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The future role of technology in the healthcare industry

Key words: Research, industry, technology, health care and evidence-based midwifery

The research community faces a new future, as it prepares to make research impact more visible and collaboration with industry more acceptable post-REF2014 (Dowling et al, 2015) and Health Education England, in partnership with the National Institute for Health Research, prepares to develop clinical academic career pathways for all health professions. For those working in maternity services, the time for planning a future in which education research and practice are integrated is now, with the evidence of impact from investment in midwives, nurses and health visitors demonstrating a good return for investment (Health Education England, 2014).

Raising the bar (Lord Willis, 2015) follows REF2014. The independent review of the education and training of nurses and care assistants in the NHS by Lord Willis sets out recommendations for a collaborative future, where the shared goal is to achieve a world class NHS, underpinned by effective research. He recognised the need for strategic leadership, evidence-based practice, integrated education systems and high-quality information systems to deliver the future health service in light of an ageing population with complex healthcare needs, rapidly expanding technologies and increased public expectation. The report builds on predictions from Health Education England (2014) in which the population estimates for the whole of the UK is 68 million, of which 18 million are likely to require long-term care, 2.9 million will have complex healthcare needs and two million will suffer from dementia. The current nursing and care assistant workforce is reported to be 630,000 registered nurses and 1.5 million care assistants (Willis, 2015). The systems have to change and the role of the consumer in planning services has been recognised and is now incorporated into all policies.

He also recognises: 'Technology will play an increased role in the education and training of our workforce, as well as the education and empowerment of patients and their carers. E-learning, apps and simulators are currently assisting nursing and care support staff to access education and training outside the classroom, enabling regular updates of skills and knowledge. This results in a more educated and competent workforce that is able to deliver harm-free and clinically effective care' (Willis, 2015: 26).

When I read the report, I was struck with the clear message about the importance of the future NHS gearing itself up to an integrated and systems approach to using technology and research more effectively in every layer of the healthcare industry including education, administration, surveillance, monitoring and diagnostics. However, we have been slow to work with technology and industry, but now we need to start envisioning a future where we actively design and plan for the strategic benefits emanating from these alliances and connections on a macro, meso and micro scale as new technologies developed or designed by clinicians are taken to the market and the profits re-invested into local and

national healthcare systems (House of Commons Science and Technology Committee, 2013). Mobile health care is the future and the electronic health record that we talked about 25 years ago is now a reality. The use of apps for all aspects of maternity care is becoming more and more popular and 'generation z' are becoming older and more sophisticated users of technology. Support groups for patients, carers and new mothers are accepted as the norm and more midwives are referring mothers to websites for information and evidence-based guidance.

The future with technology is expansive, alluring and daunting. The integration of mobile technology is visible in the classroom, the hospital administration system, the antenatal clinic, labour room, and the education system is now well-established and it is worth ending this editorial with a reflection back to the mid-1990s when technology was novel, unreliable, mistrusted and risky.

In 1996, I was involved in the first UK telemedicine (teledermatology) project in Queen's University Belfast. Professor Richard Wooton and I went on to design the first application of telemedicine in a breastfeeding context (Sinclair et al, 2000). The application was perfect for dealing with a visual problem of positioning and attachment for successful breastfeeding, but the technology was bulky, expensive and required major enthusiasm and commitment from the user. Today, we have excellent systems capable of high velocity transfer of data and much more user-friendly systems that are designed to communicate with other programmes seamlessly. The predictive power of the latest healthcare technologies will no doubt shape our future health service.

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Tapping into authentic presence: key components arising from a concept analysis of online breastfeeding support

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Abstract

Background. The internet is widely used by women to guide infant-feeding decisions and practice, but there is no clear understanding of women's self-directed use of the internet to support breastfeeding.

Aim. The aim of this study was to conceptualise online breastfeeding support.

Methods. With ethical approval, a mixed methods triangulated study was undertaken, based on a concept analysis that used an eight-step framework. The study was designed in three phases – Phase 1: a concept analysis to identify components of online breastfeeding support; Phase 2: testing of tentative components arising from the concept analysis through observation of breastfeeding-related online discussions (based on 126 threads containing 1230 messages generated by 510 individuals); Phase 3: confirmation of the resultant model through online interviews with 12 women.

Findings. In total, 16 components of online breastfeeding support emerged indicating that women who engaged in this practice had antecedents of: a breastfeeding goal; a breastfeeding query or interest in discussion/debate; inadequate face-to-face support or seeks additional/optional support; willingness to seek and offer support online. Attributes manifested as a tailored menu of support, or enablement of debate by more experienced others, in an accessible, responsive, optionally anonymous environment sustained by indirect reciprocity. Confirmed consequences were: reconstruction of breastfeeding experience; impact on breastfeeding outcomes and other aspects of parenting; becoming expert and enabling face-to-face support. Together, these components constitute an authentic presence of support created by a global community of breastfeeding women.

Conclusion. To the authors' knowledge, this study is unique and has potential to impact on strategies targeting maternal and child health at a national and international level. It provides new theoretical knowledge about women's behaviour and usage of online support to enable them to achieve desired breastfeeding goal(s). This study provides empirical evidence of 'woman-generated', sustainable, online breastfeeding support and opens the doors for targeted public health research investment.

Key words: Breastfeeding, support, online, mixed methods, concept analysis, antecedents, attributes, consequences, indirect reciprocity, evidence-based midwifery

Introduction

The need for robust evidence about effective breastfeeding support has been topical for some time in view of static or decreasing breastfeeding rates worldwide (Renfrew et al, 2012). The internet has been identified as one approach to support women to breastfeed (Stockdale et al, 2007; Gribble, 2001). Global internet usage has increased from around 1% in 1995 to over 40% today (Internet World Statistics, 2014). Seven out of 10 internet users have sought health information online (Fox and Duggan, 2013). It is estimated that around 30% of new mothers seek lactation support online (Leahy-Warren et al, 2009). A structured search of the literature (Herron, 2013) identified a lack of published studies exploring women's use of the internet for breastfeeding support. A recent review (Giglia and Binns, 2014) reported little evidence of effective online professional interventions impacting on breastfeeding outcomes.

Rationale

This study focused on gaining an understanding of women's self-directed use of online breastfeeding support (OBS) – reflecting the need to learn from women's experiences in

order to ensure that breastfeeding support is effective and relevant (Barclay et al, 2012).

Methods

The eight-step concept analysis framework developed by Walker and Avant (2005) was selected to guide the study and was undertaken using a non-linear approach. The concept analysis was enhanced by contextualisation through testing and validation as recommended by Gillen et al (2004) and resulted in three distinct but interlinked phases.

Phase 1: All eight steps of the concept analysis were undertaken, including a literature review to identify the key components of OBS.

Phase 2: An online observational study was undertaken to test components arising from the concept analysis. The online environment is acknowledged as a suitable location for observational research (Hine, 2008), however, given the lack of a standardised approach for extracting and analysing online data (Murthy, 2008), the following processes were adopted:

Selection of site: A breastfeeding forum was selected for observation by emulating user behaviour on a search engine (Eysenbach and Köhler, 2002) and applying criteria recommended by other authors including:

- Forum has more than 50 postings per month (van Uden-Kraan et al, 2008)
- Site is freely accessible without membership (Coursaris and Liu, 2009)
- Website owners permit research (O'Connor and Madge, 2001)
- Copyright is not infringed (Copyright, Designs and Patents Act 1988)

The only site found to meet all criteria was netmums.com, which had 756,000 members at time of selection (2010).

Selection of sample: The search facility on netmums.com enabled identification of threads with 'breastfeeding' in the title. Entire threads, rather than a sample of messages, were downloaded to enable analysis of whole conversations (Coursaris and Liu, 2009). Relevant threads from a consecutive three-month period were selected to explore data patterns (van Uden-Kraan et al, 2008). This resulted in the selection of 126 threads consisting of 1230 messages posted by 510 individuals during August to October 2010.

Coding: Each message was selected as the unit of analysis (Rourke et al, 2001). A dynamic approach to coding advocated by Lampert and Ervin-Tripp (1993) enabled multiple coding of each unit of analysis. A directed content analysis (Hsieh and Shannon, 2005), which incorporated both deductive coding of components identified in the concept analysis, as well as inductive coding of new aspects of the concept observed online, was undertaken by the first author. This generated 121 codes, including 14 key variables. To ensure validity of the coding, key variables were tested by a second coder using a process outlined by Lombard et al (2002), which included coder training and testing of a 10% random sample of the dataset. Codes generated by both coders were subjected to inter-coder reliability analysis using the Kappa statistic (Landis and Koch, 1977). Data were managed and analysed using SPSS version 19.0 and an online tool called 'ReCal' (Freelon, 2010).

Phase 3: Confirmation of analyses was undertaken via internet-based interviewing, as outlined by O'Connor et al (2008). Following a small pilot study with two volunteers from the university (who identified an additional attribute of OBS), a purposive sample of mothers who had sought or offered OBS was obtained via invitations posted to popular online breastfeeding forums. A target of 12 respondents was set to reach theme saturation (Guest et al, 2006). Respondents were aged 24 to 39 with young children (aged six to 28 months) and were living in the UK, US and Germany. Semi-structured interviews were conducted via email exchanges (n=72). Transcripts were subjected to a directed content analysis (Hsieh and Shannon, 2005) and managed using NVivo 9.0.

Ethical considerations

Ethical considerations for undertaking online interviews were addressed through informed consent, while additional clarifications were required for accessing user-generated material (Herron et al, 2011). It was concluded that publicly accessible material was exempt from human subjects research (O'Brien and Clark, 2010) and that such research was also permitted under the 'fair use' exemption of UK copyright infringement (Copyright Design and Patents Act 1988). Ethical approval was obtained from Ulster University.

Findings

The concept of OBS evolved over the three phases of research, yielding a tentative model with 16 components, as presented in Figure 1 (overleaf). Nine tentative antecedents, attributes and consequences were identified in Phase 1 and one additional component was identified in the pilot of online interviews. These provisional components were confirmed and supplemented with two additional components in Phase 2 through analysis of the online discussions. In Phase 3, interviewees validated all 12 components with some modifications, and highlighted four further aspects. No hierarchy is ascribed to the components, apart from indirect reciprocity, which emerged as the pivotal component.

Antecedents (n=5)

Antecedents are described as 'events or incidents which must occur before the occurrence of the concept' (Walker and Avant, 2005: 73).

Antecedent 1: Having a breastfeeding query or need to discuss/debate wider breastfeeding issues

During August to October 2010, 126 threads with 'breastfeeding' in the title were posted to netmums.com by 104 individuals. The majority of threads (90%, 114/126) were queries which related to either:

- Contemplating, initiating or sustaining breastfeeding (46%, 58/126)
- Stopping breastfeeding (23%, 29/126)
- General personal queries about breastfeeding (21%, 27/126)
- Wider discussions/debates about breastfeeding (10%, 12/126).

Inter-coder reliability for thread theme using Cohen's Kappa was .72 which is considered to be substantial, according to Landis and Koch (1977).

Approximately 37% of threads (46/126) contained queries similar to 'breastfeeding problems' identified in the *Infant-feeding survey* (IFS) (Bolling et al, 2007). However, approximately 63% of issues raised online (80/126) were not listed in the IFS, including tongue-tie, lactose intolerance, re-lactation, as well as concerns about the use of medicines/drugs, confusion about fertility, trying to conceive, breastfeeding while ill and being advised to stop breastfeeding due to use of medications. This antecedent encompassed a wide range of breastfeeding-related reasons for engaging with OBS, which was confirmed by interviewees:

"I have no doubt that I will turn to it frequently over the rest of our [breastfeeding] journey" (M12).

Antecedent 2: Inadequate face-to-face (F2F) support or seeks additional/optional support

Available data indicated that approximately 60% (59/99) of those seeking OBS on netmums.com were first-time mothers; most knew no-one or few others who had breastfed; had difficulty accessing local support, particularly after leaving hospital, and one in five (22%, 23/104) mentioned receiving conflicting or discouraging advice from healthcare professionals (HCPs).

Similar circumstances were described by interviewees whose families and partners were mainly supportive but (with a few exceptions) lacked breastfeeding knowledge. Some interviewees felt unable to discuss breastfeeding issues with friends as most had not breastfed or had not breastfed for long:

“It would be a case of “I told you so” and suggestions of formula rather than advice on how to continue breastfeeding” (M1).

Some interviewees (5/11) had received positive support from HCPs including antenatal preparation, latching and establishing breastfeeding. However, most interviewees (11/12) had negative experiences, which portrayed an apparent lack of breastfeeding knowledge by some HCPs: no encouragement to breastfeed a premature baby, staff unable to demonstrate a breast pump; conflicting advice; being ‘man-handled’; not being shown how to latch properly; scheduled feeding; advice to top-up with formula; undiagnosed tongue-tie; advice to stop breastfeeding due to mastitis including instruction to stop ‘cold turkey’:

“One of the midwives actually told me to wait ‘one and a half hours so that he is really hungry’ when he was two weeks old. The doctor told me to ‘top off’ with formula. The lactation consultants told me that I should switch every 20 minutes and one left a bruise on my breast” (M6).

Another interviewee who experienced difficulties accessing satisfactory real-life support said:

“I think it would make a real difference to see someone that actually specialises in [breastfeeding support]” (M12).

Some interviewees had access to F2F support options, but expressed preference for OBS:

“Help was there at the time of need rather than having to wait for a breastfeeding group or a call back from the health visitor/midwife” (M4).

Antecedent 3: Having breastfeeding goals

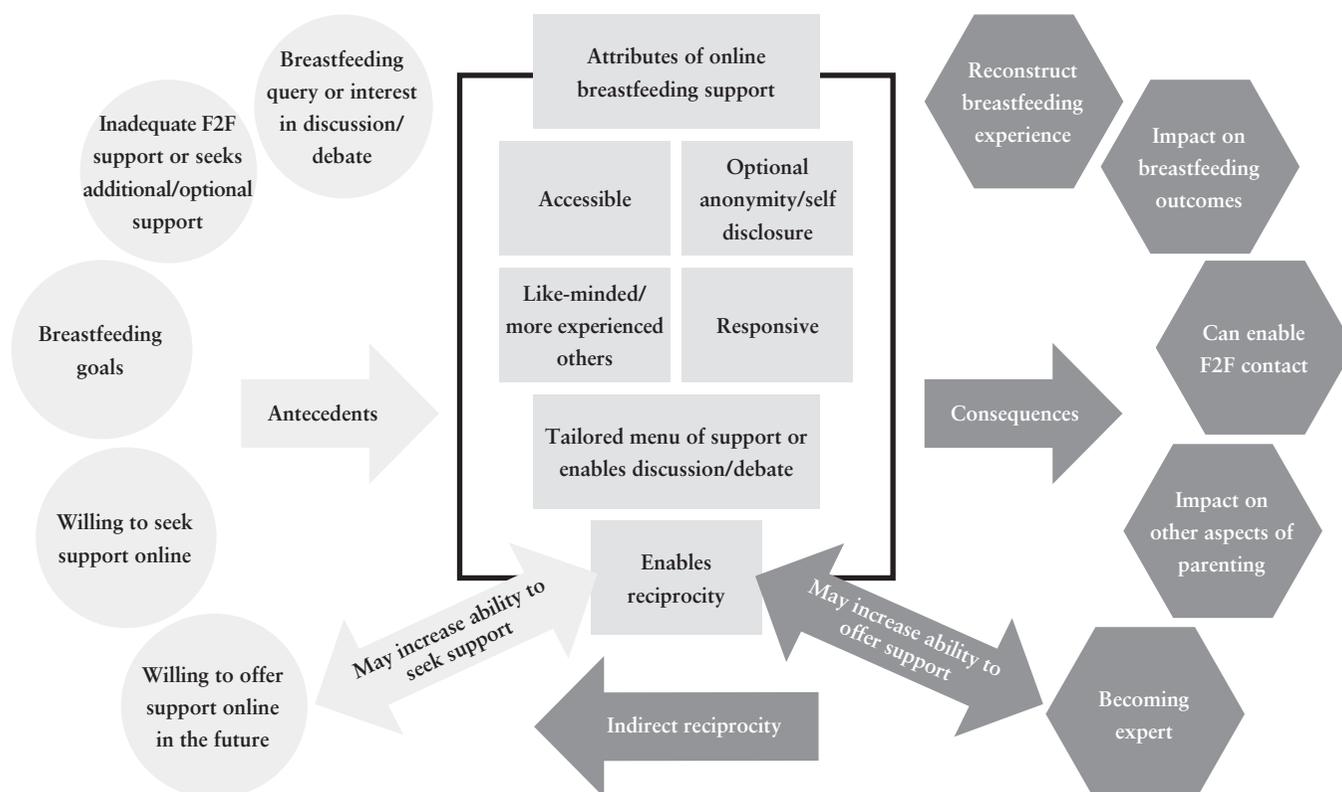
Most interviewees (11/12) identified breastfeeding goals as an antecedent. Women also described how goals changed over time as confidence in breastfeeding grew. Furthermore, interviewees who had previously breastfed tended to set longer-term breastfeeding goals than mothers breastfeeding for the first time.

Antecedent 4: Willing to seek support online

This had two aspects:

- A level of online proficiency that was confirmed by all interviewees (12/12). Despite competency, interviewees described how initial searches could take time or lead to unsatisfactory sites.

Figure 1. Tentative model of online breastfeeding support composed of five antecedents (left), six core attributes (centre) and five consequences (right) with indirect reciprocity emerging as the overlapping and pivotal component (Herron, 2013)



- Women felt free to seek OBS knowing that only those who wanted to would respond, and that they were not inconveniencing others:

"I am a quiet, private person who hates to interrupt or disturb people; I loathe the phone and am not good at small talk. But I am used to bulletin boards and forums, which circumvent all the awkwardness" (M9).

Antecedent 5: Willing to offer support online

This was identified in the high ratio of responses to queries. Most interviewees (11/12) had offered OBS and one explained that this was somewhere that you can:

"Get help if you need it and eventually you will be giving advice on there when you get through your problem" (M5).

Attributes (n=6)

Attributes are the 'defining characteristics' or recurring themes that represent core features of a concept (Walker and Avant, 2005: 68).

Attribute 1: Accessibility

Four distinct aspects emerged – being accessible by anyone, anytime, anywhere and being able to ask anything:

- Anyone with an internet connection could access OBS as a seeker, supporter or observer. Seekers generated 126 initial posts and 153 feedback posts, while supporters provided 951 responses. Distinctions between types of post was verified through inter-coder reliability testing that identified Kappa to be .98 considered to be almost perfect (Landis and Koch, 1977).
- Ability to seek or offer support anytime was identified on netmums.com, where more than half the queries (55%, 69/126) were posted outside working hours:

"Even at 5am, there is always some else up feeding that you can chat to" (M3).

- Interviewees described being able to access support from anywhere via PCs, laptops or mobile phones.
- Women appreciated being able to ask anything in the online setting:

"I wasn't made to feel like an idiot for asking, which is good, because if I had been, I probably wouldn't have gone back and I might have given it all up when things got bad" (M5).

Attribute 2: Optional anonymity or self-disclosure

This was initially identified in the pilot of online interviews, and was apparent in the analysis of breastfeeding-related discussions on netmums.com. This attribute had two aspects:

- There was an overall average of 322 views for every thread initiated, indicating a high level of passive viewing by observers. Differences in viewing numbers were noted, depending on whether the thread was a query (1:243 views) or a debate (1:1072). Viewing discussions anonymously was regarded as beneficial by interviewees:

"There's the ability to 'lurk'... to read yet not take an active role; it's amazing how much you learn from that" (M9).

- Online observation confirmed that two-thirds of participants (66%, 338/510) had low disclosure of identity,

29% (146/510) had high disclosure, including having their child's birth details embedded in their posting. Only 1% of individuals (7/510) were effectively anonymous. Approximately 4% (19/510) varied anonymity level (low and high disclosure) during the observational period. Inter-coder reliability for anonymity was found to be Kappa .77, which is considered to be substantial (Landis and Koch, 1977). Option to vary anonymity level was confirmed by interviewees who described developing friendships online, which sometimes led to F2F meet-ups. Having some level of anonymity was seen as a benefit in seeking support:

"Easier to discuss challenges online than it is F2F or over the phone as there is a sense of anonymity" (M4).

Attribute 3: Responsive

Over half (56%, 70/126) of the queries or debates posted to netmums.com received a response within 60 minutes and almost all (92%, 116/126) were answered within 24 hours. Only three queries (2%) received no response. One interviewee reported:

"Knowing that you can get an answer to queries or worries, often within minutes... so reassuring and really invaluable" (M12).

Attribute 4: Like-minded/more experienced others

Netmums.com enabled mothers to support each other, as well as offering support from HCPs. Approximately 90% of all responses (858/951) within threads were from other mothers. Inter-coder reliability for author type was found to be Kappa .94, indicating almost perfect agreement (Landis and Koch, 1977).

Variations in thread dynamics were observed when the initial response to the thread was from another mother (76%, 94/123) compared to an HCP, resulting in more responses to the thread ($p < 0.0005$) and more likelihood of a feedback post from the original author ($p < 0.05$). This apparent preference for engagement with other mothers was also indicated by interviewees whose descriptions of OBS referred mainly to:

"Mums with vast breastfeeding experience" (M4).

There were also references to times where support (online or offline) from an HCP might be required, with particular emphasis on breastfeeding counsellors and lactation consultants and more generic descriptions, such as:

"The amazing supportive people out there in the world who share their knowledge, experience and support" (M6).

Attribute 5: Tailored menu

A tailored menu of support was often provided to those who posted queries on netmums.com, through apparently spontaneous teamwork by supporters. By studying patterns in these query threads, six observations were made:

- Queries usually received prompt replies.
- Multiple responses to a query often contained specific types of support, which matched the support types sought in the initial query.
- Those offering support often affirmed contributions from others on the thread.
- Some supporters made extra effort to provide relevant

information including online links.

- Mutual intentionality was identified whereby supporters and seekers worked together to fine tune the issue/solution.
- A self-correcting mechanism was observed when either incorrect or unconventional information was posted, which was subsequently corrected.

When asked for their own definitions of OBS, one interviewee described it as:

“The community of breastfeeding women that in the past would have been our own mothers, sisters or friends, but now in real life, none of those people may have ever [breastfed] a baby or know anyone who did – so the online community provides a way to gain back that support from others who have done it before and replace what we have lost” (M8).

One in 10 threads (10%, 12/126) was initiated for wider discussions or debates about breastfeeding and these generated high levels of interaction – accounting for almost half of all responses (49%, 469/951).

Attribute 6: Enables reciprocity

Mothers who had previously received support were able to return to support others. During the initial observational period (three months of data), over half the seekers (56%, 58/104) returned to their own thread to give feedback or express gratitude. There was no evidence of direct reciprocity (whereby the seeker returned a favour to the supporter), however, there was evidence of indirect reciprocity where some seekers (17%, 18/104) returned to help others who were looking for support. When this behaviour was noted, it was decided to extend the observational period for a further nine months.

Consequences (n=5)

Consequences are defined as ‘those events or incidents that occur as a result of the occurrence of the concept’ (Walker and Avant, 2005: 73).

Consequence 1: Reconstruction of breastfeeding experience

In netmums.com and throughout interviews, women described how OBS helped them to:

- Normalise the breastfeeding challenges:

“The start was so difficult and it was so critical to know that people all over the world struggled too and that it does get better” (M6).

- Normalise breastfeeding:

“Reassurance that not only was I doing a good thing for my baby, but that it was in fact normal to breastfeed a child for as long as s/he wanted” (M11).

This attribute differs from breastfeeding outcomes as it reflects women’s personal experience of breastfeeding, including stopping breastfeeding, which was often presented as an emotionally and physically difficult task.

Consequence 2: Impact on breastfeeding outcomes

During the extended observational period, it was possible to retrieve data on 100 of the 104 individuals who posted the original threads. Of those who sought OBS specifically to initiate or maintain breastfeeding, it was found that half

(50%, 21/42) continued to breastfeed for weeks or months after posting their query for help. However, 7% (3/42) of women stopped breastfeeding around the time of their query and 43% (18/42) did not post any further updates on their breastfeeding status, presumably stopping shortly after seeking help. It is not clear what differentiated these two groups of women who posted similar queries. Most interviewees (9/12) said they would not have breastfed for as long without OBS:

“I probably would have stopped at six months, when the TV ads for follow-on milk ‘suggest’” (M3).

Consequence 3: Can enable F2F contact

In approximately 13% (127/951) of responses, supporters advised or reassured seekers that it was appropriate to seek F2F or telephone help for specific queries, including breast pain, latching problems, possible infection, tongue-tie or intolerance. This practice of referring some online queries to F2F support was explained by an interviewee:

“If you are having a latch issue or have a baby with a tongue-tie, someone who knows what they’re doing needs to actually see the baby feeding to help” (M8).

However, interviewees outlined problems with referrals to real-world support, including:

- Perceived lack of HCP availability or knowledge, with one mother concluding that it was better to:

“Get advice from trained peer support workers, rather than midwives, nurses or doctors” (M7).

- Underfunded services staffed by unpaid volunteers, which sometimes meant that:

“No one can pick up the phone or come out to see you” (M9).

Some seekers were advised to find peer support groups and, while it is unknown if they did this, over half the interviewees (7/12) attended parent/breastfeeding support groups and considered these groups important for seeing, as well as meeting, other mothers who were breastfeeding:

“By the time I attended my first meeting, I was nursing well, but it was great to see women nurse their babies” (M10).

Consequence 4: Impact on other aspects of parenting

Some interviewees (4/12) described how engagement with OBS led to exploration of new ideas such as extended breastfeeding, co-sleeping, attachment parenting, baby-led weaning, no-cry sleep systems and home birth. One parent explained:

“People who think deeply and consciously [about] breastfeeding tend to apply that to lots of other aspects – sleep, food, education and subsequent births. I doubt I’d have chosen a home birth second time round if it hadn’t been for online friends who helped me through the minefield” (M9).

Consequence 5: Becoming expert

This encompassed four aspects:

- Ability to discern helpful/unhelpful sources online.
- Acquiring knowledge about breastfeeding initially through resolution of a personal challenge, which sometimes led to wider interest in breastfeeding.

- Becoming politically aware – this aspect was initially observed in online debate threads where recurring themes included breastmilk versus formula, breastfeeding in public, extended breastfeeding and cry-it-out versus no-cry sleep solutions. While some interviewees expressed concerns that such threads could be a source of conflict and potentially off-putting to new mothers, others regarded these debates as an opportunity to discuss contentious issues.
- Indirect reciprocity – when the online observational period was extended to one year, it was found that 46% (48/104) of the individual seekers returned to help others with breastfeeding queries on netmums.com. The retrieved data were checked by the second coder who went online to verify the specific examples. Almost all interviewees (11/12) confirmed that they had returned to help others online and offered three main reasons for this reciprocity: to repay support they had previously received; not wanting to see other women struggle with similar problems; or because it felt good to help others. Nine interviewees (9/12) had also offered breastfeeding support to other women in real life; two had subsequently trained as peer supporters, while one was working towards becoming a La Leche leader.

Operational definition of online breastfeeding support

The recurring attributes of a concept distinguish it from other concepts and form the basis of its definition (Walker and Avant, 2005).

A working definition of OBS has been developed based on the six key attributes identified, tested and validated in this study: OBS is a sustainable mother-generated system based on indirect reciprocity, which offers easily accessible, highly responsive, tailored support from more experienced others in a discrete online environment.

Discussion

Breastfeeding support is recognised as a key component in breastfeeding success, along with self-efficacy and intention (Meedya et al, 2010). Obtaining effective breastfeeding support from statutory agencies can be difficult (Schmied et al, 2011) and access to breastfeeding support via family, friends or wider community appears to be increasingly rare (Scott and Mostyn, 2003). This study found that some women initially sought OBS because of perceived inadequate F2F support, while others expressed preference for the convenience of online support.

Some seekers expressed reluctance about pursuing real-life breastfeeding support. Reluctance to seek conventional breastfeeding support even when experiencing serious difficulties has been reported previously (Gill, 2001). The act of seeking support involves weighing up costs, such as feeling beholden to the support giver – in order to alleviate feeling obligated, people can feel compelled to return a favour and thus a perceived opportunity to reciprocate may be an important factor in deciding whether to seek or accept support (Uehara, 1995). Interviewees described feeling free to seek OBS because they knew they were not inconveniencing anyone, and there was an awareness among some women of the opportunity to reciprocate.

While reciprocity was originally regarded as a direct exchange between two parties (Gouldner, 1960), it can manifest as an indirect exchange involving a third party (known or unknown), which increases an individual's opportunity to reciprocate and ability to participate in an exchange (Ekeh, 1974).

Indirect reciprocity can manifest as either 'downstream' or 'upstream' (Nowak and Roch, 2007). Downstream reciprocity occurs when an individual helps another, with the aim of obtaining help for themselves in the future; while upstream reciprocity occurs when someone who has received help subsequently offers help to another.

The main type of reciprocity observed in netmums.com was upstream indirect reciprocity, where almost half those who sought help, returned within a year to offer support to other mothers. While indirect reciprocity has been identified in other online communities through reflections or intentions of participants (Lin et al, 2015; Wasko and Faraj, 2000), this appears to be the first study to confirm upstream indirect reciprocity through observed behaviours of an OBS community.

This study provides unique information about issues raised by mothers at different stages of their breastfeeding journey, which are not officially listed as 'breastfeeding problems' (Bolling et al, 2007), nor are they routinely addressed by health services (Cross-Barnet et al, 2012).

A synthesis of women's views and experiences of breastfeeding support found that 'authentic presence' was the most valued type of breastfeeding support and incorporated 'being there for me; empathetic approach; taking time, touching base; providing affirmation; being responsive; sharing the experience; having a relationship' (Schmied et al, 2011: 54). Tentative attributes of OBS suggest that breastfeeding women may find 'authentic presence' in OBS.

An apparent contradiction was initially observed when tailored support found in query threads was compared to the negative sentiment expressed in debate threads. However, these debates were regarded as predictable by the interviewees, and appear to reflect public discourses that are taking place about breastfeeding (Callaghan and Lazard, 2012). Concerns have previously been raised about incorrect information being shared online (Scullard et al, 2010). While there was some evidence of incorrect or unconventional information within query threads on netmums.com, this was usually promptly corrected through the observed teamwork of more experienced others. This online self-correction mechanism was confirmed by interviewees and has been noted elsewhere (Esquivel et al, 2006).

While this study of OBS found that support was offered mainly by other mothers, two important aspects about this finding were also identified. Firstly, support was provided by more experienced mothers, rather than by peers at a similar level. This important distinction appears to have been unforeseen in an online intervention, which brought together peers at the same stage of breast cancer diagnosis, resulting in negative consequences for some participants (Salzer et al, 2010). Furthermore, while OBS was delivered

predominantly by mothers, this did not preclude involvement of HCPs, particularly breastfeeding counsellors and lactation consultants, who were recommended and sought for specific breastfeeding problems.

Anonymity appeared to be an important aspect of OBS, as observed in the high levels of lurking, as well as low-level disclosure practised by most individuals who engaged on netmums.com. While this behaviour reflects the 'online disinhibition effect' (Suler, 2004), there was also evidence of some individuals foregoing anonymity through higher level disclosure and the development of online/offline friendships.

This study provides unique information on the consequences of OBS, including the impact on breastfeeding experience, outcomes and becoming expert, thus helping to address a knowledge gap on the impact of online activity (Eysenbach et al, 2004). Self-directed online behaviour in relation to health has been highlighted as an important activity on the internet and could be key to more effective and sustainable healthcare models (Ferguson and Frydman, 2004).

Breastfeeding has been described as 'an engrossing, personal journey' (Nelson, 2006: e15) but for many women, this experience can be short-lived and disappointing (Bolling et al, 2007). People struggling through a transition state may benefit from an opportunity to discuss this with others (Harrison et al, 1995). This study found evidence that OBS offered women space to query, ponder, discuss, debate and rant about breastfeeding issues and interests.

Evidence gathered in this study indicates that approximately half of those who sought OBS to initiate or maintain breastfeeding, continued to breastfeed for weeks or months after their request for help. This appears to be significant in a culture of static breastfeeding rates and may reflect both the determination of some individuals to meet their breastfeeding goals (Hegney et al, 2008), as well as the potential of OBS to provide effective support (Gribble, 2001).

For some mothers, involvement in OBS resulted in consideration of alternative parenting practices, as well as becoming expert in breastfeeding matters. For many

mothers, becoming expert culminated in them sharing knowledge and experience online and offline. This process of 'expert development' is recognised in the theory of online social support developed by LaCoursiere (2001), however, this theory does not describe indirect reciprocity, found to be the pivotal component of OBS in this study.

Practice implications

OBS offers a valuable resource for mothers with internet access, as well as a cost-effective solution for authorities striving to improve population health with limited resources. To optimise the value of OBS, developers should consider the components and gaps of OBS identified in this study.

Intelligence obtained in cooperation with mother-initiated online forums could contribute to more effective statutory breastfeeding support.

Limitations

This observational study was based on breastfeeding discussions from the only UK parenting website that met inclusion criteria. Generalisation of findings may, therefore, be restricted to a mainly UK perspective; this was partially addressed through the online interviews that included non-UK experiences. Interviews were undertaken with women who were highly proficient online, and different perspectives may have been elicited from women with less online competence.

Conclusion

To the authors' knowledge, this study is unique and has potential to impact on strategies targeting maternal and child health at a national and international level. The study provides new theoretical knowledge about women's behaviour and usage of online support to enable them to achieve their desired breastfeeding goal(s). It provides empirical evidence of woman-generated, sustainable, online breastfeeding support and opens the doors for targeted public health research investment.

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Thai cultural influences on breastfeeding behaviour

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Abstract

Background. Breastfeeding is recognised as a complex behaviour that is influenced by many factors. This creates challenges for all breastfeeding mothers and health professionals seeking to support women in their breastfeeding journey. Personal, psychosocial, cultural and economic factors create a complicated interplay that affects breastfeeding practices. Maternal motivation is acknowledged as a determinant of breastfeeding behaviour; however, it is important to recognise that motivation is influenced by the culture and environment in which women live. Understanding how culture influences behaviour offers researchers insight into breastfeeding practices.

Aim. The aim of this study was to identify the contextual and cultural influences that are communicated through breastfeeding instruction within a Thai setting.

Methods. Observational data were collected at national, corporate and individual levels using the Attention, Relevance, Confidence, Satisfaction (ARCS) educational model (Keller, 2010) and Gardenswartz et al's (2003) cultural model to gain a deeper understanding of key factors influencing breastfeeding education and maternal motivation. A total of 75 hours of observation were completed in eight maternity environments. The data collected included national data profiles, corporate policies, protocols and everyday practices. Ethical approval was obtained from universities in Northern Ireland and northern Thailand.

Findings. Published national breastfeeding rates were 49.6% for initiation and 15% for duration at six months. Breastfeeding policies in seven settings were identified and analysed. These were all based on the Baby Friendly Initiative (BFI) guidelines. Organisational culture was evident in the timing, venue and structure of the breastfeeding classes with individual and group breastfeeding classes prenatally and postnatally and specific self-efficacy and postnatal discharge classes. The maternity staff took pride in what they termed 'the Thai way' of breastfeeding and this was indicative of a specific cultural identity.

Conclusion. This observation of Thai breastfeeding behaviour has demonstrated strong cultural influences as being inextricably linked to individual and national goals. The systematic process of gathering information about the educational and cultural components of breastfeeding behaviour and practices in a Thai setting using a combination of the ARCS model by Keller (2010) and Gardenswartz et al (2003) provided an enriched understanding of the interplay between the individual and societal factors evident in this unique culture.

Key words: Breastfeeding, instruction, motivation, context, culture, adaptation, evidence-based midwifery

Background

Breastfeeding is internationally recommended as being the most effective way to meet an infant's nutritional needs within the first year of life. The WHO advises exclusive breastfeeding up to the age of six months with supplemented breastfeeding to the age of two years (WHO, 2014; 2002).

The breastfeeding relationship between mothers and their infants is influenced by personal, psychosocial, sociocultural and circumstantial factors that can affect women's intention, as well as physical challenges during the initiation and continuation of breastfeeding behaviour (Teich et al, 2014; Bai et al, 2011; Brand et al, 2011). The complexity of breastfeeding behaviour can cause complications for health professionals when preparing and supporting women to achieve their breastfeeding goals.

A recurrent theme within literature investigating maternal breastfeeding behaviour is the presence of a support system, which may be either personal or professional (Johnston and Eposito, 2007; Persad and Mensinger, 2007).

McInnes et al (2013) have suggested that a paradigm shift is required away from the traditional approach of support and education of individual women, to a more holistic attitude which recognises what influences how the mother and infant learn.

Understanding the context in which women learn to breastfeed is critical when developing a breastfeeding education programme in order to ensure the design and content of the delivery of the material is both relevant and effective. The challenge within a design process is to incorporate cultural sensitivity, appropriateness and the cultural components that are relevant to reduce potential negative influences (Buhl, 2010).

A clear understanding of the cultural components that exist within the breastfeeding environment will enable a more integral approach to supporting women. This paper presents the methods and findings of information gathered to explore the education and cultural factors influencing breastfeeding in Thailand.

Aim

The aim of this paper is to identify contextual and cultural influences in breastfeeding education in a Thai setting. The objectives are to:

- Explore the policy context for practice
- Identify the key components of current breastfeeding education in a university hospital setting in Thailand
- Map the influence of Thai culture on breastfeeding behaviour.

Literature review

Culture is recognised as being a key component within breastfeeding, but one which is relatively unexplored with great diversity reflected between ethnic groups (Fischer and Olsen, 2014; Kelly et al, 2006; Thomas and Avery, 1997). However, the literature rarely provides direction on which essential cultural components need to be identified and considered within the design and development of interventions (Im, 2015). Independent variables of social and cultural significance should be unpacked to identify distinctive cultural elements, such as values and behaviours (Whiting, 1976). Dodgeson et al (2002) discovered four patterns of influence on breastfeeding behaviour within an indigenous population: local and mainstream culture, mixed messages received by the mother, life circumstances, and social support. Recognising these varied influences within breastfeeding behaviour as a culturally determined behaviour may go some way to explaining why successful Western style breastfeeding programmes may not be effective in some ethnic groups or culturally diverse situations (Sutton et al, 2007).

Behaviour is not just influenced by the individual's characteristics, but also by their surrounding cultural environments, such as family, workplace and geographical area (Unger and Schwartz, 2012; Trickett, 2009). A lack of support during life-changing circumstances, a lack of culturally relevant, timely and comprehensible information and the cultural norms of feeding in public can affect maternal expectations to succeed with breastfeeding (Glover et al, 2009). Family opposition or cultural beliefs and practices may also be a factor (Ong et al, 2014; Ergenekon-Ozelci et al, 2006; Tarrant et al, 2004). In some contexts, religious beliefs appear to play a part in breastfeeding practices; for example, Buddhist teachings in Japan support extended breastfeeding to the age of six as part of their religious teachings (Segawa, 2008; Foo et al, 2005). Traditional postpartum practices in Asian countries are believed to be grounded in two main perspectives: humoral theory (the assumption that the human body is composed of four elements: earth, fire, air and water) and traditional Chinese medicine (Elter et al, 2014; Manderson, 1981). In addition to this, traditional Thai medicine integrates folk medicine, Khmer medicine and Buddhist and animistic beliefs (Elter et al, 2014; del Casino, 2004; Department for the Development of Thai Traditional and Alternative Medicine, 2004; Salguero, 2003; 2007; Bamber, 1999). These cultural influences can all have an effect on maternal motivation.

Motivation

Motivation is defined as the energy and guide that directs behaviour towards achieving a goal (Sansone and

Harackiewicz, 2000). Keller (2010) suggested that if a person's motivation is strong enough, there is little that will dissuade them from persisting until they achieve their goal. The application of the ARCS model to routine breastfeeding instruction was first applied to breastfeeding by Stockdale et al (2014; 2011). When applied to breastfeeding instruction, the ARCS components resulted in a significant increase in maternal motivation to breastfeed through the creation and implementation of a breastfeeding intervention (Stockdale et al, 2008). Therefore, the ARCS was deemed to be an appropriate theoretical frame of reference for undertaking this study and the authors used Keller's information analysis to guide the data collection and analysis.

A cultural model (Gardenswartz et al, 2003) was adapted and integrated into the information analysis in order to maintain a culturally appropriate, as well as a systematic and theoretical, framework. While traditionally used within an organisational or conflict management situation, this framework was introduced to ensure clarity in the data collection process, in particular in overcoming potential cross-cultural barriers.

Method

A three-phased approach was used to gather this information:

- Phase 1: National information pertaining to breastfeeding strategies and behaviour.
- Phase 2: Corporate information regarding breastfeeding policy and practices within the research setting.
- Phase 3: Analysis of the influences of personal cultures of the researcher and Thai health professionals.

Setting

Data collection took place in a university hospital in northern Thailand, which is a regional referral centre for women and has an approximate birth rate of 2000 per annum. Observations were completed in each context where routine breastfeeding instruction occurred. A convenience sampling approach was implemented and women and staff were offered an explanation of the study and consent forms given prior to each observation session. A total of 75 hours of observation were completed in eight environments of potential breastfeeding instruction.

Ethics

Ethical approval was obtained from Ulster University and Chiang Mai University.

Data collection and analysis

Data were collected using a semi-structured observation schedule and a field diary to gather cultural and contextual, as well as motivational, content of routine breastfeeding instruction.

Phase 1: National culture

Data were collated and mapped at a national level. This included a synthesis of national policies and breastfeeding strategies, current national breastfeeding rates and their implications for practice. All health and welfare policies affecting breastfeeding behaviour were identified and mapped. Additional information was gathered regarding the organisation and implementation of national health services, medical and nursing training and

the contribution of professional bodies. The role of the media and messages communicated through the media including magazines, formula advertising on television and radio and messages communicated through popular mediums were also identified and mapped for influence on breastfeeding behaviour.

Phase 2: Organisational culture

Corporate information relating to breastfeeding policy and practices within the hospital setting was collected during the preparation time prior to and during the observation period. Information was gathered through identifying and mapping all hospital breastfeeding policies, the environments where breastfeeding instruction was offered, the organisational culture and individual roles, responsibilities and practices. Meetings were held at various levels within the hospital, with key health professionals and staff to identify potential gaps and challenges related to breastfeeding instruction and hospital organisational culture.

Phase 3: Personal culture

The importance of intercultural competence is being increasingly recognised across the global spectrum of business, educational organisations, corporations, government and non-governmental organisations as a central requirement for the 21st century (Hammer, 2011). The influence of personal culture had to be recognised and evaluated during the observation process to limit bias and potential cultural miscommunication. Data verification included consultation with the Thai research team for clarity of understanding for cultural influences and values. A Western colleague who had grown up in Thailand and had an in-depth understanding of the language and culture was also consulted.

Findings

Phase 1: National culture

Thailand is an upper middle income country in South-East Asia with an estimated population of 67 million, most of who are predominantly ethnic Thai (The World Bank, 2013). International health policies, such as the millennium development goals and the concept of 'Health for All' policies (WHO, 1998), have been incorporated into national policies to develop a more holistic approach. Thailand, as a member of the WHO, has followed the WHO guidelines in implementing health policy. This has included 'Healthy Thailand' in 2003 and the Universal Healthcare coverage policy in 2001 (Ministry of Public Health, 2006), which introduced a system of health care for all if they have access to a health card known as the '30 baht' card. The Healthy Thailand (2004-2008) public health policies, based on WHO recommendations (Ministry of Public Health, 2006), were implemented to encourage healthy lifestyle choices. These include a vision to enable everyone in Thailand to have access to quality health services and live in a healthy environment (Bureau of Policy and Strategy Ministry of Public Health, 2006). Set up in 1989, the National Breastfeeding Project established a set of recommendations including the promotion of the Baby Friendly Initiative (BFI), legislation on access to maternity leave and the implementation of the *International code of marketing of breastmilk substitutes* (WHO, 1981) and related products (Hangchaovanich and Voramongkul, 2006).

National surveys completed by the Department of Health and the Ministry of Public Health in 1996, 2000 and 2002 showed increasing rates of breastfeeding in comparison to 1993, but the rates of exclusive breastfeeding to six months remained lower than the government target of 30% by 2006 (Department of Health and Ministry of Public Health, 2006; 2002; 2000; 1996; 1994). This target was set by in the Ninth National Development Plan and has now been extended (Department of Health and Ministry of Public Health, 2006).

Breastfeeding rates were reported at 49.6% initiation rate, with a 5.4% exclusive breastfeeding rate at six months (World Breastfeeding Trends Initiative, 2010), which reflected one of the lowest exclusive breastfeeding rates in South-East Asia. This information was based on Multiple Indicator Cluster surveys completed in 2006 (National Statistical Office, 2007); however, a more recent report suggested an exclusive breastfeeding rate of 15.10% (Trading Economics, 2014). Data in Thailand is collected through a range of systems, including government surveys such as hospital project surveys, Family Bonding Reports, Education for All assessments, Multiple Indicator Cluster surveys, Demographic and Health surveys, national household surveys and data from routine reporting systems. These systems are used by the WHO and UNICEF for their data collection as well as the United Nations Population Division. The international statistics are evaluated and adjusted by WHO, UNICEF and UNFPA to account for under-reporting and misclassification. Although Thailand does have some centralised and documenting services, there are areas where it still appears fragmented, in part due to the range of care offered between the various health services including government, private and university hospitals. A further example of this fragmentation is the implementation of the BFI within the government hospitals, but with more limited implementation within the other sectors. Although Thailand has a voluntary agreement to the *International code of marketing breastmilk substitutes* (WHO, 1981) formula milk is widely marketed through media outlets, including television, commercials, and posters (Phoutthakeo et al, 2013). Breastfeeding is still considered the traditional infant-feeding practice in many parts of Thailand, but Thai culture is changing and practices such as 'Yu Duan' (staying at home for a month) and 'Yu Fai' (lying in front of the fire) rituals are diminishing, as well as restrictions for the maternal diet, particularly in urban populations (Kaewsarn and Moyle, 2000). Maternity leave is available by national legislation for up to 14 weeks. Private sector maternity leave allowance is 90 days with 45 days paid by the employer and 45 days covered by Social Security. For government employees, the entitlement is 90 days by the government and up to 150 days unpaid leave.

Phase 2: Corporate culture

The next step in the information analysis was the mapping of the corporate culture (see Figure 1, overleaf). This allowed an exploration and analysis of the healthcare context in which the breastfeeding instruction was being given. As suggested by Gardenswartz et al (2003), the following areas were identified and evaluated to inform the contextual and cultural evidence being gathered.

Corporate information was gathered about shared values, beliefs, guiding principles, organisational culture and everyday practice within Chiang Mai University Hospital and the maternity unit.

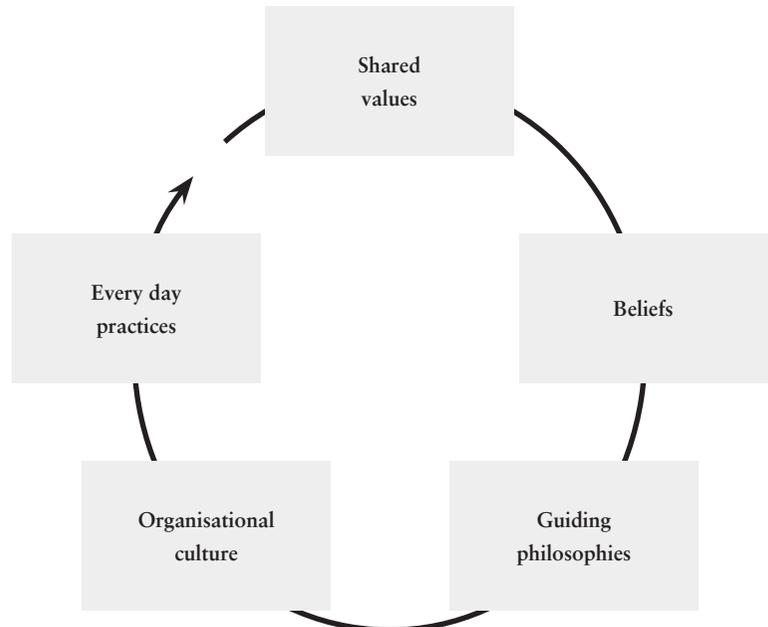
In the early 2000s, the medical leadership within the paediatric department, which takes responsibility for infant care and breastfeeding education, changed and a new senior doctor was appointed. Within the maternity unit, a high value for breastfeeding was encouraged and supported with multiprofessional buy-in. This belief was implemented into a guiding philosophy that breastfeeding is the best option for mothers and babies.

The university hospital was not a recognised Baby Friendly hospital, but implemented many of the recommended policies advised by the BFI (WHO and UNICEF, 2009) and breastfeeding guidelines and policies were developed and implemented. Traditional Thai culture is very focused on teamwork and all of the changes undertaken were done in consultation with staff. The *International code of marketing breastmilk substitutes* was adhered to within the unit, unless it was deemed necessary by medical staff to give formula. Other policies included the Baby Friendly '10 steps to successful breastfeeding' (WHO and UNICEF, 1989), which were implemented in the seven instructional environments. These included the training of staff in breastfeeding practices, informing women regarding the benefits and management of breastfeeding, assisting women with initiation of lactation within half an hour of birth and encouraging the practice of rooming in. The *Ten steps to promote and protect breastfeeding for vulnerable infants* (Spatz, 2004) were also implemented in the special baby care units and nurseries.

These policies were observed as everyday practices throughout the observation period in each unit. Breastfeeding and skin-to-skin, where possible, were encouraged within half an hour of birth. Women were taught within four to six hours of arrival on the postnatal wards how to prepare and massage their breasts and hand express. Assistance was given by nurses when positioning and latching the infants. Twice a day the women gathered in the centre of the ward for teaching sessions with midwives that demonstrated how to apply warm cloths, massage and hand express to help stimulate the milk supply. This was generally done in groups, but if a woman was recovering from surgery, the midwife would assist at the bedside. Breast pumps were available on the ward at any time and rooming in was normal practice on the ward as babies slept with their mothers. An increased level of breastfeeding support was observed in the first two days. An emphasis on breastmilk expression was observed within the unit to help to stimulate and increase milk supply.

The average stay in hospital was three to five days and the impact of this cannot be underestimated. During the last two days in hospital, two additional classes were offered to mothers and included the postnatal discharge class, offering a range of information on breastfeeding, practical care of the mother and baby in the postnatal phase, recognising signs of illness and information on help available on discharge. While care was limited for mothers and babies in the

Figure 1. Schematic diagram to show evaluation process of corporate organisational culture implemented in this process



community, paediatric follow-up appointments were given and information was offered regarding the lactation clinic within the unit which women could attend if experiencing breastfeeding problems. A second class, the breastfeeding self-efficacy class, was also offered between day three and day four. This class was led by nurses from the lactation clinic and was introduced in the unit by the lead nurse in the lactation clinic following an internal research project that examined self-efficacy in breastfeeding mothers in the hospital (not published). This class consisted of one video of a mother explaining her breastfeeding experience and challenges and a second video of the lactation nurse explaining positioning and latch while watching two mothers feeding.

Observation of breastfeeding goals was a key aspect of this study and during the educational classes, these were categorised into:

- Purpose goals – these included messages to women about the reasons why they should consider breastfeeding.
- Target goals – these were specific ways mothers can learn to breastfeed, including positioning and attachment.
- Performance feedback goals – these included confidence in positioning the infant on the breast, evidence of milk flow and supply, wet and dirty nappies.

The self-efficacy classes were designed to build a mother's confidence in her breastfeeding effort and increase her persistence with the newly learned behaviour.

In this Thai context, the above goals were evident within the classes offered, including the peer support provided, and were visible in the written materials, where there was a strong emphasis on the cultural value of breastfeeding to Thai women and the Thai population. A high value on staff training in breastfeeding instruction and teamwork was also evident in the analysis and all members of the multiprofessional team were encouraged to attend training both outside and within the hospital and apply it to their practice.

Thai culture values and operates within a hierarchical system and with the implementation of the breastfeeding policies in the early 2000s, the organisational culture also appeared to change. During the observation phase, there were seven settings within the maternity unit where breastfeeding instruction was offered. Within each of these, midwives were appointed as breastfeeding instructors. These midwives took responsibility for both breastfeeding instruction and, with support from human resources, training of staff. As the value of breastfeeding appeared to increase within the unit, many of these midwives appeared to adopt the role of 'breastfeeding champions'. Of note however within this unit, the role of breastfeeding support was not left simply to the breastfeeding champions, but rather adopted by all staff into everyday practices. Annual evaluations were completed by senior nurses and human resources and training needs were identified and addressed. The value placed on breastfeeding was observed through everyday practice as the midwives encouraged and supported mothers both individually and in groups. Breastfeeding was promoted throughout the unit as the best option for infant nutrition, but a pragmatic medical approach was adopted that if an infant required additional nutritional support (formula), it would be prescribed with lactation support to increase maternal milk supply.

Phase 3: Individual culture

It may be argued that for social scientists to fully understand the world they are observing they need to have an understanding of their own individual culture. Gardenswartz et al (2003) suggested that personal culture is made up of the following categories: character, traits, skills, ethnicity, family and personality. Each of these components influence the way individuals view the world around them and how they interpret that world. Throughout the analysis of the cultural elements of this study, it was critical to recognise the influence of the personal culture of the researcher and the cross-cultural team. This included the understanding of how world view may influence perspective. While not a new phenomenon, it was important as a core element of the adapted information analysis for the researcher to reflect and analyse how personal culture may affect the results. Therefore, throughout the observations, field diary notes were taken to attempt to record both individual and cultural observations as a way to increase reflexivity. Bhawuk and Brislin (1992) suggested that to be effective in other cultures, people have to have an interest in alternative cultures, have enough sensitivity to notice cultural differences and be willing to modify their behaviour as an indication of respect for the host culture. This term is known as 'intercultural sensitivity'. Examining personal cultures and identifying the differences between the researchers' personal culture and the host culture was pivotal in contributing to increased understanding and cross-cultural communication. Within that context, it was then possible to build more effective cross-cultural relationships, which enabled trust and openness to be built and to gain insight into other aspects, such as character, personality and the approach to teamwork, as well as ethnicity. An example of this was reflected in the response to the ethical approval process. During the course of ethical

approval in the UK, the project was primarily managed by the researcher with support from the research team within the university as is culturally appropriate, whereas in Thailand, the procedure was adopted and owned by the whole Thai research team culminating in the announcement 'our project has been approved' when notified of ethical approval. This cultural attitude had a symbolic influence and required a significant shift of cultural understanding and communication on behalf of the researcher from an individualistic approach to a more collective stance as part of the adaptation development.

Within each step of this process, there was a recognised need for cultural brokering. Jezewski (1990) suggested that cultural brokering is the ability to bridge, link or mediate between groups or persons to affect change between professional and lay people, or between the health professionals, the patient's own community and the broader social system. However, cultural brokering was recognised as a critical component for the success of the cross-cultural adaptation process within this research context. Although the researcher had spent a significant period of time in Thailand, there was still a need for cultural brokering to happen between the Thai research team, the Western research team and the staff and participants who would be involved in the study. Finding common ground, identifying cultural misunderstandings and working to rectify those played a decisive part in building trust and confidence. Reflexivity was required by the researcher and the Thai team to increase cultural understanding. The challenges of communication and preconceived ideas were balanced by the strengths of teamwork, understanding of a common goal and a desire for increased knowledge and wellbeing of breastfeeding mothers.

Discussion

Values are a key element which impact on human motivation at a personal, corporate and national level. They may be considered as socially shared concepts of what is good, right or wrong and are reflected in the symbols, rituals and practices that exist within a country and operate at multiple levels (Sagiv and Schwartz, 2007; Williams, 1970). Values impact on how people perceive, interpret and respond to their world (Rohan, 2000). They also provide researchers with conceptualisations, which allow them to analyse and understand individuals and groups as well as nations and institutions (Knafo et al, 2011). Two seminal theories that exist within value research are those of Schwartz (1999; 1992): the theory of individual values that exist among individuals within cultures and the theory of cultural value orientations which are distinctive between different societies. A further important element of cultural value is the identity found within the culture. Hofstede's (2001; 1980) influential work identifying individualism and collectivism as constructs on opposite poles on a value dimension within world cultures has created an increased interest and renewed debate within social research. As an Asian culture, Thailand would be considered a collective culture with family and elders playing an important role. This cultural value may play an important part in the shift towards a holistic family-centred approach to breastfeeding (McInnes et al, 2013). Western culture is generally viewed as a

more individualistic culture. Individualism was initially used to describe the negative influence of the individual rights on the wellbeing of the commonwealth society, which created a fear that those community values could 'crumble away and be disconnected into the dust and powder of individuality' (Burke, 1973: 109), but Oyserman et al (2002) would argue that this view of individualism describes a world view that is antagonistic to community and collective social structure. Individualism has been defined as having a focus on personal rights above duties, a concern for oneself, immediate family and individual potential, an emphasis on personal autonomy and self-fulfilment and personal accomplishments contributing to or forming the basis of identity (Hofstede, 1980). Waterman (1984) extended this concept into normative individualism with a focus on personal responsibility and freedom of choice with a respect for others. Schwartz (1990) added to this definition by defining individualistic societies as being fundamentally contractual with smaller primary groups and negotiated social relations with specific personal obligations and expectations which conceptualise individualism as a world view that focuses on the personal goals, uniqueness and control (Oyserman et al, 2002).

In a cultural study, the search for these values should be integral to the information-gathering process as it is essential to know and understand the foundations of the culture and how it works in order to identify the cultural elements which are significant within breastfeeding behaviour.

Values that lie at the heart of Thai culture include honour and respect for the monarchy and for the national religion Buddhism. Thailand, similar to Chinese culture, holds a high regard for the family and the tradition of hierarchy, especially towards older family members, and women hold a sense of responsibility and obligation towards family members, seen to arise from the influence of Confucianism (Parks and Chesla, 2007). However this can create additional pressures for Thai women as they face increasing economic pressure to return to work (Yimyam and Hanpa, 2014; Aikawa et al, 2012).

An additional pressure is the limited timeframe of maternity leave in an environment where more women are now working outside the home. The breastfeeding policies adopted by the government appear to be evident, including the BFI, but the range of hospital services within the healthcare system creates challenges for implementation. The national breastfeeding rates are not particularly high, but it may be argued that a value for breastfeeding is reflected in the ambitious breastfeeding targets. The voluntary agreement of the *International code of marketing of breastmilk substitutes* (WHO, 1981) and the influence of the marketing of formula may have an effect on breastfeeding rates as well (IBFAN, 2012). Therefore, although the underlying values of the culture may appear to be supportive of breastfeeding, there are significant influences which could affect breastfeeding behaviour and which may result in the varied breastfeeding practices within this culture.

The national and corporate cultural values were evident within the data collection and information analysis process. The establishment of the shared values and beliefs was assisted by meeting with various members of staff within the midwifery unit, asking strategic questions regarding the start of the

breastfeeding programme, the structure of the policies and the guiding philosophies, which allowed a picture to be built of both the organisational culture and the everyday practices of staff within the unit prior to the observation stage of the information analysis. During this stage, the collective nature of the culture and the respect for hierarchy was demonstrated with introductions to each of the heads of department at the beginning of the observations. This was organised by the lead researcher within the Thai team (a neonatologist who facilitated each stage) and the lactation nurse who played a key role in facilitating the information-gathering process. Relationship building continued as an important part of the proceedings and each day, prior to data collection, the researcher would meet and pay respect to the head nurses. This partnership emphasised the value of cultural practices and norms within the research setting. Identifying the roles and relationships between policy-makers, medical staff, midwives and breastfeeding champions assisted with this analysis.

The value placed on breastfeeding was noticeable within the maternity unit. While individual breastfeeding instruction was given, particularly on the postnatal ward regarding position and latch, the women were gathered together by the nurses and instructed in breast massage, preparation of the breast before feeding and breastmilk expression at least twice a day. This was observed in all the postnatal environments. On each occasion, the women were observed to show respect for the nurses, but were also comfortable participating in the instruction within the group. Although the midwives were particularly active in supporting the women in the first two to three days, the women often advised and assisted each other, particularly in the lactation clinic and after the postnatal classes, offering a level of peer support which reflected the collective nature of the culture.

Schwartz (1990) defined collectivist societies as communal societies characterised by diffuse and mutual obligations and expectations related to status. Within these societies, social units hold common goals and values which are centralised (Triandis et al, 1995).

Western culture is recognised as being more individualistic, with a focus on individual's choices, goals and rights, while Thailand reflects the more Asian value of a collective culture where the choices and values are made on the basis of the wider family and community. Within this hospital setting, breastfeeding was emphasised as a Thai cultural value, particularly within the organisational culture. However, the values were reflected by the individuals as well. The breastfeeding champions appeared to work hard to promote breastfeeding to both the women and staff and there appeared to be a link between the individual values and the collective value of breastfeeding at a staff level. Through the promotion of breastfeeding, training of staff and support for staff and mothers, a value of breastfeeding practice appeared to be modelled from the top down through both the medical and nursing staff. This value and ownership of breastfeeding by the breastfeeding champions and staff resulted in an environment where breastfeeding was the norm as a feeding method. As this occurred, there appeared to be less of an emphasis on individual choices as would be expected in western cultures, and more of an emphasis on the cultural value of breastfeeding.

Conclusion

The adaptation of the cultural model into a breastfeeding context gave an additional framework to collect, organise and analyse the data at national, corporate and personal levels. While the national culture may have some conflicting consequences, the high value of breastfeeding within the organisational culture was evident in everyday practices. This included the implementation of BFI breastfeeding policies, ownership of the breastfeeding instruction by the staff and a sense of collective purpose and teamwork. Cultural

components played a key part in creating a supportive environment for mothers to begin their breastfeeding experience, meet their breastfeeding goals and overcome potential breastfeeding barriers. The systematic process of gathering information about the educational and cultural components of breastfeeding behaviour and practices in a Thai setting, using a combination of the ARCS model by Keller (2010) and Gardenswartz et al (2003), provided an enriched understanding of the interplay between the individual and societal factors evident in this unique culture.

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Pre and post survey findings from the Mind 'Building resilience programme for better mental health: pregnant women and new mothers'

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Abstract

Background. During the childbirth continuum, pregnant women and new mothers can be at increased risk of mental health problems. Exploring ways to build resilience to promote health and wellbeing is an important aspect of care. The links between mental health, physical health and social support need to be taken into consideration. Mind, a mental health charity in the UK, has recently developed a triad model for building resilience to promote better mental health. Practical activities in a group setting are planned to engage people in a structured way, enhance their sense of wellbeing, and provide a context for developing social connections and reduce social isolation. The programme then delivers a core resilience coping strategies course. These factors combined contribute to improved resilience and build self-esteem.

Aim. The aim was to compare data collected at the start and completion of the resilience programme to identify if there was any change to pregnant women's and new mothers' self-perceived resilience.

Methods. A purposive sample of pregnant women and new mothers were recruited via a Mind awareness campaign that targeted several venues, such as supermarkets, children's centres, maternity services, housing associations, libraries, and community groups.

A total of 190 pregnant women and new mothers were recruited to participate in the Mind 'Building resilience for better mental health' project. Pre and post survey data as part of a mixed methods study evaluation were collected. Four local Mind sites representing a diverse population within urban and rural regions in England were selected to pilot the resilience project. Following ethical approval, a structured questionnaire, comprising three sections of measures relating to wellbeing: how positive women felt about solving problems and achieving goals, and levels of social support, was used to collect pre and post intervention data. A combined score was calculated by adding together the totals from the three sections representing the dimensions of resilience. Confidence intervals, 95% of the mean change in scores from pre to post stage were calculated. Paired (related samples) t-tests were used to assess statistically significant differences in mean scores.

Results. A sample of 108 pregnant women and new mothers returned a pre and post survey questionnaire. From this sample, 91 participants completed all questions relating to the three dimensions of the Mind 'Building resilience model evaluation'. Findings demonstrated that by attending a building resilience programme for mental health, pregnant women and new mothers developed and maintained resilience. Combined total scores for the three dimensions of resilience (wellbeing, coping strategies and self-efficacy and social connections), involving four pilot sites demonstrated a statistically significant improvement from pre to post measurement scores.

Conclusion. The Mind 'Building resilience for better mental health' model promotes engagement in positive activities and helps to build social connections and reduce social isolation. Learning some coping strategies about mood and mind has helped pregnant women and new mothers to build resilience to stay well.

Key words: Pregnancy, motherhood, mental health, resilience, peer support, befriending, evidence-based midwifery

Background

Pregnant women and new mothers

Pregnancy, birth and becoming a mother are major life events that require good support and care to promote optimal health and wellbeing. Pregnant women and new mothers are at increased risk of developing a mental health problem or exacerbating existing mental health problems. It is estimated that up to one in seven women experience a mental health illness at some point during the childbirth continuum (NICE, 2007). Birth trauma can also trigger a post-traumatic stress disorder. Women can develop anxiety and panic symptoms,

use avoidance behaviour and suffer from flashbacks and nightmares, which may lead to depression. In addition, mothers are under increasing pressure to invest heavily in their infant's physical health and wellbeing. Mothers have to balance their time, energy, finances and own physical and emotional health needs and this can take its toll and lead to maternal exhaustion and depression (Kingdon, 2009). In severe cases, mental health problems can lead to maternal suicide (CMACE, 2011).

It is, therefore, an important women's health issue to find ways to meet the needs of expectant and newly delivered

mothers who have an ongoing problem or are at risk of developing a mental health problem during pregnancy, childbirth and following birth (Steen and Steen, 2014). It has been suggested that up to 16% of women may require a mental health intervention during the antenatal and postnatal period (NICE, 2007). The importance of intervening early has been described in the government strategy for mental health – 'No health without mental health' (Department of Health, 2011). Poor mental health and, in particular, postnatal depression is associated with poorer quality of life for mother and child, but there is some evidence to demonstrate that social support has been shown to be beneficial (Darcy et al, 2011). In particular, peer support from other local mothers and befriending from local community groups and services have been shown to be helpful (Molloy, 2007; Johnson et al, 2000). An important aspect to consider when exploring ways to enable pregnant women and new mothers to maintain good levels of health and wellbeing is how they learn and develop resilience. Resilience involves being able to face challenging circumstances while also maintaining a positive mental health status. The UK's national charity Mind has a strategy for 2012-16, which includes the prevention of mental health problems by supporting people to build resilience and stay well (Mind, 2012).

The model

The Mind resilience pilot programme for better mental health targeted two vulnerable groups, pregnant women/new mothers and older unemployed men, as evidence suggests they are particularly susceptible to developing mental health problems (McManus et al, 2012; CMACE, 2011). This paper focuses on the pregnant women/new mother's pre and post evaluation component of the Mind resilience programme. The overarching purpose of the programme was to develop stronger levels of social networking and a range of coping strategies to build pregnant women's and new mothers' resilience to mental health problems and hence promote wellbeing. Mind has recently developed a triad model for building resilience to promote better mental health (Holloway, 2013). This model encompasses wellbeing, psychological therapies and social capital aspects and supports a range of coping strategies, which build self-esteem and confidence in local settings.

The Mind resilience model highlights the importance of three key elements in reducing the likelihood of mental health problems for pregnant women and new mothers:

- Positive activities, such as exercising outdoors (pram walks), needlework, art and crafts that are known to promote wellbeing, as a basis for good mental health.
- Building social networks, such as peer support and befriending, as there are benefits from good-quality human relationships to help pregnant women and new mothers respond to adversity and challenges.
- Developing psychological coping strategies, based on principles of mindfulness and cognitive behavioural therapy (CBT), as these are known to promote positive thoughts and have a calming element.

The promotion of wellbeing (feeling good and functioning well) can be supported by the five ways to wellbeing, as set

out by the New Economics Foundation (NEF, 2008). These five ways are: connect with others, be active, take notice, keep learning and give. Mind's recent focus towards building resilient communities has found that 'connect' underpins the other four aspects of wellbeing (Mind and Mental Health Foundation (MHF), 2013). Resilience, in this model, is viewed as 'the capacity of people to confront and cope with life's challenges and to recover from or adapt to adversity' (Mind and MHF, 2013: 11). Building upon this approach, the Mind model of resilience views enhanced coping strategies and expanded social capital as contributing in the longer term to the maintenance or improvement of a person's wellbeing as they live through varying circumstances.

Aim

The aim of the survey was to compare data collected at the start and completion of the programme to identify if there was any change to pregnant women's and new mothers' self-perceived resilience. The objectives were to pilot the new resilience model, targeting three specific aspects for wellbeing, and explore if this made an impact on levels of resilience.

Methods

Design

A pre and post survey method was used to collect quantitative data from pregnant women and new mothers. A purposive sample of 190 pregnant women and new mothers was recruited via a Mind mental health awareness campaign to participate in the Mind resilience programme. This campaign targeted several local venues, such as supermarkets, children's centres, maternity services, housing associations, libraries, and local community groups. This instigated a ripple effect and some participants became aware by a third party, such as a family member, friend, neighbour or colleague. These women were recruited to participate in a larger study that was utilising a mixed methods design to evaluate the Mind 'Building resilience for better mental health' model, which was funded by the People's Health Trust. Practical activities in a group setting were planned to engage women in a structured way, enhance their sense of wellbeing, and provide a context for developing social connections and reducing social isolation. The programme would then deliver a core resilience coping strategies course. These factors combined would contribute to improved resilience and build self-esteem.

Four local Mind sites were chosen to represent a diverse population in both urban and rural regions in England. The four pilot sites delivered the Mind resilience model programme with some flexibility in the design and mode of facilitation, as it was acknowledged that the local Mind facilitators had first-hand experience, knowledge and awareness to meet the specific needs of their local population of pregnant women and new mothers (see Table 1, overleaf).

The local Mind resilience project began in May 2013. The allocated time from start to completion of delivery and evaluation of the pilot study was 12 months. Prior to collecting data, local Mind project managers and coordinators representing the four pilot sites were briefed thoroughly about the purpose of questions and the need to undertake

Table 1. Summary of pilot sites' methods to building resilience

Pilot Sites	Planned length	Sequence and timing	Resilience strategies	Planned activities	Approach to social networks	Location
1	Six months	Offered one-to-one befriending weekly for up to six months and/or invited to six-week wellbeing course running for two hours a week.	Six-week wellbeing course looks at managing expectations, self-esteem, five ways to wellbeing, stress and relaxation, relationships.	Individual assessment, review meeting to plan goals and actions. Drop-in for mothers and babies with toys, peer support, signposting every two weeks. Coping strategies.	Befriending partnership with goal of increasing social networks and increasing confidence in attending local groups/support.	Mind centres, women's homes.
2	Six months	Six weekly sessions plus buddy, if needed after. Using volunteers at the workshops with mothers.	Looking at what keeps mothers well, meditation and mindfulness of self and baby. Strategies for overcoming anxiety and stress.	Group work around five ways to wellbeing. Baby signing activities, hand massage, baby mindfulness. Textile and dressmaking.	Group activities. Sharing of information of what's going on locally. Continue to meet at centre after workshops.	Various local children's centres.
3	Six months	Befriending offered to women requiring intensive support. Set at three months, but can be reviewed. Six weekly courses 1.45 hours (1.25) structured input +20 minutes for networking and refreshments.	Courses based on five ways to wellbeing. Each of five ways covered and coping strategies for each area introduced, building self-esteem techniques.	Group work around five ways to wellbeing. Baby bonding activities, mother's hand massage, meditation and mindfulness, Yoga. Look at next steps, such as self-help groups. Befriending with individual mothers.	Aim of each course is to build social networks (two courses led to self-help groups). Befriender works with women individually to support them into groups.	Four children's centres, women's homes and community settings.
4	Six months	Initial home visits, then referral to groups for peer support and support from volunteers. Continued home visits, where necessary.	Ongoing throughout the pilot. Individual-based needs support from workers. Group work based on resilience model. Peer support for emotional wellbeing. Counselling when required.	Group peer work, counselling, meditation and mindfulness. Signposting to courses in children's centres, such as parenting courses and baby massage.	Sharing of local information in the groups. Women meet outside of formal setting for further peer support, attending mother and toddler activities, such as walks organised by women.	Three children's centres, women's homes and Mind premises for counselling.

questionnaire to be matched with a post questionnaire for comparative data analysis. This register was kept and secured safely in a locked cabinet by the local project manager who was responsible for ensuring that the post questionnaire was administered to the same participant by identification of the numerical code. Requirements were set out in a data management plan (DMP) prior to the start of the pilot study. The questionnaire included a series of statements relating to the three aspects of the Mind resilience model and one open-ended question, which gave participants an opportunity to record any additional comments they thought relevant. Six months were allocated to facilitate the locally-developed 'Building resilience for better mental health' programme. Based on current local estimates of numbers attending existing support groups at the four pilot sites, it was envisaged that a sample of 40 women per pilot site was an achievable target to aim for during the allocated six months to deliver the resilience programme.

Data collection

Mind proposed to use three scales that are well-established and validated to cover wellbeing, self-efficacy, coping strategies and social capital, to align with the triad Mind resilience model. Firstly, the Warwick Edinburgh Mental Well-Being Scale (WEMWBS), as it covers subjective wellbeing and psychological functioning and statements are positively phrased (GHK, 2011). Secondly, the Schwarzer-Jerusalem General Self-Efficacy Scale, as it has been found to be a reliable instrument, measuring individuals' beliefs in their capacity to gather resources to perform in given situations (Scherbaum et al, 2006; Bandura, 1997). Thirdly, to measure social capital aspects, the Multi-Dimensional Scale of Perceived Social Support (Zimet et al, 1988). Through a consultation process, involving the evaluation team, the Mind's national team and Mind local coordinating teams, some adaptations were made to the Schwarzer-Jerusalem scale and some items were constructed and modelled on the Multi-Dimensional Scale

pre and post measurements. The importance of participants independently completing the questionnaires was emphasised. The project managers and coordinators would jointly be responsible for the administration and collection of data with support from a national Mind project lead.

Participants

At the start of attending one of the four pilot resilience programmes, participants were given information and an opportunity to discuss any queries or concerns they may have about participating in the programme and evaluation. Verbal and written consent was obtained by the local Mind project coordinator, prior to participants being asked to complete the pre stage questionnaire. A member of the evaluation team delivered pre and post questionnaires that were coded numerically and site specific. A separate register was kept to record information that would enable a participant's pre

of Perceived Social Support. The WEMWBS was used in its entirety. The questionnaire included three sections each made up of a series of related statements:

- Section 1 had seven questions related to wellbeing.
- Section 2 had eight questions related to how positive participants felt and about solving problems and achieving goals.
- Section 3 had eight questions related to levels of social support.

Responses to each statement were assigned a value from 1 to 5 in sections 1 and 3, and from 1 to 4 in section 2. For all statements, the least positive option scored the lowest and the most positive the highest. For each participant, the response scores were added together to give a total for each section. A combined overall score was also calculated by adding together the totals from the three sections:

- The maximum possible score in section 1 was 35, and the minimum was 7
- The maximum possible score in section 2 was 32, and the minimum was 8
- The maximum possible score in section 3 was 40, and the minimum was 8
- The maximum possible combined score was 107, and the minimum was 23.

Some demographic details were recorded to evaluate age range, ethnicity and postcode area. A final open-ended question was included to give participants an opportunity to comment on anything else concerning the Mind project.

Data analysis

Pre and post questionnaires were returned separately and as soon as possible following completion to the researchers. Data were entered into a statistical computer package (IBM, SPSS). The data were examined for any inconsistencies and input double-checked for accuracy. All questionnaire responses were numerically coded using a pre-defined coding scheme. Descriptive analysis of survey data was carried out at the outset and then at the post-measurement stage. A number of inferential tests were performed to examine the relationships between variables. A combined score was calculated by adding together the totals from the first three sections of the questionnaire that represented the dimensions of resilience. Confidence intervals of 95% of the mean change in scores from pre to post stage were calculated. Paired (related samples) t-tests were used to assess statistically significant differences in mean scores.

Ethical considerations

The pre and post survey conformed to the Social Research Association (SRA) ethics framework (SRA, 2003) concerning obligations to society, funders, colleagues and participants. Ethical approval was obtained from Leeds Beckett University (LBU) and the University of Chester. The evaluation team took into consideration the LBU's research ethics policy, which is based

on the UK Economic and Social Research Council's research ethics framework (ESRC, 2015) and the *RESPECT code of practice* (RESPECT Project, 2002-04). Informed consent, confidentiality, secure information management, attention to risk reduction, the right of participants to withdraw from the evaluation were all incorporated into a DMP (Steen, 2013). Respondents completed the pre and post structured questionnaires on a voluntary basis and these were placed anonymously in a collection box at the local Mind venue and then posted to the evaluation team.

Findings

A total of n=108 pregnant women and new mothers (n=92 new mothers, n=16 pregnant women) returned a pre and post questionnaire. This total number represents returned/completed pre/post data for at least one of the questionnaire's sections. However, completed combined total scores for the questionnaire's three sections, representing all pilot sites are calculated on a sample size of n=91. Overall, the survey findings demonstrated that by attending a building resilience programme for mental health, participating pregnant women and new mothers gained resilience for better mental health. Results across all the three dimensions of resilience (wellbeing, coping strategies and self-efficacy and social connections) for the pilot sites showed a statistically significant improvement in pre to post measurement scores.

Demographic findings

Pilot site demographic details relating to age range and ethnicity are presented in Tables 2 and 3 (see overleaf).

Aggregated mean scores

The aggregated mean scores for all sections (1 to 3) by pilot site are presented in Table 4 (see overleaf).

Combined findings for pilot sites

A summary of the combined pilot site findings for the three dimensions of the resilience model (1 to 3 sections) are presented.

Wellbeing score (section 1: Q1-Q7) (n=103)

The mean wellbeing score at the pre stage was 21.15 (SD=5.19). The highest score was 31 and the lowest was 7. At the post stage, the mean score was 25.45 (SD=5.12), with the highest score being 35 and the lowest 8.

Table 2. Age range of participants

Pilot site 1		Pilot site 2		Pilot site 3		Pilot site 4		Sum total	
Frequency		Frequency		Frequency		Frequency		Frequency	
16-20	3	16-20	1	16-20	4	16-20	1	16-20	9
21-25	7	21-25	4	21-25	12	21-25	4	21-25	27
26-30	6	26-30	6	26-30	11	26-30	3	26-30	26
31-35	9	31-35	11	31-35	5	31-35	5	31-35	30
36-40	2	36-40	2	36-40	3	36-40	4	36-40	11
41-45	1	41-45	2	41-45	1	41-45	1	41-45	5

Table 3. Ethnic groups

Ethnic origin	Pilot site 1	Pilot site 2	Pilot site 3	Pilot site 4	Sum total
	Frequency	Frequency	Frequency	Frequency	Frequency
White	19	22	31	16	88
Black	4	1	0	0	5
Asian	3	2	3	1	9
Mixed	2	0	2	0	4
Prefer not to say	0	1	0	1	2

The mean change in score was 4.30 (SD=5.34) and the 95% confidence interval was 3.26 to 5.34, which is indicative of significant change. This is supported by the results of the paired t-test, which suggested there was a statistically significant improvement in wellbeing scores from pre to post stage (t=8.175, df=102 p<0.001).

Problem-solving and achieving goals score (section 2: Q1-Q8) (n=101)

The mean problem-solving and achieving goals score at pre stage was 20.25 (SD=5.97). The highest score was 31 and the lowest was 8. At the post stage, the mean score was 24.35 (SD=5.31). The highest score was 32 and the lowest was 13.

The mean change in score was 4.10 (SD=5.18). The 95% confidence interval was 3.08 to 5.12, which is indicative of significant change. A paired t-test also suggested statistically significant improvement in problem-solving and achieving goals score from pre to post stage (t=7.947, df=100, p<0.001).

Social support score (section 3: Q1-Q8) (n=101)

The mean social support score at the pre stage was 27.86 (SD=7.11). The highest score was 40 and the lowest was 10. At the post stage, the mean score was 31.33 (SD=6). The highest score was 40 and the lowest was 15.

The mean change in social support score was 3.47 (SD=5.52). The 95% confidence interval was 2.38 to 4.55, which is indicative of significant change. A paired t-test also suggested statistically significant improvement in social support score from pre to post stage (t=6.311, df=100, p<0.001).

Table 4. Aggregated mean scores (section 1 to 3)

	Mean baseline (SD)	Mean post (SD)	Max baseline	Min baseline	Max post	Min post	Mean change	95% CI	Sig
Pilot site 1 (n=25)	61.84 (16.85)	77.32 (12.08)	95	36	105	56	15.48 (12.96)	10.13 to 20.83	<0.001
Pilot site 2 (n=25)	79.32 (10.85)	84.56 (9.59)	92	61	98	63	5.24 (11.43)	.523 to 9.96	0.031
Pilot site 3 (n=28)	68.36 (16.08)	85.68 (18.42)	94	27	107	42	17.32 (12.78)	12.37 to 22.28	<0.001
Pilot site 4 (n=15)	69.08 (13.76)	72.92 (11)	94	38	100	49	3.85 (14.57)	-4.96 to 12.65	0.360

Differences in pre and post measurement responses for individual questions

Responses were significantly more positive at post stage than at the pre stage for all statements except:

“I feel supported by my partner or someone close to me when I have an important decision to make” (z=-1.841, p=0.066).

Combined score (section 1 to 3) (n=91)

The mean combined score at pre stage was 69.68 (SD=15.92). The highest score was 95 and the lowest was 27. At the post stage, the mean combined score was 81.25 (SD=14.31). The highest score was 107 and the lowest 42.

The mean change in overall score was 11.57 (SD=13.82). The 95% confidence interval was 8.69 to 14.45, which is indicative of significant change.

A paired t-test also suggested statistically significant improvement in overall score from pre to post stage (t=7.984, df= 90, p<0.001).

All responses to the post stage question ‘Is there anything else you would like to add about your experience of the Mind project?’, were positive. Responses included:

“I have really enjoyed this experience and have appreciated the support I have received. I have learnt a lot.”

“I’ve learnt many techniques through Mind and how to survive through everyday events.”

“I found the whole experience very helpful, mostly to give emotional and psychological support and helping me with my motivational issues.”

“I learnt that the perfect mum doesn’t exist and I’m a good enough mum and other mums feel the same too.”

“The Mind project is absolutely invaluable. Had it not been for the excellent help and support that I received... I would not have learned how to cope with the everyday issues that were causing me immense stress.”

“I find talking helpful as I don’t see my friends very often and cannot talk to my partner and I always feel like I can deal with things a bit better and see them from another point of view.”

Discussion

Developing skills and coping strategies to be resilient during pregnancy and when becoming a mother are essential for maintaining maternal mental health. There is good evidence to show that during pregnancy and the first year following childbirth, anxiety and depression are a common phenomenon and these mental health problems can stand alone or present as co-morbidities (Wylie et al, 2011; Milgrom et al, 2006; Robertson et al, 2004).

Pregnant women and new mothers are also susceptible to other mental health problems, such as panic attacks and eating disorders (Steen and Green, 2015; Steen, 2009) that can have adverse effects on physical health and

wellbeing. In addition, there is also cumulative evidence that demonstrates detrimental health and wellbeing outcomes for an infant when a woman has poor mental health during pregnancy and following childbirth, which is associated with bonding and attachment issues (Steen et al, 2013; O'Connor et al, 2002).

If poor maternal mental health is not recognised and the necessary care and support is not received, then long-term adverse effects have been reported with regards to a child's and adolescent's emotional, behavioural, cognitive and social skills (Halligan et al, 2007; Robertson et al, 2004).

Therefore, the prevention of mental health problems and supporting pregnant women and new mothers who are particularly at risk, to build resilience and stay well is vitally important. However, a meta-analysis of systematic reviews of interventions to improve maternal mental health and wellbeing identified the need to focus on wellbeing, rather than specifically on mental illness (Alderdice and McNeill, 2013). A total of 32 reviews were identified and these varied in methodological quality and study design. The researchers reported that no review identified an intervention in the perinatal period that could be definitively recommended in clinical practice. It appears that research in this important area of women's health care has focused on intervention for depression rather than stress and anxiety and is more aligned with a pathological perspective than a preventative approach.

Providing care and services to assess, prevent and treat the mental health needs of pregnant women and mothers appears to be complex, costly and has implications for the next generation. A recent report which focused specifically on the influence of economic and social impact of maternal anxiety, postnatal depression and psychosis in the long term has estimated that £8.1bn for each one year cohort of births in the UK is spent (Bauer et al, 2014). Interestingly, a higher percentage of the costs relates to the adverse effects on the infant rather than the mother, which shows the impact maternal mental health has upon society and why it is a public health priority to address. The cost evaluation was commissioned by the Maternal Mental Health Alliance (MMHA), who have reported maternal health care and services to be 'patchy' throughout the UK; if maternal mental health problems were identified early and then treated effectively, many of the serious and long-term economic and social impact costs could be avoided. There appears to be a disconnection between maternity services and non-government organisations. Bridging this gap needs to be considered urgently, as this could lead to an improvement in offering and providing preventative approaches, such as promoting resilience for better maternal mental health.

The MMHA is a coalition of over 60 organisations in the UK who are committed to improving maternal and infant mental health and wellbeing during pregnancy and following birth (MMHA, 2014). Mind is one of these organisations and supports the recently launched campaign 'Everyone's business', which focuses on three routes to improved maternal mental health: awareness, education and action.

The pilot sites involved in this evaluation have also focused on these three routes when introducing the building resilience

model for better mental health. The Mind resilience triad model is in line with the UK government's strategy to develop a life-course approach to build self-esteem, confidence and resilience right from infancy (Marmot, 2010). This building resilience initiative has been designed to fill a gap in services and focuses on preventative ways to maintain and manage maternal mental health.

Accessing specialist mental health services is an important issue to address, especially when a pregnant women or new mother has an existing mental health problem; unfortunately, many pregnant women and new mothers are not recognised to be at risk when in fact they are. Distinguishing between the normal transition of physical and emotional/psychological changes that occur during pregnancy and following birth, and recognising episodes of anxiety and mild to moderate levels of depression is a challenge for health professionals and the general public (Robertson et al, 2004). This is complicated by the issue that many women will not disclose for fear of being judged and perceived as a 'bad mother' and the chance that their baby may be taken into care (Steen and Steen, 2014).

The Mind building resilience model introduced and piloted at the four local Mind sites appears to meet a significant gap in addressing the needs of this cohort of vulnerable women. The model evaluation has provided a unique opportunity to learn first hand about how effectively the Mind resilience model works. Positive activities, building social networks and developing psychological coping strategies appear to be helpful ways to develop resilience in pregnant women and new mothers who participated in this study. Improved mental health and the ability to maintain wellbeing through enhanced social capital opportunities and better access to social networks that 'connect' the ways to promote wellness have been demonstrated. However, there was some variation between the pilot sites and this may have been influenced by the risk of isolation, which may be social or rural in nature. The pilot sites that had higher retention rates and completed more pre and post surveys were from urban areas.

Pregnant women and new mothers can be vulnerable to becoming socially isolated, but rural isolation was also identified in this study as having an impact on some participants' susceptibility to mental health problems. Nevertheless, this evaluation confirmed previous findings that peer support and befriending are one of the essential components to promote better maternal mental health. It has been reported that pregnant women and mothers who attended a maternal health and wellbeing community programme highly valued the opportunity to meet other pregnant women and mothers who could empathise with their situation and offer support (Steen, 2007). However, this element alone may not prevent mental health problems and a combined approach that focuses on meeting the physical and psychological needs of individual women in their own community setting has been shown to be beneficial in this evaluation. Interestingly, this evaluation showed some non-significant changes from pre to post intervention data when measuring the statements of: 'not being able to talk about my problems with family', or 'not feeling supported by my partner or someone close to me when I have an important decision to

make'. This indicates how personal and family relationships can affect a woman's ability to be resilient and is an area for further exploration. There is good evidence to show that when a mother is depressed, the father is also at risk (Paulson et al, 2009; Ramchandani et al, 2005). Building resilience for better mental health is, therefore, also an important issue for fathers.

In summary, this evaluation has demonstrated that an improved maternal mental health and wellbeing status when the Mind building resilience triad model was used to facilitate local community care and support for pregnant women and new mothers.

Limitations and strengths

It is well recognised that survey methodology like other research approaches has limitations and strengths. Therefore, the evaluation team has included limitations and some strengths identified in the undertaking of this pilot study. A reduced number of post questionnaires being returned is an identified limitation. Some reasons given for non-return of post questionnaires were local Mind managers' and coordinators' workloads, time constraints for staff and participants and the fact that several women were transient and moved on and did not complete the resilience programme and post questionnaire. However, the majority of pre and post questionnaires were completed independently by participants themselves, therefore, the potential for bias would arguably be less than if questionnaires were completed with the assistance of the local Mind coordinators providing the resilience programme.

It was reported to the national Mind project lead that a small number of participants had recognised learning difficulties and permission was given for a support worker to help these disadvantaged women to complete the pre and post questionnaires. The potential for introducing bias in these circumstances could be debated, as often these women are under-represented in research studies and therefore, the population at large is not represented. Nevertheless, a recognised strength in the study design was that the questionnaires incorporated validated measurement scales and these add credibility to the responses that were returned.

Stigma and shame is associated with mental health and preventative approaches can be misunderstood and this may have contributed to some women – in particular from culturally and linguistically diverse backgrounds – not completing the full programme. Some participants were also struggling to cope during the transition to motherhood and this may have hindered their motivation and ability to complete the resilience programme and follow-up questionnaire. This pre and post survey was part of a mixed methods approach of a larger study and this may have contributed to a reduction in the number of post questionnaires as women were also asked to participate in individual interviews and focus group interviews.

Recruiting pregnant mothers was also an identified limitation during this evaluation. Three of the pilot sites managed to recruit a small number of pregnant women and one did not. It was clear that the local pilot sites had

established good partnership-working relationships with local children's centres and had access to new mothers and therefore were able to recruit from these centres and also other community support groups. In contrast, it emerged during the introduction and facilitation of the building resilience programme that better partnership-working relationships needed to be developed with local maternity services.

This pilot study involved one sample group of participants recruited from four local Mind sites and, therefore, it is difficult to attribute impact with certainty to an intervention when there was no clear control group. While participants acted to a certain extent as their own control by providing both pre and post survey responses, the findings are susceptible to two types of bias: maturation bias and regression to the mean. Maturation bias is where a cohort of people has a tendency to change over time due to things other than the intervention. Regression to the mean occurs when people are deliberately selected for a study because they have high or low scores on an outcome measure, and when measured a second time, on average, their scores have improved. While participants in this study weren't selected because they had low scores, regression to the mean could still be a factor in changes in performance. However, this pre and post survey was one component of a larger mixed methods study, which also involved unemployed men as a target group; the impact of the intervention reported some improvement for this other target group, but were less favourable than the findings reported within this study (Robinson et al, 2014).

Individual and focus group interviews were also undertaken which supported the positive findings of this study but are not within the scope of this paper (Robinson et al, 2014).

Conclusion

Mental health problems following birth can lead to poor physical maternal health and the impact this can have on the infant's physical, emotional and psychological development is well recognised. It is, therefore, important to consider promoting wellbeing, learning ways to develop coping strategies to manage anxiety and stress, and building supportive networks. Local community support groups can help new mothers to gain confidence in their ability to nurture their baby, have realistic expectations of motherhood, and prevent social isolation. Local community activities help mothers to remain resilient and stay well. The Mind building resilience model appears to help mothers manage and maintain their health and wellbeing and this, in turn, will promote better mental health outcomes for their infants. However, further work is recommended with regard to pregnant women. Establishing better partnership working with local maternity services and mental health services will give opportunities to further explore the impact the Mind building resilience model may have with this specific cohort of women. That said, this evaluation supports the need to work much closer with non-government organisations, such as the national Mind charity, as this can bridge an identified gap in how public and local services may meet the mental health needs of pregnant women and mothers.

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Blokes talking with blokes: feasibility of a 'dads-only' session within an Australian parent education programme

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Abstract

Background. A man's transition to fatherhood is recognised as having a significant psychological impact on his life, identity, and state of mind. If men are feeling marginalised, ignored and unable to meet expectations of their support role, health services need to actively involve men, so that they can adjust to one of the important changes in their lives.

Aim. A feasibility study was undertaken to determine the acceptability and influence of a fathers-only education session facilitated by a male midwife, on parents' anxiety, depression, stress and parenting confidence. Men's resource preferences and feedback in relation to the usefulness of parent education content was collected.

Method. A longitudinal comparative design was used to compare Depression, Anxiety and Stress Scales (DASS) scores prior to parent education and six weeks post-birth. Parental self-efficacy and satisfaction scores were collected at follow up. The study context included parent education offered through midwifery-led care models for women attending an Australian tertiary maternity hospital. Parents received a 'dads-only' intervention session or the standard programme (comparison group). Ethical approval (No. 514QK) was obtained from the quality improvement and human research ethics committees at the study setting.

Results. Of the 115 males recruited, 68 (59%) received the intervention and 47 (41%), the standard programme. Feedback confirmed the session was valued by men. At the six-week post-birth follow up, only 45 men provided DASS and parenting data; 21 (47%) had received the intervention and 24 (53%) the standard programme. Based on a within-group analysis, DASS scores significantly decreased for both groups. Although fewer men in the intervention group at six weeks post-birth had normal anxiety and stress scores, the loss to follow up and small numbers suggest caution in interpreting these results. A common thread of the preferred resources focused upon the parental relationship, practical advice and links to online information. At follow up, parenting satisfaction and self-efficacy scores were comparable between groups.

Conclusions. The intervention was acceptable and useful to men. Loss to follow up was a limitation. The suggestion that a one-off session can influence depression, anxiety and stress scores and parental confidence was unsupported. Feedback on content around parenting and lifestyle, infant care and men's preferred resources may assist in the provision of father-inclusive parent education.

Key words: Father-inclusive practice, parent education, midwifery-led care, parenting confidence, parenting depression, anxiety and stress, evidence-based midwifery

Background

A man's transition to fatherhood is recognised as having a significant psychological impact on his life, identity, and state of mind (Madsen, 2009). Men's involvement across childbirth is supported by three arguments (Draper and Ives, 2013). Firstly, the birth of a child starts with substantial parental responsibilities that last a lifetime and men have legitimate interest in contributing to decisions that shape these responsibilities. Secondly, men's involvement facilitates a shared experience with their partners, who may want and need their presence as a supporter and advocate. Finally, engaging men establishes active and involved fathering in meeting paternal responsibilities which protects the child's interests. However, men have reported feeling 'one step removed' during pregnancy. In order to engage with men, Draper (2002) promoted using body-mediated moments to

include men in pregnancy confirmation, the first ultrasound scan, feeling the baby moving, and the birth itself. Australian qualitative evidence suggested that men feel 'dads do make a difference: they want to be involved and actively seek information to learn their new role as an advocate for their new family' (Tohotoa et al, 2009: 1).

Contrary to the acculturated expectation to be stoic and unemotional, fathers report many emotions prior to birth. Australian expectant fathers shared how they felt excited, thrilled, happy and proud, while two-thirds also felt anxious and a third worried when learning of the pregnancy (Forsyth et al, 2011). Common worries were that their partner would experience pain during labour, the baby would be born with an abnormality, and they would not be able to provide for the family financially (Forsyth et al, 2011). An earlier review confirmed similar concerns, such as fear for the safety of the

mother and the child, anxiety and fear from observing their partner in pain, feelings of helplessness, lack of knowledge about the process, risks of interventions, financial issues and being able to be a good father (Hanson et al, 2009).

A Swedish study investigated first-time fathers' views and found they wanted to be able to communicate freely with their partner and the midwife, receive honest and understandable answers to their questions and have the choice to be involved and to step back when they felt they were intruding (Bäckström and Hertfelt Wahn, 2011). Fathers expressed feelings of helplessness and panic if left out; they wanted to be noticed and included and take an active role (Bäckström and Hertfelt Wahn, 2011). Male partners can find the experience of childbirth wonderful, using words such as 'joy', 'happiness' and 'bliss', but also 'confusing' and 'distressing' (Dellmann, 2004). The recurring theme of being invisible (Widarsson et al, 2012) and 'left out' suggests that health services need to modify their view of maternal and infant care to include the father (St George and Fletcher, 2011).

One opportunity to facilitate men's involvement in childbirth is during their attendance at antenatal parent education sessions. To capitalise on this opportunity, parent education must reflect what mothers, fathers and families want and need (Billingham, 2011).

Hanson and colleagues (2009: 19) asserted that there is a 'discrepancy between what fathers are learning from education sessions (with a focus on the mother and helping her cope), their healthcare providers (who tell fathers they are an equal part of the process, but ultimately the provider makes the final decision), and media sources (which portray birth as painful but short-lived)'.

Another Swedish study found that fathers wanted information specifically addressed to them, the opportunity to ask questions, and to be noticed and 'not overlooked' (Premberg and Lundgren, 2006). Fathers interviewed were disappointed at the lack of focus on their needs in the classes; they felt they were always being put into a secondary role throughout the birthing process. An Australian study of new fathers found that, while they felt classes prepared them for the birth, they did not prepare them for the lifestyle and relationship changes post-birth (Fletcher et al, 2004). Men reported a desire for more practical direction from classes and health professionals, so that they know how to fulfil their role during the birth. Hanson et al (2009: 17) asserted that classes 'give them neither the skills and information they need to feel prepared at the birth of their child, nor the tools they need to support their partner and cope with their own fears'.

An Australian study with first-time expectant parents found they wanted a range of educational options to be able to choose what was best for them (Svensson et al, 2008). Examples of options included a lecture with question and answer format; small group sessions focusing upon in-depth exploration of issues through discussion and a sharing option similar to peer support within a group with parent ownership, but back-up from a facilitator (Svensson et al, 2008). Irish parents also recommended a move away from

didactic teaching sessions with greater participation and involvement as the way forward (Murphy Tighe, 2010).

Another Swedish study with 1117 women and 1019 partners found that parents generally wanted help in preparing for parenthood and in learning infant care skills, followed by help in preparing for childbirth. Men felt that parent education sessions could positively influence their relationship with their partner (Ahlden et al, 2012). Findings from an earlier English study confirmed the need for more information on elements of parenting and baby care, relationship changes and acknowledgement of men's perspectives (Deave et al, 2008).

May and Fletcher (2013) offered greater details in their recommendations for parent education sessions to facilitate men's transition to parenthood. This included: preparation for the relationship and role changes; awareness of their risk of mental distress and depression; guidance on how to be an effective support for their partner; how to foster attachment with their infants through knowledge around interpreting infant communication; reinforcing the importance of building partnering teamwork; and assistance with understanding infant crying.

Further strategies included the use of father facilitators or separate men's groups and breakout sessions with male mentors to address coping techniques for men (Hanson et al, 2009). However, an English study with 49 men from ethnic minority groups found that the gender of the facilitator of antenatal classes did not influence men's participation, although 23 indicated they would prefer a separate class from their partners (Shia and Alabi, 2013).

If men are feeling marginalised, ignored and unable to meet expectations of their support role, health services need to actively involve them, so that they can adjust to one of the important changes in their lives. Evidence suggests providing tailored support during antenatal classes is an effective way to prepare men for the challenges of childbirth and fatherhood.

Earlier research by Fletcher and colleagues (2006) noted that there are limited health services to cater for the needs of men in their transition to fatherhood, despite growing community expectations that fathers will play a central role in their child's life. They suggested health services expand current educational programmes during pregnancy to include fathers-only sessions to discuss the father's role and postnatal adjustment for the couple. Findings from a US study concur with the suggestion to create male-targeted programmes as well as reinforce with health professionals the importance of men's involvement during pregnancy (Alio et al, 2013). As the effects of childbirth or parent education continue to be largely unknown, further research is recommended to evaluate whether new interventions are not only acceptable to parents, but adequately meet the needs of both parents (Gagnon and Sandall, 2011).

Methods

A feasibility study was undertaken to determine the acceptability and influence of a father-inclusive parent education session facilitated by a male midwife on parents' anxiety, depression, stress and parenting confidence. A

longitudinal comparative design was employed to compare anxiety, depression and stress scores with parents prior to parent education and six weeks post-birth. Parental confidence scores were collected at the six-week follow up. In addition, to increase awareness of men's preferences for resources targeted toward men, 20 paper-based resources were made available during the parent education session. Prospective fathers could select the resources they wanted and tailor their dad's information pack to meet their individual needs. Records were kept of which resources were selected. Approval (No. 514QK) was obtained from the quality improvement and human research ethics committees at the study setting.

Low-risk women and their partners attending parent education sessions offered at a full-day Saturday programme through midwifery-led care models at one Western Australian tertiary maternity hospital were the target population. On alternate programme dates, parents were offered the 'dads-only' session in addition to the standard education programme. During this hour-long session, the women participated in a relaxation session or a small group discussion on a topic of their choice with a female midwife.

During alternate programmes, parents received the usual sessions offered in the standard parent education programme and were considered a comparison group. Although parents from both groups completed the initial survey and provided feedback immediately following the parent education session, they confirmed their informed consent for potential follow up and were aware that they could withdraw with no penalty. No parent invited to participate in the intervention was declined attendance in the session, although not all men provided immediate or follow-up data.

A total of 13 intervention sessions and 16 standard parent education sessions were delivered over a 16-month period (2013 to 2014) and data collection continued for a total of 20 months to collect follow-up data. Those parents willing to be contacted six weeks post-birth provided their contact details during recruitment and indicated their preference for a follow-up postal survey or online survey. Up to three attempts were made with each parent to encourage completion of the six-week follow-up survey.

All parents completed the Depression Anxiety and Stress Scales (DASS) prior to the start of the sessions and again at six weeks post-birth. The DASS with Depression, Anxiety and Stress subscales has established reliability (Cronbach alpha .87 to .94) (Lovibond and Lovibond, 1995) and has previously been used in similar Australian cohorts (Byrne et al, 2013). Directly after the education sessions and at six weeks post-birth, feedback was sought on the usefulness of the information provided around labour and birth, comfort and pain-relief options, interventions, such as induction and assisted birth, breastfeeding, parenting and lifestyle adjustments, caring for their baby and emotional wellbeing using a four-point Likert scale. Overall satisfaction with the education sessions was also obtained on a five-point Likert scale. The Parenting Sense of Competence Scale, another reliable instrument with Cronbach alphas of .84 and .88 (revised to 13 items) that measures parent satisfaction and

efficacy in the parenting role (Rogers and Matthews, 2004) was administered at six weeks post-birth.

Intervention

The 'dads-only' one-hour interactive education session facilitated by a male midwife focused on problem-solving using two examples: if the baby is crying and if the partner is crying. The purpose-designed MAN-ual offered four common problems and a step-by-step guide with prompt questions addressing basic needs. The main activity for the men was to reconstruct the MAN-ual for themselves. The facilitator would suggest that it was 2am and the baby is crying – what could be the problem? An option would be picked, for example, is it wind?

The facilitator would ask how a baby with 'wind' pain might present. A discussion would follow about how the body language and the behaviour of the baby would be if they had abdominal pain. The action could be to pick their baby up and cuddle/wind them. There were four options offered for the reason for the crying, four questions for the fathers to ask to see if the problem is what they think it is and then possible actions to try.

Based upon international evidence (May and Fletcher, 2013; Ahlden et al, 2012; Hanson et al, 2009; Deave et al, 2008), practical skills were also introduced through a nappy-changing game. During a pilot test of the session, the fathers struggled to change the nappy so prospective fathers were asked to change a soiled nappy on dolls that had a sticky substance inside to make the experience more realistic. The men then practised wrapping and holding the dolls in different positions.

Data analysis

Medians and interquartile ranges were used to summarise continuous data (such as age, parenting efficacy and parenting satisfaction). Frequency distributions were used to summarise categorical data. Univariate comparisons between those who were in the intervention and comparison group were performed using Mann-Whitney tests and X² tests. Paired t-tests were utilised to compare within group changes from time one (baseline) to time two (six weeks post-birth). Cronbach's alpha analysis was undertaken for the parenting scales.

A one-way between groups Anova was utilised to assess the difference between the comparison and the intervention groups' total parenting satisfaction and efficacy scores. P-values <0.05 were considered statistically significant. SPSS statistical software (version 21) was used for data analysis. Qualitative comments were captured on the surveys and records of resources selected by the men were also kept.

Results

Of the 291 parents (men and women) recruited to the study, 149 were in the intervention group and 142 were in the comparison group and received the existing standard education programme. Of the 115 males recruited, 68 received the intervention and 47 the standard education. Of the 176 females recruited, 81 had a partner who had received the

intervention session and 95 women had partners who received the standard education. Although most women attended the parent education programme with a partner, more women provided data than men. Of the 81 women whose partner was invited to attend the 'dads-only' session, 68 men consented to provide data.

Additionally, 95 women consented to the study compared to 47 men attending the standard education sessions. The majority of men (87 out of 115) and women (136 out of 176) had never attended a parent education class before and for the majority of males (97%), this was their first child. The DASS score between groups for gender and age were comparable (see Table 1).

At six weeks post-birth, 51% (147 of 291) of participants remained in the study. Of the 45 males remaining who provided complete data for DASS and confidence, 21 had received the intervention session and 24 received the standard education programme. Of the 102 females remaining, 44 had a partner who had received the intervention session and 58 had partners who received the standard education.

Based on the within group analysis between baseline and six weeks post-birth, the participants, DASS scores significantly decreased for both the intervention and comparison groups with the exception of female anxiety in one group where their partners received the intervention.

At six weeks post-birth, when DASS severity ratings were analysed in terms of a normal score for gender and group, males in the intervention group were significantly less likely than those in the comparison group (71% vs 88%, $p=0.008$) to have a normal anxiety or stress score (62% vs 88%,

$p=0.021$) (see Table 2, overleaf). The Cronbach's Alpha for parenting satisfaction is 0.777. The parenting satisfaction scores were comparable. The Cronbach's Alpha for parenting efficacy is 0.835. Parenting scores for satisfaction and efficacy were comparable (see Table 2, overleaf).

Qualitative comments from the men immediately after the parent education session confirmed that the session was valued: 'Dads' time with [the facilitator] was awesome', 'hour with the male midwife was the best part' and 'did not really expect to learn much/be engaged much of the time and was pleasantly surprised'. On reflection, at six weeks post-birth, positive comments continued: 'The dads-only session was very informative and allowed me to learn some new things away from the mother – allowed me to feel like I have valid input and can take control.'

One father commented that 'current stress levels and agitation are more related to work than being a parent'. Positive comments were also offered for the overall parent education programme: 'Being a parent is an awesome feeling and experience. It's a big change in life and lifestyle/routine, but I think it is worth it, the classes were very helpful.'

In relation to the usefulness of the content, both the comparison and intervention groups were highly satisfied. Immediately after the parent education sessions, 34 out of 39 (87%) of men in the comparison group and 56 out of 62 (90%) in the intervention group found the parenting and lifestyle content useful/very useful; whereas 35 out of 40 (88% of men in the comparison group) and 61 out of 63 (97% of men in the intervention group) found the caring for baby information useful/very useful. Overall satisfaction was 98%

Table 1. Demographics and baseline DASS scores

Outcome		Control n (%)	Intervention n (%)	P-value	Total n (%)
		47 (41%)	68 (59%)		115 (100%)
Male	Age mean/median (IQR)[R]	32/31(25-37)[22-46]	32/31(28-36)[22-67]	0.387	31/32(29-34)[22-67]
	Never attended parent education	35(75)	52(77)	0.226	87(76)
	First child	47(100)	65(96)	0.345	112(97)
	DASS mean/median (IQR)[R]				
	Anxiety	2/0(0-2)[0-16]	2/0(0-4)[0-14]	0.301	2/0(0-4)[0-16]
	Depression	2/0(0-2)[0-12]	2/0(0-2)[0-22]	0.691	2/0(0-2)[0-22]
	Stress	6/4(2-8)[0-26]	7/6(4-10)[0-30]	0.180	7/6(2-10)[0-30]
	DASS normal score				
	Anxiety	45(96)	59(87)	0.107	104(90)
	Depression	45(96)	63(93)	0.450	108(94)
	Stress	41(87)	61(90)	0.922	102(89)
		Control n (%)	Intervention n (%)		Total n (%)
		95(54%)	81(46%)		176(100%)
Female	Age mean/median (IQR)[R]	29/30(26-34)[20-46]	30/30(25-36)[22-42]	0.086	30/30(27-32)[20-46]
	Never attended parent education	74(78)	62(77)	0.614	136(77)
	First child	95(100)	76(94)	0.049	171(97)
	DASS mean/median (IQR)[R]				
	Anxiety	4/4(0-6)[0-26]	4/4(0-6)[0-28]	0.613	4/4(0-6)[0-28]
	Depression	3/2(0-4)[0-18]	2/2(0-3)[0-16]	0.267	2/2(0-4)[0-18]
	Stress	7/6(2-12)[0-32]	7/6(0-12)[0-28]	0.571	7/6(2-12)[0-32]
	DASS normal score				
	Anxiety	77(81)	63(78)	0.591	140(80)
	Depression	90(95)	77(95)	0.922	167(95)
	Stress	86(91)	73(90)	0.928	159(90)

IQR=interquartile range. R=range

Table 2. Six-week DASS and parenting scores

Outcome		Comparison n (%)	Intervention n (%)	P-value	Total n (%)
Male DASS normal scores	Anxiety	21(88)	15(71)	0.008	36(80)
	Depression	19(80)	12(57)	0.143	31(67)
	Stress	21(88)	13(62)	0.021	34(76)
*Male parenting efficacy		30/30(23-37)[23-39]	30/31(25-37)[18-38]	0.945	30/30(23-37)[18-39]
*Male parenting satisfaction		26/27(23-31)[13-33]	26/28(20-36)[13-35]	0.875	26/27(20-34)[13-35]
Female DASS normal scores	Anxiety	35(60)	27(61)	0.672	62(61)
	Depression	33(57)	18(41)	0.360	51(50)
	Stress	35(60)	27(61)	0.672	62(61)
*Female parenting efficacy		32/33(28-38)[19-42]	31/31(25-37)[13-42]	0.098	31/32(26-38)[13-42]
*Female parenting satisfaction		26/26(20-32)[16-36]	24/25(18-32)[12-35]	0.059	25/26(21-33)[12-36]
*mean/median (interquartile range)[range]					
Total males = 45 with 24 in the comparison and 21 in the intervention					
Total female = 102 with 58 in the comparison and 44 in the intervention					
Total = 147 with 82 in the comparison and 65 in the intervention					

and 99%, respectively. On reflection, at six weeks post-birth, 16 out of 25 (64%) men in the comparison group and 17 out of 22 (77%) in the intervention group found the parenting and lifestyle content useful/very useful; whereas 17 out of 25 (68% of men in the comparison group) and 21 out of 23 (91% of men in the intervention group) found the caring for baby information useful/very useful. Overall satisfaction was 88% and 100%, respectively.

The resources most frequently selected by the men attending the intervention session were: finding couple time; ways to support your partner; SIDS and Kids – wrapping babies; 24-hour cot-side assistance; the best on the net for new dads; and being the best dad you can be. A common thread of these resources focused upon the parental relationship and how the father could be supportive, in addition to specific practical advice and links to further information through helplines or the internet.

Discussion

Although the authors conducted a feasibility study and were not targeting specific numbers, it was challenging to get men to consent to provide baseline data during recruitment and the follow-up period. No father was denied access to the intervention session if it was offered as part of their parent education programme. Our loss to follow up from the parent education sessions to six weeks post-birth was a limitation, with only 51% (147 of 291) of parents completing the study: 21 out of 68 (30.9%) fathers who received the intervention and 24 out of 47 (51.1%) attending standard education provided follow-up data at six weeks post-birth. The study's results must be considered cautiously due to the retention rates.

Although the authors used strategies to boost response rates (Nulty, 2008), kept the survey brief and allowed for preferences to follow up (postal or online survey) with up

to three reminder emails, including a link to the online survey URL, the authors' participant loss of follow up was unsatisfactory. Perhaps gathering mobile phone numbers to facilitate a more personalised follow up may have increased the post-birth response rate (Nulty, 2008).

Continued parental engagement in research can be challenging and new parents, particularly during the first weeks post-birth, can be overwhelmed with fatigue while adjusting to their new role. The importance of the acknowledgement and management of parental fatigue are reinforced in the findings of an Australian study that suggests fatigue in the early parenting period can negatively influence behaviours important for a child's wellbeing and development (Chau and Giallo, 2015).

Although fatigue is recognised as influencing both parents, interventions addressing postpartum fatigue traditionally target mothers (Giallo et al, 2014) with minimal recognition of the impact upon partners who may have already returned to employment. Additionally, continued engagement in research especially parenting can be problematic, for example, although 69% of Swiss parents began participation in a positive parenting programme targeting parents with children six years of age, 25.1% attended one or more sessions with 17.5% completing four sessions (Eisner and Meidert, 2011). To impact stress and anxiety post-birth, the timing and quantity around the intervention must be considered. For example, the authors' one-time parent education session was offered during the third trimester of pregnancy and follow-up depression, anxiety, stress and confidence scores were measured at six weeks post-birth.

A systematic review of group-based training programmes for existing parents found short-term improvements for depression, anxiety, stress, anger, guilt, confidence and satisfaction with the partner relationship (Barlow et al, 2014). However, only four studies reported father outcomes

confirming short-term improvement in paternal stress with no improvement depressive symptoms, confidence or partner satisfaction. An intervention targeting Australian partners of breastfeeding mothers with education and support significantly decreased anxiety levels at six weeks post-birth compared to men in a control group (Tohotoa et al, 2012). Although this breastfeeding intervention included a specialised parent education for fathers during pregnancy, ongoing social support was offered on a weekly basis for the first six weeks post-birth. Perhaps the one-time intervention session in this study did not influence anxiety scores, as a dose-response relationship needed to be considered with more support activities required to realistically address anxiety scores (Ansari, 2012).

Anxiety and stress levels in early parenting may or may not be related to the transition to being a parent as noted by one father in the intervention group who shared that his current stress levels at six weeks post-birth were related to his employment, not being a new father. Review of the literature suggests that men's transition to fatherhood is guided by the social context in which they live and work, and by personal characteristics that interplay with the quality of the partner relationship. Men often struggle to reconcile their personal and work-related needs with those of their new families (Genesoni and Tallandini, 2009).

Many stressors and risk factors have been identified that contribute to paternal psychological distress. A pilot study explored the everyday stressors of 25 first-time US fathers during the postpartum period (Pollock et al, 2005). Financial responsibility, time management, not knowing what the child wanted, and the child only wanting the mother at times, were the highest of spontaneously identified major stressors. A study by Matthey (2007) investigated stressors associated with coping difficulties in the first postpartum year for both men and women. Frequently cited stressors for both parents included adjustment to the new situation, sleep, settling, feeding difficulties and exhaustion. Women also reported the stressors of too much housework, feelings of isolation or loneliness and the infant being sick; men also reported financial, work-related and partner-related stressors (Matthey, 2007).

A longitudinal study with first-time US low-risk parents proposed two trajectories relating to anxiety across the transition to parenting and suggested that the majority of parents adjust well with a small subgroup continuing to experience higher levels of anxiety months after the birth (Don et al, 2014).

The authors' findings around men's selection of resources that addressed relationship concerns are well-founded given a meta-analysis of evidence around relationship satisfaction across the transition to parenthood confirms declining relationship satisfaction for both parents from pregnancy to the first year post-birth (Mitnick et al, 2009). However, Mitnick and colleagues (2009) suggest caution in drawing conclusions as this decrease in satisfaction is not unique to parenting with similar findings with newlyweds.

Awareness of the potential impact of new parenting on relationships is important as anticipatory guidance

can normalise the issues and alert parents to strategies to minimise the reality of this dissatisfaction. Use of anticipatory guidance for new parents around topics relevant to infant care, such as crying and sleep disruption, has been well-recognised (Combs-Orme et al, 2011; Schuster et al, 2000). British parents reported valuing the opportunity to learn about birth, breastfeeding and postnatal adjustment from a reliable source and that attending a course increased their confidence about birth and baby feeding. They particularly valued guidance and practical help (Newburn and Taylor, 2011). The need to listen to feedback and respond appropriately is reinforced by these findings, to ensure courses provided cater for not only maternal concerns, but include those of prospective fathers (Newburn, 2012).

One of the preferred resources selected by men attending the intervention session was information on websites for new fathers. One Australian study queried whether email and websites were acceptable to expectant fathers as methods for receiving tailored information (Fletcher et al, 2008).

The challenge remains that although almost all fathers involved found the information satisfactory, almost all had not accessed the websites listed, even though they were readily available on the internet. The fathers' favourite topics were 'father-infant bonding' and 'father-baby games', emphasising their desire to interact with their infant (Fletcher et al, 2008). The interactive intervention session in this study included a problem-solving exercise, nappy-changing game and practising wrapping and holding positions. Although numbers are small and caution is necessary with interpretation, 61 out of 63 (97%) men in the 'dads-only' group found the caring for baby information useful immediately after the session.

On reflection, six weeks post-birth, 21 out of 23 (91%) intervention fathers confirmed this information was useful compared to 17 out of 25 (68%) of men in the comparison group who received the standard sessions. Another Australian study found that most fathers, expectant and experienced, felt there were not enough resources to support their education, spaces to support their involvement, or recognition of their experiences and feelings (St George and Fletcher, 2011).

Conclusion

The authors' one-time intervention did not significantly influence early parenting anxiety, depression and stress scores or parental confidence; although poor retention of participants to the six-week follow up means that conclusions must be considered with caution. At the same time, findings do not confirm that the needs of fathers in either group were not addressed during parent education.

Feedback from the men after the intervention confirmed its acceptability and usefulness. The men's evaluation on the usefulness of content around parenting and lifestyle plus caring for baby, in addition to what types of resources they preferred, may assist health services to modify what is offered in parent education and prompt health professionals to reflect if they are providing father-inclusive parent education.

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Information for authors

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News and resources

RCM annual conference wins award

The RCM Annual Conference has scooped a prestigious award. The three-day event has received the accolade for Best Development of an Existing Conference at the annual Conference Awards. The RCM conference is due to return to the International Centre Telford on 10 to 11 November. This year's speakers include Karen Guilliland, the New Zealand College of Midwives chief executive, and Dr Bill Kirkup, chairman of the Morecambe Bay investigation. The programme offers a range of research seminars and management masterclasses, plenary sessions and hands-on workshops. For more information, visit rcmconference.org.uk

Honours for midwifery professionals and researchers

RCM staff and midwifery academics were recognised in the Queen's Birthday Honours 2015. RCM director for midwifery Louise Silverton has been recommended for a CBE for services to midwifery and maternal and child health, and RCM professional policy advisor Janet Fyle has been recommended for an MBE for services to tackling FGM. Also featured on the list are Professor Paul Lewis of Bournemouth University, who has been awarded an OBE for services to mothers, midwifery and maternity and Professor Elizabeth Robb, chief executive of the Florence Nightingale Foundation, also awarded an OBE for services to nursing and midwifery.

Baby-friendly accolade for university

The University of Salford's midwifery directorate has been awarded the highest marks in the UK by UNICEF. It retained its UNICEF Baby Friendly accreditation by receiving an average overall grade of 93%. UNICEF was highly complimentary of the midwifery staff and students, praising their knowledge, skill and enthusiasm in promoting breastfeeding as a public health requirement for all mothers and babies. The Baby Friendly Initiative programme is designed to support breastfeeding and parent-infant relationships by working with public services to improve standards of care.

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