birth are worthy of commitment and that coping with them is desirable
- The woman copes with the personal, psychological, social and physical aspects of birth
- The midwife copes with the legal, professional, ethical and personal aspects of being with a woman in labour.

Help

- A belief that women and midwives have the resources to meet the demands of labour and birth but both feel that they know where to get help
- Help may be having the midwife present to encourage the woman's ability to cope or anything else, up to and including pharmacological interventions or help from other professionals
- Need for help must be recognised by the midwife and be validated by the one whose need it is
- It is the role of the midwife to take appropriate action to meet the need.

Coherence

- An expectation that what happens in labour and birth will be understandable, meaningful, orderly and consistent instead of chaotic, random and unpredictable
- The woman considers her birth story in the context of her own previous stories and/or other people's stories
- The midwife relies on her legal, professional, ethical and personal understanding of birth and of the demands of midwifery practice.

Conclusion

The way midwifery knowledge and practice has traditionally been analysed through, and is subject to, dichotomous ways of thinking has been discussed in this paper. The paper comprises a reflection on dichotomous models that relate to childbirth and midwifery with findings from a narrative study involving new mothers and their midwives helping to illustrate this. A proposal involving Wiedenbach's need for help theory (1967; 1964) along with some aspects of Antonovsky's sense of coherence theory (Schmid, 2011; Downe, 2004; Antonovsky, 1987; 1979) is offered to provide an explanatory framework through which to understand the experiences of new mothers and their midwives.

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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 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 for entries

Applications are now being accepted for the Mary Seacole Awards 2018-19. The awards recognise the outstanding achievements of midwives, nurses and health visitors in England within the black, Asian and minority ethnic community. The awards are funded by Health Education England, in association with the RCM, RCN, Unison and Unite. Entries are being accepted for the leadership award, development award and a combined leadership and development award. Mary Seacole was a Jamaican-Scottish nurse and businesswoman, celebrated for her bravery in nursing soldiers in the Crimean War. The closing date for applications is 5 May 2018. For more information, visit nhsemployers.org/maryseacole

REF panel membership appointments announced

The first set of panel members for the next Research Excellence Framework (REF) has been confirmed. The appointment of members to the main panel and sub-panels have been confirmed for the first stage of the REF 2021 exercise, the criteria-setting phase. This follows a nominations process, when subject associations and other organisations with an interest in research were invited to nominate candidates. Over 4000 nominations were made for roles across the four main panels and the 34 sub-panels. For more information, visit ref.ac.uk/news

New premature birth research centre

A new centre investigating the causes of premature birth is opening at Imperial College London. The centre is called the March of Dimes Prematurity Research Centre. March of Dimes is a US charity that supports research, leads programmes and provides education around birth. Imperial College London is the first European partner to join its network of Prematurity Research Centres. It will work in partnership with Queen Charlotte's and Chelsea, St Mary's, and Chelsea and Westminster hospitals. The research team at Imperial will aim to identify and characterise the complex processes between the bacteria in the birth canal and the mother.

Evidence Based Midwifery editorial panel members

UK editorial panel

Professor Soo Downe, University of Central Lancashire, England
 Professor Billie Hunter, Cardiff School of Nursing and Midwifery Studies, Wales
 Dr Julia Magill-Cuerden, University of West London, England
 Dr Margaret McGuire, NHS Tayside, Scotland
 Dr Marianne Mead, University of Hertfordshire, England
 Professor Jane Sandall, King's College London, England
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 Professor Marlene Sinclair (editor), Ulster University, Northern Ireland
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 Emma Godfrey-Edwards (editor), Redactive Media Group

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 Professor Edith Hillan, University of Toronto, Canada
 Dr Amy Levi, University of California San Francisco, US
 Dr Address Malata, University of Malawi, Malawi

Editorial advisory panel

Joseph B Cunningham, University of Ulster, Northern Ireland
 Dr Rhona McInnes, The Queen Mother's Hospital, Scotland
 Helen Spiby, University of Nottingham, England
 Jason Grant, Redactive Media Group

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