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Valuing breastfeeding: can financial incentives for breastfeeding help strengthen the UK breastfeeding culture?

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Abstract

Background. The UK has some of the lowest rates of breastfeeding (duration and exclusivity) in the world despite public knowledge of the benefits of breastfeeding and considerable efforts to support women to breastfeed. Factors influencing breastfeeding are based on cultural attitudes and societal values wider than the individual mother, yet interventions to increase breastfeeding focus primarily on supporting women at the medical and individual level. Although these are vital and valued services, they are possibly only part of the solution.

Method. This article comments on recent research on financial incentives led by the author and outlines future research ideas that could help inform UK policy about the potential role of financial incentives in protecting, promoting and supporting breastfeeding in all parts of UK society.

Findings. Available randomised evidence suggests that financial incentives are feasible, practical, effective and likely cost-effective interventions to increase rates of breastfeeding.

Conclusion. Future research should focus on interventions acceptable to key stakeholders in infant feeding in a range of different settings to help further inform breastfeeding policies both locally and nationally.

Key words: Breastfeeding, financial incentives, complex systems, vouchers, social support theory, public health, evaluation, randomised controlled trials, evidence-based midwifery

Background

The fundamental importance of infant feeding to health and development is recognised in UK national and international policy recommendations and guidance (Sankar et al, 2015; Ip et al, 2009). NICE guidance recommends that the UNICEF UK Baby Friendly Initiative standards should be the minimum standards for the NHS, and that a combination of interventions including antenatal education, peer support, and education and training for health professionals should be put in place (NICE, 2008).

Despite considerable efforts, the UK has one of the lowest breastfeeding rates in the world, with many communities feeding only with infant formula (Victoria et al, 2016). Virtually no babies are exclusively breastfed to the recommended six months, and only 34% are breastfed at all at six months. Less than 1% of mothers in the UK fed their infants in line with official Department of Health guidance, and over 80% of women reported stopping breastfeeding before they want to (McAndrew et al, 2012), with the result that mothers often experienced a feeling of failure and guilt (Lee, 2007). The UK picture is in contrast to other developed countries such as Norway and Sweden where 80% of women breastfeed to at least six months (Australian Government Department of Health, 2012).

Primary physiological inability to breastfeed is rare across populations. Instead, it is well established that maternal

experiences heavily influence breastfeeding intention, initiation and duration (Lawrence and Lawrence, 2001). Breastfeeding for longer than a few months, or in public, tends to be perceived negatively, including claims that women are 'making a scene' and undertaking a disgusting, even sexual act (Grant et al, 2017; Acker, 2009). Reactions of disgust are typically shown in the terminology used in media discourses (Grant et al, 2017). At the same time, idealised images of infant formula supported motherhood are depicted in the promotion of formula to professionals and the public (in contravention of the WHO Code on Marketing of Breastmilk Substitutes, 1981).

Aside from physical difficulties, issues with stretched professional care, negative social attitudes, body image, conflicting responsibilities, and a lack of familial support have all been highlighted as barriers to breastfeeding (Brown, 2017; Lawrence and Lawrence, 2001). These societal factors can lead to women not breastfeeding responsively (i.e. not responding to feeding cues), which negatively impacts milk supply, leading then to early cessation of breastfeeding.

Factors influencing breastfeeding are based on cultural attitudes and societal values wider than the individual mother, yet interventions to increase breastfeeding focus primarily on supporting women at the medical and individual level. Although these are vital and valued services, they are only part of the solution.

Instead, as in many areas of health, a public health approach that supports women to breastfeed is also needed (Brown, 2017). This is particularly important in the many areas where successive generations have formula-fed, where breastfeeding is neither visible nor valued (Scott and Mostyn, 2003).

Costs of not breastfeeding

The effects of not breastfeeding are seen across multiple sectors, including health, education, employment, food economy and the environment. Not breastfeeding is associated with lower intelligence and economic losses of \$302 billion annually or 0.49% of world gross national income (Rollins et al, 2016). US research suggested that the extra cost of treating a non-breastfed infant is between \$331 and \$475 per infant in the first year (Ball and Wright, 1999). While we lack UK data, an intervention costing less than this per additional breastfed baby might be cost saving.

Moreover, the environmental impact of breast milk substitutes (infant formula) through energy and water required in production, packaging, and distribution is substantial and any increase in breastfeeding rates would also contribute to environmental sustainability.

The future

The UK's persistent low rates of breastfeeding present a major public health challenge. These low rates are influenced by multiple complex interacting systems: food, social, health, employment, taxation and legal, each with multiple actors and perspectives (Brown, 2016). It is appropriate, therefore, to consider what measures have been effective with other similarly complex public health challenges.

Despite widespread provision of information on the harmful effects of smoking, just 10 years ago almost a quarter of all adults in the UK continued to smoke (Bauld, 2011). The introduction of legislation banning smoking in workplaces and enclosed public spaces, combined with raising the legal age to buy cigarettes to 18, increasing taxes on cigarettes, and banning attractive imagery on tobacco packaging, all contributed to the fast creation of a strong anti-smoking culture and a significant decline in smoking in the UK.

In contrast, despite widespread provision of information on the harmful effects of not breastfeeding and considerable efforts by healthcare professionals and breastfeeding support volunteers to support women to breastfeed, the UK continues to have one of the lowest rates of breastfeeding (duration and exclusivity) in the world. It is possible that similar legislative and fiscal interventions will be required to strengthen the breastfeeding culture in the UK. If this is the case then what interventions might be effective and deemed justifiable?

Money and health behaviour

Money helps us count, exchange and value goods and services. In the UK, some services are provided free at the point of delivery, particularly public services with obvious societal benefit such as education, healthcare and green

spaces. Others we must pay for. Currently in the UK, monetary disincentives (taxes) are applied to a number of products that are harmful to health (alcohol, tobacco, and most recently sugar-sweetened drinks). Monetary incentives are much less frequently applied to change behaviour that is harmful to health. However, recent research among pregnant women showed that financial incentives could double smoking cessation rates (Chamberlain et al, 2017) and were cost effective (Boyd et al, 2016). Financial incentives for smoking cessation during and after pregnancy are currently being rolled out in Manchester (BBC News, 2017).

Despite the health departments in all four home nations recommending that all babies are exclusively breastfed up to six months, the current statutory UK Department of Health 'Healthy Start' scheme offers financial incentives not for breastfeeding but for a breastmilk substitute – infant formula. Each year, the Healthy Start scheme is offered to 550,000 pregnant women and families with young children in receipt of benefits. The vouchers, worth £3.10 (£6.20 for children under one year), can be redeemed for fruit, vegetables, milk, and infant formula. The majority of vouchers for children under one are exchanged for infant formula and in some communities these are even known as the 'milk vouchers' or 'formula vouchers'. Those in receipt of Healthy Start vouchers are less likely to initiate breastfeeding (McAndrew et al, 2012). In addition to the UK government subsidy of infant formula, the food industry spends £16.4 million per year on marketing infant formula in the UK. This is equivalent to £25 per infant each year.

Financial incentives for breastfeeding

Though controversial in the UK, the idea of financial support for breastfeeding is not new. Since 1993, unemployed mothers in Quebec have been offered the choice of a cash incentive to breastfeed (\$37.50 per month for 12 months) or vouchers of less value for infant formula (McNamara, 1995).

Gift type incentives have been shown to facilitate relationships between mothers and their health carers in the UK (Thomson et al, 2012). More recently, two randomised trials have demonstrated the effectiveness of financial incentives on rates of continued breastfeeding to one, three and six months (Washio et al, 2017) and breastfeeding to six to eight weeks (Relton et al, 2017).

The first trial was conducted in the USA (Washio et al, 2017). A total of 36 women on low incomes on the Women Infant Children (WIC) programme who had started breastfeeding were recruited to the trial. The intervention tested was monthly escalating amounts of financial incentives contingent on breastfeeding in addition to standard WIC education. This was compared to standard WIC education alone. Breastfeeding was verified by direct observation. The incentive amount was \$20 at the end of the first month and increased by \$10 every month until the end of six months. The maximum potential earning was \$270. This small-scale study found that contingent cash incentives significantly increased breastfeeding through six-month postpartum among WIC-enrolled Puerto Rican mothers.

A second much larger trial (Relton et al, 2017), NOSH, was recently conducted in the UK. This research took an area-based approach in an attempt to address some of the complex social and cultural barriers to breastfeeding in the UK. In this trial, all mothers living in areas with breastfeeding rates of less than 40% at six to eight weeks were eligible for vouchers for breastfeeding. There were five time points when vouchers worth £40 could be claimed: two days, 10 days, six to eight weeks, three months and six months (£200 in total). Mothers and healthcare professionals co-signed voucher claim forms which stated that they had discussed breastfeeding and that the infant was receiving breastmilk.

Getting started

At the start of the project there were mixed reactions from local healthcare professionals to the idea of offering vouchers for breastfeeding:

“They should do this because they want to do it not because someone’s saying well we’ll give you 50 quid for doing it” (19, Health visitor).

“Without trying to delve into the ethical debate and getting all middle class about it, if it does what it sets out to achieve, then that is a good thing, because the knock-on benefits to the rest of the, you know, in terms of population could be big” (23, Midwife).

“For the ones who are umming and awing about it, it might work” (FG2, Midwife).

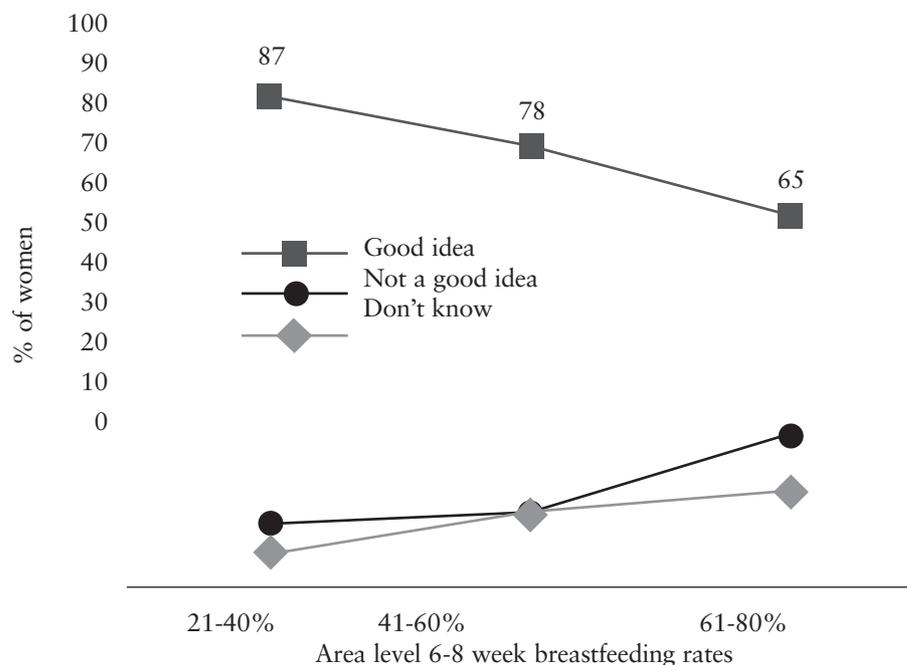
In 2014, in order to gauge the reactions of local women to the idea of vouchers for breastfeeding, researchers at the University of Sheffield conducted a street survey in shopping areas in Sheffield. The results (Table 1) showed that the idea was more acceptable to those in areas with lower breastfeeding rates (21% to 40% at six to eight weeks) than those who lived in areas with higher breastfeeding rates (61% to 80% at six to eight weeks).

The research team then went on to work with local mothers and healthcare professionals to develop an area-based financial incentive scheme for vouchers to breastfeed. The intervention was adapted to the local priority in Yorkshire and Derbyshire to increase the duration of breastfeeding to six to eight weeks.

It was designed so that it:

- Was embedded within, and adapted to, existing routine support for mothers
- Required minimal staff training, no re-organisation of services and no extra contacts by healthcare professionals
- Provided a wide choice for voucher redemption – supermarket and high street shops
- Was framed to avoid stigma (all women regardless of

Table 1. Acceptability of vouchers for breastfeeding and area level breastfeeding rate



income were eligible)

- Used sensitive/neutral language (Relton et al, 2017).

Information about the voucher scheme was disseminated to women and healthcare professionals, and a local system set up to process the applications and quickly send out vouchers as they were claimed.

Offering financial incentives for breastfeeding helped to provide four forms of social support (House, 1981):

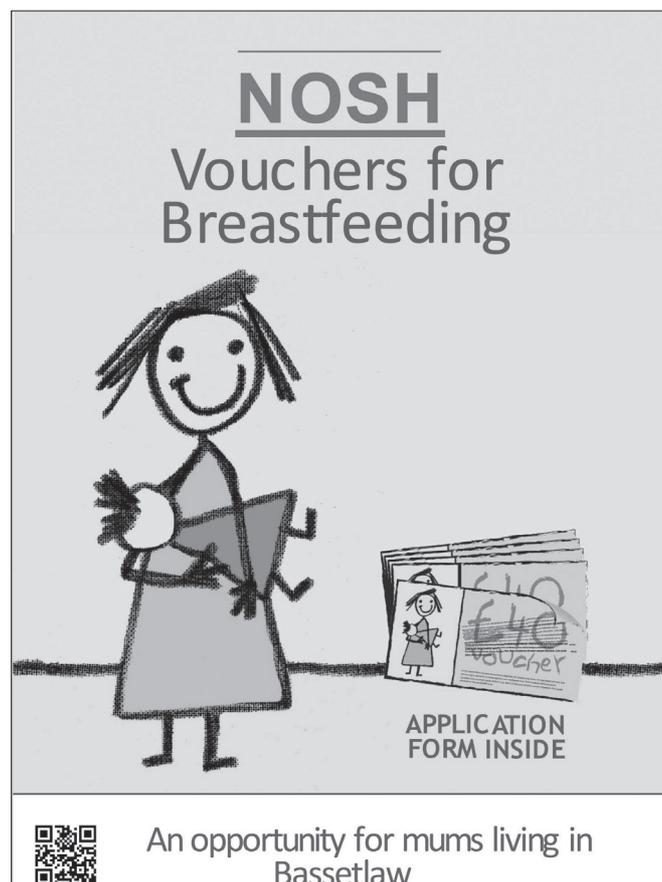
- Instrumental support (shopping vouchers enabled women to obtain resources)
- Informational support (the scheme booklet (Figure 1) provided information about the value of breastfeeding and sources of support)
- Emotional support (women feel valued by the vouchers and the accompanying ‘congratulation’ letters)
- Appraisal support (offering vouchers at five different time points helped women set breastfeeding goals).

The announcement of the first small-scale field test of the intervention in November 2013 was met with surprise and concern about the ethics of the scheme and whether it would be effective (Moorehead, 2013). Similar concerns have been reported for financial incentives for other types of behaviour change (Lynagh et al, 2011). A societal perspective on the vouchers for breastfeeding scheme was succinctly depicted at the time by a *Daily Mail* cartoon (Figure 2).

Despite the predominantly negative reaction from the media, the results of the first field test suggested that the scheme was both acceptable and deliverable, with local stakeholders keen to continue.

So how might offering vouchers for breastfeeding work? Our initial theory of change was that offering vouchers for breastfeeding communicates ‘the value of breastfeeding

Figure 1. Front of the Vouchers for Breastfeeding booklet



to babies, mothers and society, and recognises the effort involved in breastfeeding'. This message was printed on the back page of the booklet describing the financial incentive scheme that was distributed to mothers and healthcare professionals in the intervention areas. One could also interpret the intervention in the light of recent 'nudge' theory. The 5p tax on single use plastic bag, introduced in October 2015, reduced plastic bag use by 85% within six months and created a culture where the value of plastic bags has increased significantly. Could UK society be similarly nudged to a breastfeeding culture? If a mother receives 5p every time she puts her baby to the breast, and she does this 20 times a day, this would equate to £1 a day and £178 by the time the baby was six months old.

The subsequent full randomised trial tested the intervention in 92 electoral ward areas with breastfeeding rates between 20% and 40% at six to eight weeks, and included 10,010 mother-infant dyads (Relton et al, 2017). The trial found that clusters (areas) where the vouchers were offered had significantly higher rates of breastfeeding at six to eight weeks (37.9% vs 31.7%) compared to areas with no vouchers. Over time, an increase was seen in the effect size: this rose to 8.9 percentage points in the fourth quarter in favour of the vouchers for any breastfeeding.

Qualitative research during the delivery of the intervention found that the voucher scheme was acceptable to healthcare professionals. There were 528 different healthcare

professionals who signed claim forms, mainly midwives and health visitors, but also nurses, GPs, paediatricians and breastfeeding support workers. Healthcare professionals reported that the voucher scheme made discussing breastfeeding easier and helped to communicate the value of breastfeeding. Mothers reported feeling valued (supported and rewarded) for breastfeeding (Johnson et al, 2018, Whelan et al, 2018).

The publication of the trial results in November 2017 (Relton et al, 2017) revealed a positive shift in public opinion: 'the new study of 10,000 new mothers may help overturn the growing problem,' said the *Mail Online* in November 2017.

A Sure Start centre in Belfast began (and continues) to offer vouchers worth £20 in areas with low rates of initiation of breastfeeding (13%).

Challenges and recommendations for future research

The NOSH project faced a number of challenges. This section describe three of these challenges and the implications for future research.

Firstly, it is not clear if the impact of the intervention was fully demonstrated in the NOSH trial. By month three of the trial, the majority of eligible women had still not heard about the scheme, as randomising electoral wards meant that midwives and health visitors found it difficult to know which women were eligible. Some professionals also found it difficult to offer vouchers to certain women in their caseload and not others. Banner posters in hospital waiting rooms and Facebook adverts in intervention areas helped spread information about the scheme, and the impact of the scheme increased steadily over the next nine months. A longer trial (e.g. two years) might see an increase of 10 percentage points or more in breastfeeding.

Figure 2. The power of the public gaze. DAILY MAIL, November 2013. The cartoon depicts the power of the public gaze on mothers, breastfeeding and the vouchers.



Figure 3. How to ensure against false claims? DAILY MAIL, November 2017 – the results of the large scale ‘proof of concept’ trial of financial incentives are announced – but how will the scheme ensure against false claims?



Secondly, it is not known whether the potential to receive an incentive led to inaccurate reporting. This concern was depicted at the time by another *Daily Mail* cartoon (Figure 3).

The primary outcome measure for the trial was based on cluster-level routine administrative data on any breastfeeding at six to eight weeks. This routine data is based on the healthcare professional’s interactions with the mother during routine visits from birth and six to eight weeks postpartum (and included discussions about feeding and sometimes witnessing the mother breastfeeding). For any future area-based approach, methods to address any potential bias in routine area-level data on breastfeeding at six to eight weeks will need to be developed. There may be a need to develop a biochemical assay to differentiate between infants receiving any or exclusive breast milk from those only receiving formula. This assay could utilise substances in infant urine which are found only in human milk, oligosaccharides, which are highly abundant in human milk but not bovine milk or infant formula. It is possible that such a biomarker test could help motivate behaviour change as, for example, the Greater Manchester Stop Smoking Pregnancy Scheme found that 70% of quitters reported that having their carbon monoxide reading taken was very important in encouraging them to quit smoking.

A human oligosaccharide-based biomarker test may help enhance the perceived ‘scientific’ value of breastmilk to mothers and UK society. Human oligosaccharides have beneficial prebiotic effects on promoting healthy gut colonisation and developing the immune system (Jantscher-Kreen et al, 2012). But if a biomarker was used, care would be needed to avoid any negative impact on women or their relationships with their healthcare providers.

Thirdly, local commissioners of infant feeding services commented that the size of the financial incentive tested was neither affordable nor politically expedient within the

current economic and political climate.

“It’s obvious that it’s cost effective but there is no political traction... councillor X thinks people should not be paid to do what they should already be doing” (Director of public health).

In order to demonstrate the cost effectiveness of this approach, future research could use the excellent routine data on child and maternal health outcomes, including infant feeding, at individual and cluster level in Scotland and Northern Ireland (NIMAT, CHS). However, the CHIMAT system in England is more limited, though new data systems may soon become available.

The research could also observe the effects of offering financial incentives for breastfeeding on infant and mother health outcomes using breastfeeding data on newborn infants and the six to eight week baby check, along with longer term individual patient data for infant-mother dyads. This would enable the study of the relationship between breastfeeding and categories of hospital admissions such as accident and emergency visits, gastrointestinal infections, respiratory infections, necrotising enterocolitis, and the direct effects of breastfeeding on hospital care costs. A health economic model, informed by study and external data could evaluate long-term health outcomes, healthcare costs and cost-effectiveness of financial incentives. This could be informed by existing models linking breastfeeding, health outcomes and costs (Bartick et al, 2017; Pokhrel et al, 2015; Walker et al, 2013) to develop a model relevant for different local areas in the UK.

In the US, building on the positive results of recent research (Washio et al, 2017), a \$2m National Institutes of Health grant is supporting a larger trial of financial incentives for women enrolled on the WIC programme to continue breastfeeding. In the UK, there is now a need to identify an optimally targeted and cost-effective financial incentive scheme to increase breastfeeding in all areas.

Future research will need to allow the adaptation of the intervention, as delivered in the NOSH trial, to local resources and priorities, so that it is acceptable not just to local mothers, midwives and health visitors, but also of interest to local and national politicians and commissioners of infant feeding services.

Conclusions

Despite public knowledge of the benefits of breastfeeding and considerable efforts to support women to breastfeed, the UK continues to have one of the lowest rates of breastfeeding in the world. It is time to ask if legislative and fiscal interventions are now required to bring about a strong breastfeeding culture and a significant increase in UK breastfeeding. This article has described recent UK research on financial incentives and outlined future research ideas to develop and test a range of financial incentive schemes acceptable to key stakeholders in infant feeding in a range of different settings. This information would help inform UK policy makers about the potential role of financial incentives in protecting, promoting and supporting breastfeeding in all parts of the UK society.

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Understanding resilience in the context of midwifery: a concept analysis

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Abstract

Background. Resilience has been heralded as an essential characteristic to thrive in the complex work environments of the 21st Century. While resilience is not a new concept, it continues to be described with a high degree of variation, creating misunderstanding. In particular, there is need for greater clarity and understanding regarding resilience contextualised to midwifery.

Aim. To define the concept of resilience in the context of midwifery.

Method. A concept analysis guided by the Walker and Avant eight-step framework was undertaken. A comprehensive literature search was undertaken of the five databases: Medline, PubMed, Nursing and Allied Health, Embase and Google Scholar. Search terms comprised 'resilience', 'midwifery', 'concept analysis' and 'midwifery students'. These terms were broadened to include 'nursing' and 'nursing students' due to a lack of literature in the midwifery context. A focus group with six third-year midwifery students was also conducted to provide midwifery context specific real life cases for the concept analysis. Ethics approval was gained from the university's Human Research Ethics Committee.

Findings. The defining attributes of resilience contextualised to midwifery included social support, self-efficacy and optimism encompassing reflection. The analysis identified that the most common antecedents of resilience in this context were perceived stress or adversity. The consequences of being resilient in midwifery were an effective coping or adaptive capacity and a positive mental health status.

Conclusion. Resilience in the context of midwifery is defined as a dynamic process to overcome perceived adversity and stress that draws upon internal and external sources, to achieve effective coping/adaptive capacity and wellbeing. These findings provide a basis for further research and offer strategies to strengthen resilient behaviour for midwives and midwifery students.

Key words: Resilience, midwifery, midwifery students, concept analysis, midwifery practice, education, evidence-based midwifery

Introduction

Resilience has been defined as 'the ability to recover after challenging circumstances' (Cambridge English Dictionary 2019) and is heralded as an essential characteristic to thrive in the complex work environments of the 21st Century (Sanderson and Brewer, 2017). While resilience is not a new concept it has gained increasing attention among a range of disciplines, including health care (Sanderson and Brewer, 2017). Nevertheless, it continues to be described with a high degree of variation (Sanderson and Brewer, 2017; Chandler, 2014; Hunter and Warren, 2014; Lin et al, 2013; Earvolino-Ramirez, 2007; Masten and Garmezy, 1985; Holling, 1973). Early research described resilience as a fixed trait, whereas contemporary research regards resilience as a dynamic process that can be developed (Garcia-Dia et al, 2013; Earvolino Ramirez, 2007; Masten and Garmezy, 1985).

Resilience is important in midwifery as practice draws on a relationship-based approach to provide care that is often described as emotionally demanding work (Hunter and Warren, 2014). Some midwives find this challenging while others thrive, fostering strategies to manage the various stresses, demonstrating resilience (Hunter and Warren, 2014). Similarly, midwifery students are confronted with challenges during their education, both academically and in clinical practice; while some appear resilient, others struggle, and even withdraw from the programme (Lopez et al, 2018; Williams, 2016). Retaining midwifery

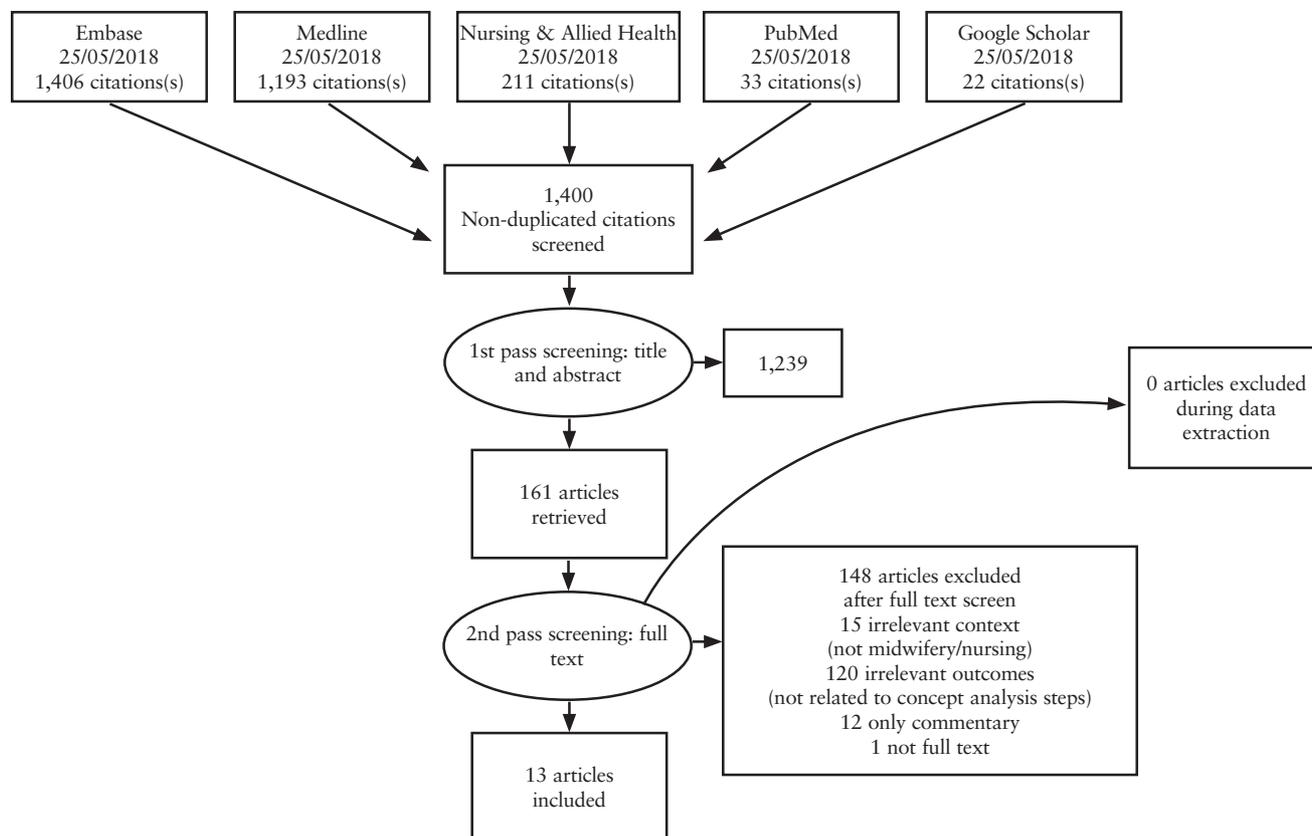
graduates is essential for providing quality maternity services and this may be dependent on the development and retention of resilient students. Inconsistencies in definition, operationalisation and measurement of the concept of resilience makes it challenging to comprehend and cultivate (Hunter and Warren, 2014). Therefore, the aim of this study was to undertake a concept analysis of resilience in the context of midwifery.

Literature review

The concept analysis identified broad uses of the idea of resilience by drawing on resources such as dictionaries, thesauruses and literature from several academic disciplines (Walker and Avant, 2013). The word 'resilience' originates from the Latin 'resilia', meaning the 'action of rebounding' and is defined as 'the act of recoiling or springing back'. (Oxford English Dictionary, 2018).

Beyond the dictionary definitions, early conceptualisations viewed resilience within individuals who overcame the obstacles of their environment through their inner strengths and capacities (Chandler, 2014). Similarly, some psychologists shared the belief that resilience was a personality trait that allowed one to 'bounce back' (Masten and Garmezy, 1985). Certain attributes termed 'protective factors' appeared to aid recovery and success in spite of adversity (Masten and Garmezy, 1985). Within the field of ecology and microbiology resilience was used to describe

Figure 1. PRISMA flow chart



various ecosystems, and their ability to resist harmful organisms (Todman et al, 2016). Within the field of physics, resilience as a concept has been referred to as ‘elasticity’ (Lin et al, 2013). The common theme within these disciplines was on the internal capacity to withstand pressures or stresses which were understood to be externally generated.

The notion of inherent capability was challenged by Holling (1973), an ecologist, who identified that resilient ecological systems involved complex adaptability, with resilience recognised as dynamic and interactive. In line with this, several psychology-based researchers moved away from the classical beliefs of resilience (Chandler 2014; Holling, 1973).

Within healthcare disciplines other than psychology, a similar understanding of resilience has emerged, though very limited literature has focused specifically on midwifery. One midwifery study referred to resilience as ‘the ability of an individual to respond positively and consistently to adversity, using effective coping strategies’ (Hunter and Warren, 2014). This study also advocated that resilience included ‘positive adaption to adversity without significant residual disruption’. Similarly, in the nursing literature, McAllister and Lowe (2011) viewed resilience as enabling an individual to not only survive adversity but also learn from it, allowing personal growth. In the context of midwifery students, descriptions of resilience are more limited. In a pilot study by Williams (2016) second year midwifery students in a focus group used terms such as ‘carrying on’, and being able to ‘power through’ to describe resilience. However, no specific

midwifery student definition was identified in the literature. Within the nursing student context, Stephens (2012) cites resilience as an individual developmental process that occurs through the use of personal protective factors to navigate perceived stress and adversities with cumulative successes, leading to improved coping/adaptive abilities and wellbeing.

Methods

This paper draws on the Walker and Avant (2013) framework for undertaking a concept analysis that utilises the following eight steps: 1) select a concept, 2) define the aims and purpose of the analysis, 3) identify multiple uses of the concept, 4) determine the defining attributes, 5) develop a model case, 6) construct additional cases, 7) identify antecedents and consequences of the concept, 8) examine ‘empirical referents’ of the concept. Walker and Avant’s (2013) framework provides a straightforward and systematic approach.

As part of the concept analysis a critical review of the literature was undertaken. Five databases were searched: Medline, PubMed, Nursing and Allied Health, Embase and Google Scholar. Search terms comprised ‘resilience’, ‘midwifery’, ‘concept analysis’ and ‘midwifery students’. However, as the initial literature search yielded a lack of data relating specifically to midwifery and midwifery students, the broader search terms of ‘nursing’ and ‘nursing students’ were included because, although nursing and midwifery are distinct professions, there are similarities in practice and education environments. The inclusion criteria included: English-language publications and peer-reviewed

journals, dissertations and books. The publication date was not restricted to allow a comprehensive review. Fourteen-hundred papers were identified. Papers were excluded if the title and/or abstract did not link to resilience in the context of midwifery and/or nursing. The remaining literature was read in full to determine relevance, and quality. A total of 13 papers were included (Figure 1). The references of selected papers were hand searched for potential new data. In addition, as emphasised by Walker and Avant (2013), a variety of concept analyses on resilience from other disciplines were reviewed to ensure a broad understanding of the term. The Critical Appraisal Skills Programme (2018) tool provided a structured approach to assess the rigour of selected qualitative papers and the Adapted Caldwell Appraisal Form for quantitative studies (Caldwell et al, 2011).

The literature included in the analysis was reviewed by the authors, with data extracted and organised to examine the concept of resilience contextualised to midwifery, as outlined in step four. Constant comparative data analysis was used: a method where data collection and analysis occur concurrently, with new data repeatedly compared against previously analysed data (Schneider et al, 2013). The authors read and re-read the literature to ensure familiarity with the data and to adequately place data into emerging themes and categories. The process of reading and analysing the contents of the literature collected, and the categorisation of resilience into relevant themes, has been a repetitive and iterative process allowing a critical approach to analysis.

Walker and Avant (2013) also encouraged ‘real life’ examples to provide case studies to further define and display the attributes of the concept. To address this, a focus group discussion with midwifery students was undertaken. Midwifery students were chosen as they provided the additional perspective of being an observer and were likely to experience similar challenges in the workplace to midwives. McCarthy et al (2018) highlight the prominent clinical stress midwifery and nursing students experience specifically in relation to the responsibility in caring for patients/clients when they enter the clinical area. In particular, this project aimed to underpin the development of educational strategies to foster resilience in midwifery students. The inclusion

criteria for the focus group was final year midwifery students undertaking a clinical placement in the Bachelor of Midwifery programme at a university in South Australia. These students were chosen due to greater clinical experience and length of time in the programme. The exclusion criteria consisted of first and second-year midwifery students. Purposive sampling was used to ensure participants had the characteristics, such as prerequisite knowledge and/or experience, that fitted in with the objective of the study, with the intention of delivering information-rich cases for an in-depth study (Schneider et al, 2013). Sixty-three final-year midwifery students were emailed an invitation and information sheet by the midwifery administration officer. Six volunteered to participate and provided written consent to be involved in the focus group that lasted approximately 35 minutes on 3 July 2018. All six had been enrolled in the Bachelor of Midwifery programme for a total of three years with five participants enrolled straight from high school, and one participant enrolled as a mature aged student. Five of the participants were studying full time as internal students and one was studying full time externally. Only one had a prior qualification, that of an enrolled nurse. The remaining five had no previous qualifications before entering the programme. The focus group was conducted by two researchers who did not have direct teaching responsibility for these students. The discussion was audio recorded with consent and transcribed verbatim, with pseudonyms used to protect the participants’ confidentiality in written transcriptions. Ethics approval was gained from the university’s Human Research Ethics Committee (Application ID: 201145).

Findings

Defining attributes of resilience in midwifery

While it is evident from the literature reviewed that there is a broad understanding regarding the concept of resilience, examining the midwifery and nursing literature for repeated use of the term resilience enabled key defining attributes to be identified, as required for step four. The following three attributes: social support, self-efficacy and optimism underpinned by positive reflection, were identified (Table 1). For more information regarding demographic characteristics see Table 2.

Table 1. Defining attributes with corresponding resilience scale items

Defining attributes	Corresponding item from RSA	RSA subscales
Social support	There are strong bonds in my family	Family coherence
	I have close friends/family members that care about me	Social support
	I always have someone who can help me when needed	Social support
Self-efficacy	Believing in myself helps me overcome difficult times	Personal competence
	I am pleased with myself	Personal competence
	I completely trust my judgements and decisions	Personal competence
Optimism (including reflection)	I easily laugh	Social competence
	I know I can succeed if I carry on	Personal competence
	No matter what happens I always find a solution	Personal competence
	My future feels promising	Personal competence
	At hard times I know better ones will come	Personal competence + social support

Table 2. Defining attributes of resilience in midwifery and nursing

Attributes	Cope et al (2016a)	Cope et al (2016b)	Crombie et al (2013)	Gillespie et al (2007)	Hunter & Warren (2014)	Lopez et al (2018)	McDonald et al (2016)	McDonald et al. (2012)	Mealer et al (2016)	Reyes et al (2015)	Stephens (2013)	Tubbert (2016)	Williams (2016)
Self-efficacy		●		●	●						●		
Perspective					●								
Social support	●	●	●		●	●	●	●	●	●	●	●	●
Autonomy					●			●					
Optimism	●	●			●	●	●	●	●	●	●	●	
Confidence		●			●								
Self-esteem					●								
Adaptability					●								
Humour									●		●		
Competence				●							●		
Reflection								●	●	●			●
Passion	●	●	●										
Leadership	●	●											
Hope				●				●					
Creative thinking												●	
Honesty												●	
Tenacity												●	
Flexibility									●				
Spirituality									●				
Moral compass									●				
Altruism									●				

Social support

The attribute of social support was frequently linked to resilience (Lopez et al, 2018; Cope et al, 2016a, 2016b; McDonald et al, 2016; Tubbert, 2016; Williams, 2016; Crombie et al, 2013; Stephens, 2012; Earvolino-Ramirez, 2007; Gillespie et al, 2007). Sources of social support varied throughout the literature. In a study by Hunter and Warren (2014) some participants cited family and friends as a vital network of support as they were able to give a different perspective on work issues. Similarly, Cope et al (2016b) also identified that participants valued social support from relationships outside of the workplace. Alternatively, some participants in both studies believed colleague support was also valuable for developing and sustaining resilience (Cope et al, 2016b; Hunter and Warren, 2014).

Specifically, Hunter and Warren's (2014) qualitative study showed participants consistently highlighted how trusted midwifery colleagues provided a source of empathetic, 'safe' support and personal affirmation. Similarly in nursing, colleagues were valued to support decision-making in the workplace and provided a reciprocal understanding of what it is to be a nurse (Cope et al, 2016a; 2016b). McDonald et al (2012) found that a work-based educational programme

for nurses and midwives was successful because it increased supportive professional relationships among participants and supported resilience through enhanced communication between co-workers. Cope et al (2016a, 2016b) believed the ability to mentor others in a supportive nature fostered resilience.

Importantly, senior 'resilient' midwives identified the need to support and nurture graduate midwives and midwifery students (Hunter and Warren, 2014). The study by Williams (2016) used the updated Wagnild's true resilience scale (WTRS) to examine the role of resilience in supporting midwifery students to remain in their programme. Students who scored moderately high on the WTRS used support networks, including peers and university staff. Similarly, Lopez et al (2018) found that nursing students spoke with their friends and peers as a way to cope with the stresses of clinical placements. In a case study which explored why nursing students stayed in their programme, the quality of mentor support made a significant difference to their experience and facilitated better learning (Crombie et al, 2013). The support of parents, partners and children was also identified as vital to successful completion of the/their degree (Crombie et al, 2013). Furthermore, Reyes et al (2015) grounded theory study, proposed the theory of 'pushing

through' to describe nursing student resilience. The second phase of the theory, identified as 'staying the course', recognised collaboration was an integral process of the resilience trajectory (Reyes et al, 2015). This phase suggested that a student must take advantage of social resources to manage challenging circumstances in the programme.

Self-efficacy

Self-efficacy has been described as one of the key reasons 'why some people snap and others snap back' (Garcia-Dia et al, 2013), highlighting that self-efficacy may enable an individual to stay strong when confronted with adversity. In the study by Hunter and Warren (2014), which included 14 clinical midwives who self-identified as being resilient, midwives felt they had become resilient at points in their career due to self-efficacy, which enabled them to feel confident and competent at work and believe they had the capability to effect change (Hunter and Warren, 2014). Other midwives believed resilience was developed through self-efficacy by 'finding a niche' where they had a strong perception of personal and professional 'fit' (Hunter and Warren, 2014). Similarly, a nursing study reported a strong positive relationship between self-efficacy and resilience ($r=0.63$, $p<0.001$) that enabled the nursing participants to remain strong when faced with challenging circumstances (Gillespie et al, 2007). In Williams (2016), midwifery students demonstrated self-efficacy when they described the need to learn to cope with 'everything that was thrown at them'. Similarly, Stephens' (2012) nursing student concept clarification of resilience identified multiple stressful periods throughout the nursing student degree, citing self-efficacy as an essential attribute of resilience for nursing students to persevere with the nursing programme.

Optimism underpinned by reflection

Several studies highlighted the importance of optimism and its contribution to resilience (McDonald et al, 2016; Tubbert 2016; Hunter and Warren 2014). A case study by McDonald et al (2016) described resilient midwives and nurses as those who 'thrived' in the workplace and were able to emphasise their enjoyment for work. The positive nature of their job allowed them to counteract the negative aspects of their work. Similarly, Tubbert (2016) demonstrated the value of optimism to counteract negative behaviour and multiple stress factors in the nursing environment. Tubbert (2016) described optimism as the ability to deliver a more relaxed workplace by providing positive behaviours within interpersonal interactions and communication.

A number of studies identified that reflection underpinned the capacity for optimism, in particular, reflecting with a positive focus (Lopez et al, 2018; Cope et al, 2016a, 2016b; Williams 2016; Reyes et al, 2015; Hunter and Warren 2014; Stephens 2012). In the study by Hunter and Warren (2014), participants reported that reflection enabled them to gain a sense of perspective on adverse situations. Additionally, Cope et al (2016a) demonstrated the use of reflection to positively re-evaluate practice and adapt. Interestingly, this study highlighted the capability of reflection as an antidote to the flight or fight response in stressful situations.

Williams (2016) found that midwifery students used the term reflection repeatedly in a focus group and was similarly related to optimism. The students reported reflection was vital in preparing them to respond to future situations positively. Interestingly, this finding suggested that an individual could not make the transitions required to progress in the midwifery programme without developing the practice of reflection (Williams 2016). Furthermore, Stephens (2012) cited both optimism and reflection as an integral attribute of resilience in nursing students. Lopez et al (2018) also recognised positive thinking enabled nursing students to view clinical placements as an opportunity to learn. Reyes et al (2015) highlighted the importance of reflection in the final phase of the development of a model of resilience for nursing students. This was shown in the nursing students' ability to assess the changes they had gone through, specifically creating an awareness of their self-transformation as a result of experiencing adversity.

A model case from midwifery student experience

Model case

To construct a model case of resilience to demonstrate key attributes in midwifery, this study drew on the example provided by Lexi during the focus group discussion. Lexi, a full time midwifery student, shared an experience in which she observed an interaction between a midwife and an anaesthetist.

Model case example

The anaesthetist spoke to a midwife rudely in front of a woman and her family as she was preparing the woman to go to theatre for a caesarean section. This confrontation arose as the anaesthetist did not agree with the medication ordered by the obstetrician and subsequently administered by the midwife. The midwife removed herself from the situation and reflected on the interaction in a separate room and determined she had not done anything wrong and the anaesthetist's behaviour was not appropriate. From doing this she sought support from the obstetrician and relevant staff to return to the room with her and discuss the situation with the anaesthetist.

In this case the defining attributes of social support, self-efficacy and optimism including reflection were evident. The midwife demonstrated the ability to bounce back when faced with adversity in practice, reflection with a positive mindset, use of social support in her work environment and self-efficacy in her actions. With this combination of key attributes she was able to overcome the adversity of dealing with a challenging individual.

Additional cases from midwifery student experiences

As per step six, extra cases from midwifery student experiences described in the focus group discussion were constructed to demonstrate a borderline case and a contrary case.

Borderline case

Sarah was an enrolled full-time midwifery student who shared an experience from clinical placement in which she observed a challenging interaction between a midwife and a ward coordinator.

Borderline case example

A midwife involved in a maternal collapse episode in the labour ward called the emergency team to assist with the situation. When the team arrived the woman was placed in a recovery position and the midwife was advised to start oxygen therapy. However, due to the woman's location the oxygen line could not reach. The midwife went and got extensor tubing so oxygen therapy could be administered. A coordinator then came into the room and in front of the woman and her family accused the midwife of not attaching the oxygen equipment correctly, putting the woman at risk. Upon review of the situation it was found that the midwife had used the correct processes to connect the oxygen tubing. Once the woman was stable the midwife approached the coordinator and highlighted that her behaviour wasn't appropriate and it wasn't her fault. Sarah reports she admired the midwife's confidence in her abilities even when someone else questioned her, she was confident (in) what she did was right.

Sarah's recollection exemplifies a borderline case, where only two of the three attributes of resilience are evident including optimism with reflection and self-efficacy. The midwife did not utilise social support therefore this may not entirely demonstrate resilience in the context of midwifery.

Contrary case

Jane, also a full-time midwifery student, relayed an experience she had while completing clinical placement.

Contrary case example

We are only on placement for a two-week duration, so don't want to take time off because we have had a bad day or because we witnessed an event that we know we are not coping with. If we choose to take a few days off we have to (do) make up shifts and those shifts may not work with a follow-through birth. So we sometimes choose to push ourselves when we probably shouldn't. Instead we should take a step back and realise the importance of having a day off when needed.

This case reflects an absence of the attributes of resilience and difficulty in managing the adversity. There appears to be a lack of self-efficacy and social support, there is an element of reflection though this is not optimistic.

Identify antecedents and consequences

In this concept analysis, perceived adversity and/or stress were identified as antecedents for resilience. The consequences of resilience included effective coping/adaptive capacity and positive mental health status.

Adversity and stress

Adversity was found to be the primary variable that differentiated resilience from other personality characteristics (Earvolino-Ramirez, 2007). Common to the literature, an adverse and/or traumatic event, as well as stress, was an antecedent repeatedly found as a prerequisite for the development of resilience (Cope et al, 2016a, 2016b; McDonald et al, 2016; Tubbert, 2016; Earvolino-Ramirez,

2007; Gillespie et al, 2007). For example, Earvolino-Ramirez (2007) described 'change, challenge, and disruption' as aspects of adversity that are seen prior to the resilience process occurring. Both midwifery and nursing literature describe adversity in relation to workplace conditions, workplace bullying, cases with poor outcomes and conflict between midwifery ideologies and institutional demands (Cope et al, 2016a, 2016b; McDonald et al, 2016; Tubbert, 2016; Hunter and Warren, 2014; Gillespie et al, 2007).

Similarly, within the literature adversity and stress experienced by midwifery and nursing students mirrored that of midwives and nurses. Williams (2016) highlighted adversity and stress were present when students failed theoretical assessments and were exposed to traumatic clinical situations. Stephens (2012) definition of resilience in the context of nursing students incorporated the adjective of 'perceived' in relation to stress and/or adversity. Additionally, Reyes et al (2015) highlight the importance of using the term 'perceived stress', as individuals will identify stressors at different levels of intensity depending on previous experiences and present coping capabilities.

Effective coping/adaptive capacity

Effective coping and capacity to adapt were identified as a consequence of resilience in the context of midwifery. In the study undertaken by Hunter and Warren (2014) individuals who had more than 15 years of 'hands on' clinical midwifery experience described themselves as demonstrating resilience to thrive and remain in the workforce. Similarly, Cope et al (2016b) examined registered nurses with greater than five years' experience and suggested resilience allowed them to flourish in their workforce, therefore promoting career longevity. Resilience was also identified as a significant component for midwifery and nursing students' success in their education and therefore completion of their programme (Williams, 2016; Pitt et al, 2014; Crombie et al, 2013). Beauvais et al (2014) identified a statistically significant relationship between resilience in nursing students and academic success ($p=0.007$), suggesting that greater resilience was related to increased academic success in this cohort. Similarly, Pitt et al (2014) used a longitudinal descriptive correlational study including 138 Australian nursing students. Resilience was recognised as a personal quality that was related to improved academic performance and was a predictor of the completion of the degree (Pitt et al, 2014). Furthermore, Williams (2016) demonstrated that midwifery student participants who scored moderate or above on the updated WTRS exhibited resilient behaviour that enabled them to persevere through the challenging academic components of the programme and demanding clinical placements.

Positive mental health status

A study by Mealer et al (2012), including 1239 intensive care nurses, revealed that nurses who had higher levels of resilience were less likely to develop stress disorders. Results suggest increased levels of resilience were independently associated with the absence of several mental health disorders and multiple mental health symptoms. Additionally, McDonald

et al (2012) found that an educational programme provided in the workplace aiming to develop, strengthen and maintain personal resilience resulted in overall positive wellbeing and improved resilience that was sustained in the workplace.

Interestingly, Reyes et al (2015) put forward the three-phase theory of ‘pushing through’ when describing the process of resilience for nursing students. One specific phase ‘disengaging’ resulted in ‘defocusing’, ‘disconnecting’ and ‘immobilising’. These attributes embody what some authors (Mealer et al, 2014) depict as an individual with decreased resilience. However, Reyes et al (2015) reported that was part of the progressive nature of resilience that allowed nursing students to move on to the final phase of the ‘pushing through’ theory to become resilient.

Define empirical referents

The final step of the concept analysis required an understanding of ways to measure resilience. Two tools, the resilience scale (RS) and the Connor–Davidson resilience scale (CD-RISC), have been recognised as the empirical referents contextualised to midwifery. Both scales have been used in the midwifery and/or nursing context and have received the highest psychometric rating (Windle et al, 2011). The RS was developed by Wagnild and Young (1993) and is the most frequently used measurement scale for resilience (Windle et al, 2011). The focus of the scale is to measure resilience to assess intrapersonal and interpersonal protective factors (Wagnild and Young, 1993). A higher score on the scale indicates a greater level of resilience (Wagnild and Young, 1993). An updated version of the WTRS has been utilised within the midwifery context (Williams, 2016). Examples of items from the RS that most closely relate to the defining attributes in this concept analysis are shown in Table 2.

The CD-RISC is a self-rating scale of 25 items that measure an individual’s level of resilience. A higher score on the scale indicates a greater level of resilience (Connor and Davidson, 2003). The defining attributes present in this analysis and the related items from the CD-RISC are present in Table 3.

Discussion

Drawing on the analysis process of Walker and Avant (2013), this study provides a foundational understanding of resilience within the context of midwifery. There were clear defining attributes consisting of inherent characteristics that included: self-efficacy and optimism underpinned by reflection, and external influences, specifically social support, all of which can be measured through existing resilience scales. It also became clear that adversity and/or a ‘stressful event’ was a significant and consistent trigger (antecedent) for resilient behavior (Garcia-Dia et al, 2013; Hunter and Warren, 2014; Earvolino-Ramirez, 2007; Gillespie et al, 2007). This could be extended to include ‘perceived adversity and/or stress’ highlighting the influence of individual interpretation in response to adverse events. The beneficial consequences of resilience for midwives and students included being able to cope and adapt, as well as experience positive mental health.

Through this analysis it became evident that resilience contextualised to midwifery is both inherent and modifiable.

Table 3. Defining attributes with corresponding Connor-Davidson resilience scale items

Defining attributes	Corresponding item on CD-RISC
Social support	Close and secure relationships Know where to turn for help
Self-efficacy	Coping with stress strengthens Think of myself as a strong person Strong sense of purpose
Optimism (including reflection)	Past success gives confidence for new challenge See the humorous side of things You can achieve your goals Not easily discouraged by failure

Of significance is the capacity for resilience to be developed (Crombie et al, 2013; Garcia-Dia et al, 2013; McDonald and Jackson, 2012). In particular, findings suggest resilience is regarded as a concept that can be learnt and enhanced through interventions, particularly through education strategies (Richardson, 2002). This is an important finding as it highlights the potential for the individual midwife and midwifery students to increase resilience. In light of this, exploring the attributes for ways to develop and foster resilience is important.

Self-efficacy was identified as a key attribute of resilience in the midwifery context. When exposed to adversity and/or stress, individuals with high levels of self-efficacy have demonstrated the ability to remain strong and thrive in the workplace, and students have been shown to successfully complete their programme (Hunter and Warren, 2014; Williams, 2016; Stephens, 2012; Gillespie et al, 2007).

Purposefully cultivating self-efficacy has been recommended as a strategy within healthcare provision. It was found that a focus on building self-efficacy not only improved the provision of care but also enhanced communication within the multidisciplinary team (Cooper et al, 2012). A study by Cooper et al (2012) demonstrated the potential for frequent simulation training in the workplace to assist the development of effective coping techniques when presented with an obstetric emergency (Cooper et al, 2012). The simulation training appeared to increase the midwives’ belief in their capability to effectively manage various emergencies in the workplace and communicate appropriately with the multidisciplinary team in a traumatic event.

Within the student population it was identified that building self-efficacy impacted on student wellbeing, supported coping responses and minimised burnout (Gibbons, 2010). Specifically, verbal support for student learning, providing positive feedback and support were recommended to build students’ self-efficacy (Gibbons 2010). These recommendations are significant and should be elements that are embedded in midwifery education programmes to facilitate further development of self-efficacy. It would seem that when students are provided with the opportunity to practice midwifery skills in a supportive clinical environment, they are better able to foster higher efficacy in their capabilities to perform midwifery skills (Williams, 2016).

Optimism was also recognised as an important factor in resilience (Lopez et al, 2018; Cope et al, 2016a, 2016b; Williams, 2016; Reyes et al, 2015; Hunter and Warren, 2014; Stephens, 2012). In particular, the combination of optimism underpinned by reflection enabled an individual to have a positive outlook when presented with an adverse situation (Cope et al, 2016a). Supporting this, there is a growing body of literature which has identified the value of embedding reflection in practice across a range of undergraduate programmes (Bass et al, 2017). Specifically, reflection is important in the learning process to facilitate health professionals to examine and advance their intuitive processes and improve their tacit knowledge (Bass et al, 2017). In addition, reflective practice is believed to be the basis of an accountable and autonomous practitioner (Australian Nursing and Midwifery Accreditation Council, 2014; The Nursing and Midwifery Council, 2009).

Reflection has been incorporated into the Australian and UK midwifery education standards (Australian Nursing and Midwifery Accreditation Council, 2014; The Nursing and Midwifery Council, 2009), with a variety of reflection models used within programmes to guide the development of reflective practice (Bass et al, 2017). Narrative reflection has been recognised as an appropriate method to develop self-awareness, empathic reflection and reflective communication (Bolton 2010). A model specifically developed for midwifery students is the Holistic Reflection Model (Bass et al, 2017). This was piloted and shown to develop reflective conversations, integrate theory and practice within midwifery as well as monitor the formation of reflective practice (Bass et al, 2017).

A key resilient attribute identified was social support. As may be expected, social support was vital in coping well with adversity, providing the opportunity to debrief, as well as the ability to gain perspective (Hunter and Warren, 2014). Colleagues were identified as a valuable source of social support, providing an opportunity to reflect and gain a sense of perspective on challenging experiences (Hunter and Warren, 2014). Role modelling from supportive colleagues has been recognised as a beneficial strategy to facilitate the learning of resilient behaviour (Hunter and Warren, 2014). Similarly, the value of experienced midwives acting as role models to less experienced colleagues and students has been acknowledged to positively influence resilience (Hunter and Warren, 2014). It would seem that midwives themselves could be an important resource for developing resilience.

Similarly, within the midwifery programme, peer support has been identified as valuable in facilitating professional identity

and increasing commitment to becoming a midwife, with the potential to increase retention in the profession (Clements et al, 2013). Importantly, peer support appeared to improve coping mechanisms within the nursing student population in relation to aggression and bullying in the clinical environment (Jackson et al, 2011). It is likely this would apply to midwifery students as challenging relationships are a frequent source of adversity within the midwifery student population (Pines et al, 2014; Cillingir et al, 2011). Establishing strategies which facilitate peer support within midwifery education programmes would be advantageous.

Limitations

As concepts are not fixed entities and frequently evolve over time (Walker and Avant, 2013), the usefulness of this concept analysis may alter as knowledge on resilience expands and develops. Further, as only publications written in English were included, this could have led to an incomplete analysis of resilience in the context of midwifery as resilience may be interpreted differently in various countries and cultures. Additionally, due to the lack of published literature regarding resilience in midwifery, nursing studies were included (Table 4). This may have produced different findings compared to midwifery literature only. Finally, the inclusion of model cases drawing on midwives' experiences as well as midwifery students' experiences would have strengthened the study, though this was constrained by the research being conducted as part of a Master's programme.

Conclusion

This concept analysis has clarified an understanding of resilience in the context of midwifery. It is clear that perceived adversity and/or stress are key antecedents and that social support, self-efficacy and realistic optimism, underpinned by reflection, are essential elements of resilience. The outcomes of resilience in this context, for midwives and midwifery students alike, include an effective coping and adaptive ability, and positive mental wellbeing. The key findings of this analysis suggest that resilience, in the context of midwifery, is defined as a dynamic process to overcome perceived adversity and/or stress that draws upon internal and external sources, to achieve effective coping/adaptive capacity and wellbeing. Additionally, the understanding gained from this analysis has provided a basis for further research to develop strategies to strengthen resilient behaviour within the midwifery profession and specifically within the education environment for midwifery students.

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Social, economic and professional barriers influencing midwives' realities in Bangladesh: a qualitative study of midwifery educators preparing midwifery students for clinical reality

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Abstract

Introduction. Identifying existing barriers inhibiting the provision of quality care in Bangladesh can guide both the government, in fulfilling its commitment to establishing the midwifery profession, and midwifery educators, in preparing midwifery students for the reality of midwifery clinical work.

Aim. The aim of this study was to describe midwifery educators' perceptions of midwives' realities in Bangladesh, focusing on social, economic, and professional barriers preventing them from carrying out quality care.

Methods. Data were collected through focus group discussions with 17 midwifery educators and analysed using qualitative content analysis, guided by the analytical framework "What prevents quality midwifery care?". Ethical clearance was obtained from Bangladesh's Directorate General of Nursing and Midwifery.

Results. The results generated by the application of the framework included social barriers of gender structures in Bangladeshi society. This influenced entry into midwifery education, carrying out midwifery work safely, and the development of the profession. Economic barriers included challenges for Bangladesh as a low-income country with a large population, inadequate salaries, and staff shortages, adding extra strain to midwives' working conditions. These social and economic barriers were further enhanced by professional barriers due to the midwifery profession not yet being fully established or acknowledged in the health system.

Conclusions and implications. The study presents novel country-specific perspectives but confirms the general underlying issues of gender inequality as a base for barriers preventing midwives from carrying out quality care, in line with the framework "What prevents quality midwifery care?". Addressing these structures can facilitate more students to enter midwifery education, enable quality midwifery work free from discrimination, and provide sufficient working space and professional integrity. Leadership training is pivotal to increasing responsiveness to the needs of the new cadre of midwives. Midwifery educators should take the lead in sensitising clinical supervisors, mentors, and preceptors about midwives' realities in Bangladesh.

Key words: Quality midwifery care, midwifery educators, Bangladesh, focus groups, evidence-based midwifery

Introduction

Midwifery care is identified as crucial for the improvement of maternal and child health. When provided at a high-quality standard, it has the potential to reduce maternal and neonatal mortality substantially, with an estimated 80% of all maternal deaths prevented through midwife-led family planning, maternal, and newborn health (Homer et al, 2014). A professional midwife works in partnership with women to provide sexual and reproductive health education, support and care throughout the woman's life cycle, including pre-pregnancy, pregnancy, labour and the postpartum period (International Confederation of Midwives (ICM), 2017a). Prerequisites for quality midwifery care are appropriate licenses for practice, regulated settings for the midwifery scope of practice, sufficient, effective, and proper use of existing resources, teamwork, and effective referral systems (Renfrew et al, 2014). Trained, licensed, motivated, and respected midwives, with sexual, reproductive, and perinatal health within their professional scope, are central in providing this

care (Koblinsky et al, 2016; Renfrew et al, 2014). Midwifery educators are central links and leaders in ensuring that quality care, equity and education are provided to midwives and women (ICM, 2017b). To ensure that midwives are educated to the level required to provide evidence-based quality midwifery care, there is a need for high-quality education programmes run by well-educated and competent midwifery educators (Bharj et al, 2016; Way, 2016; Fullerton et al, 2013; Renfrew et al, 2014). According to a recent study, midwifery students in Bangladesh identified women's vulnerability and midwives' lack of recognition in the medical hierarchy as factors that leave midwives with low levels of autonomy (Bogren et al, 2018). As 60% of the midwifery education programme takes place in clinical placements, midwifery educators need to be well aware of the reality of clinical work so they can prepare their students for their new profession.

Bangladesh, with for a population of 163 million, is the tenth most densely populated country in the world (Worldbank, 2016) with approximately 3.1 million live births a year (Bangladesh

Bureau of Statistics, 2015). Only 47% of births take place in a healthcare facility; barely 50% of these are attended by a skilled practitioner and there is a high maternal mortality rate (MMR) of around 196 maternal deaths per 100,000 live births (NIPORT, ICCDR, MEASURE, 2016). The Ministry of Health manages the country's healthcare service, which is organised into four levels of care: primary level, secondary level, tertiary level and specialised hospitals. Due to the high MMR, the government has initiated a number of health-system strategies as a response to the global call for the provision of quality care through well-educated midwives in accordance to international standards (ICM, 2017a, 2013). It was anticipated that posting a larger number of well-educated midwives at healthcare facilities throughout Bangladesh would improve maternal and child health outcomes. With this as a backdrop, the Bangladeshi Government determined to educate and deploy professional midwives throughout the country (Bogren et al, 2017). A six-month post-basic midwifery programme for nurse-midwives and a three-year diploma in midwifery have been initiated, and a total of 1,600 professional midwives had graduated by 2016 (Bogren et al, 2017). Due to midwives being identified as crucial in the process of improving quality maternal and child health, extensive demands are placed on them, and in turn on midwifery educators whose job it is to prepare future midwives to deliver quality care to mothers and their offspring in the clinical reality they face.

The question what prevents quality midwifery care has been investigated globally in consultation workshops with midwives, focusing particularly on midwifery in middle and low-income countries. Workshops organised by the ICM, White Ribbon Alliance, and WHO resulted in the development of a framework identifying social, economic, and professional barriers (Filby et al, 2016; WHO, 2016). As the midwifery profession has only recently been introduced into the Bangladeshi health system, identifying existing barriers seen as inhibiting the provision of quality care can inform the government in fulfilling its commitment to establishing the midwifery profession and the midwifery educators in preparing the midwifery students for the clinical realities of practising midwifery. Building on this, we applied the framework to identify – from the perspective of midwifery educators – barriers inhibiting the provision of quality midwifery care in Bangladesh. This was to provide stakeholders and the new cadre of midwives in Bangladesh with country specific perspectives, which could resonate back to the global understanding of barriers to quality midwifery care.

The aim of this study was to describe midwifery educators' perceptions of midwives' realities in Bangladesh, focusing on the social, economic, and professional barriers that prevented them from carrying out quality care.

Method

A qualitative design (Elo and Kyngäs, 2008) was chosen with focus group discussions (FGDs) based on a semi-structured topic guide developed from a pre-existing framework about barriers to quality midwifery care (Filby et al, 2016). This allowed a study of midwifery educators' perceptions of the realities of midwifery in Bangladesh, reflected through the framework and their general perspectives, to inform the development of the

theory base concerning quality midwifery care. A qualitative research design was applied, this being recognised as helpful when little is known about the phenomenon under study (Polit and Beck, 2012), such as Bangladeshi midwifery educators' perceptions of midwives' realities.

Study setting

The study was conducted at three public nursing institutes and colleges in three different settings in Bangladesh: in the capital city of Dhaka, in the semi-urban district of Tangail, and in the more remote city of Rangpur. Since 2012, these colleges and institutes have had a yearly intake of 25 midwifery students into a three-year diploma course in midwifery. Students enrolled in these midwifery programmes come from urban, semi-urban, and rural areas, and the majority of them live in dormitories attached to institutions and colleges during their studies and clinical practice. Clinical practice takes place both in city-based referral hospitals and in Upazila health complexes where midwifery care during pregnancy and delivery is provided. The midwifery educators involved in these diploma programmes have undergone either a six-month post-basic advanced midwifery training course or a one-month midwifery educator training course and they have clinical experience as nurses or nurse-midwives.

Participants and data collection

A total of 17 midwifery educators were purposively included as participants in the study, and a FGD with five to seven participants was conducted at each college or institute, ie, three FGD were undertaken. All participants were over 45 years of age and were living in urban areas. All but two were married with between one and four children.

Data were collected in April 2017 by faculty members at the three different sites, two faculty members at each site, under supervision from the researchers responsible for the study. The faculty members/data collectors were themselves students completing a master's degree in Sexual and Reproductive Health and Rights, in which qualitative data collection methods had been taught and practiced prior to the study. After permission had been granted from the principals and nursing instructors in charge at each college or institute, invitation letters were handed over personally to potential participants, together with oral information about the study. Time was given to consider participation. Seventeen midwifery educators agreed to participate in the study. Before conducting the FGDs, the voluntary nature and confidentiality of the study were explained to the participants, and oral and written consent was given by all participants. Bangladesh's Directorate General of Nursing and Midwifery has the main responsibility for activities that take place in the nursing and midwifery institutions in the country and it provided ethical clearance for the study, on 21 February 2017.

A topic guide, based on the analytical framework of barriers inhibiting the provision of quality care by midwifery personnel (Filby et al, 2016), was developed and used during the FGDs. This covered social, economic, and professional barriers. Using a semi-structured approach it included open-ended questions such as: "Previous research has shown that midwives are

sometimes treated badly or experience poor conditions in society. Have you heard of this happening in your society, related to... gender inequality? How? Lack of safety and security? Please describe (...) In your setting, are midwives' realities affected by practice restrictions? How? What makes you think this? During the discussions, the participants were encouraged to reflect and share their experiences freely. The FGD sessions were conducted in private settings at each institution, in both English and Bengali, to enable deeper discussions and understanding, and lasted up to one hour each. They were digitally recorded with the participants' permission.

Analysis

The recordings were transcribed verbatim and the Bengali parts were thereafter translated into English by an experienced translator, independent of the data collectors or research team. Accuracy of translation was confirmed by Bengali-speaking members of the research team to enhance the credibility of the study. Therefore, formal forward and back translation (Abujilban et al, 2012; WHO, 2005), was not deemed necessary.

The transcripts were analysed by content analysis described by Elo and Kyngäs (2008). Firstly, all transcripts were read several times in order to become familiar with the content. The second step was to search for units of meaning, consisting of descriptions corresponding to the aim. The third step was to group the meaning units together, after being compared for similar content. They were labelled and sorted into codes and sub-categories based on the different barriers in the framework. These sub-categories were then modified to mirror the collected data in an adequate way. The modified sub-categories were sorted into the broad categories social, professional, or economic barriers. The analysis was not a linear process and there was open and critical dialogue within the research team throughout, until the final terms were determined by consensus. Finally, the transcripts were re-read to verify the analysis and to find quotes illustrating variation in the meaning units.

Results

The results comprised the three categories: social barriers, economic barriers and professional barriers, each of which included three sub categories, see Table 1.

Social barriers

The category of social barriers included the sub-categories: gender inequality permeates midwives' lives from childhood, violence in society continues in the workplace, and disrespect for being young or single and working.

Gender inequality permeates midwives' lives from childhood

Study participants described how living in a society primarily dominated by men causes neglect and negative attitudes towards women's – midwives' – lives from birth to death:

"Our society is mainly dominated by the men, and their negative attitude towards women is seen everywhere in society. As women, midwives are neglected in society" (FGD2).

They outlined a perception among people that it is not necessary to educate female children, since they cannot both

Table 1. Social, economic and professional barriers

Social barriers	Gender inequality permeates midwives' lives from childhood Violence in society continues in the workplace Disrespect for being young or single and working
Economic barriers	A new profession with a low salary Lacking support for housing and transport A huge population and shortage of staff lead to little or delayed leave
Professional barriers	Being absent from policy dialogue and unable to contribute to decisions Not being recognised as a skilled professional Lacking resources and space for practice

earn money and raise a family. Often controlled by males, women were described as having little power over financial issues, pregnancy or how many children they may have. The participants described having little possibility/potential to engage in decision making, and experienced that balancing unpaid domestic work and childbearing tasks with their professional role could prevent midwives from providing quality care. The cultural perception that females should not be working outside the home and had little right to move freely was even more pronounced when linked to working night shifts.

"Society has a view that the men are the main contributors to the family rather than the women. Extra care during childbirth is not needed; society thinks that education is not essential for women as they don't need to take on a profession or go outside their houses" (FGD2).

Violence in society continues in the workplace

The theme of male dominance – which resulted in a lack of empowerment for women – was evident within the data. The participants described how women are at risk of being violated and harassed in their own families or homes, outside their homes, and in the workplace. Thus, as a midwife, it could be difficult to move and work freely without being harassed or violated, particularly at night.

A lack of safety and security were partly ascribed to the overall working environment, where labour wards or emergency wards were open for anyone to enter.

"As women, midwives are also the subject of male attraction and these midwives are not able to move freely, even in the emergency care she won't go out alone especially in the night time" (FGD2).

Pressure, competition and neglect at work or during clinical placements was another theme which was raised, which the participants identified as a form of psychological violence. When placed in clinical practice, competition with intern doctors, student doctors, and other health workers

could affect midwifery students' opportunities to provide care for mothers. Completing their clinical duties in these cases was extremely difficult and required a large amount of mental strength:

"They face barriers that inhibit practice in the delivery ward. In Dhaka Medical College many students are from the nursing faculty and there are a huge number of student doctors who midwifery students need to compete with. Sometimes these students face psychological pressure and are not allowed to practice in the ward by their competitors. This is the violence they have been facing, but not physical violence" (FGD1).

The participants thus stated that midwives did not feel safe in their workplaces and concluded that if they were not fearful of being violated or neglected, they would have more courage, strength and space for providing quality care:

"The chance of being harassed, verbally bullied or physically and sexually abused – this affects their feelings of selfhood and prevents them from providing quality care" (FGD3).

Disrespect for being young or single and working

The midwifery profession is a young profession in Bangladesh and people are often unfamiliar with it, so they do not want to fully rely on the work midwives do. Linked to this is the fact that newly graduated midwives are often young and single:

"People think midwives are young and inexperienced so they don't trust their abilities. This is challenging for the midwives who are single and working" (FGD2).

Particularly challenging is the combination of being young, single and posted to rural areas lacking adequate accommodation. This causes new midwives to feel unsafe, vulnerable and at risk of being subjected to physical, psychological and sexual harassment and violence. So far a limited number have been posted in remote settings, but these postings will gradually increase, and the midwifery educators pointed out the need to improve midwives' safety so they will be able to provide quality care in these remote settings:

"Midwives are not feeling safe in their workplaces. If they didn't have to feel afraid of being violated or neglected they could provide quality care. Workplaces need to be safe and secure because newly recruited midwives are mostly single so they need better safety" (FGD2).

Another aspect relevant to single midwives – with implications that belong at policy level – is that a midwife's salary is not enough to cover the basic living costs for single women lacking family support.

Economic barriers

Economic barriers comprise the sub-categories: a new profession with a low salary, lacking support for housing and transport, and a huge population and shortage of staff leads to little or delayed leave.

A new profession with a low salary

In Bangladesh, midwives belong to a new cadre that has no separate salary structure. Study participants described how midwives get the same salary as nurses, which made sense for some of the FGD participants, as midwives were considered to be "second class employees of the state" on the same level

as the nursing profession. Others, however, claimed that midwives' salaries are not in line with similar professions, that they are actually too low and fail to cover basic living costs:

"The low salaries are not comparable with similar professions and not enough for fulfilling basic needs..." (FGD3).

The low salary structure permeates the midwives' profession throughout their careers, from being students to becoming teachers. Bangladesh is a low-income country, which has led to a high level of dependency on international donors to cover midwives' salaries. In addition salaries are low in comparison with the private sector, which has a negative impact on the quality of care:

"... their salaries are much lower than in the private sector, for this reason midwives cannot provide quality care" (FGD3).

The participants stated that raised salaries, incentives, recognition or awards would significantly increase staff satisfaction and professional motivation. This, in turn, would increase the output of the work performed by the midwives. Study participants therefore declared a need for the government to come forward and look into the issue of salaries within the midwifery profession.

Lacking support for housing and transport

As a new cadre, no accommodation or transport facilities have been provided by the government. Study participants described how midwifery students live in nursing hostels and dormitories, leading to a shortage of accommodation and an unacceptable living standard:

"There is an accommodation shortage and these midwifery students are now living in the nurses' quarters, which are being managed mutually" (FGD1).

In addition, midwifery students are subjected to stress caused by the accommodation's lack of safety and the pain of being separated from their family's guidance and support. Thus, entering midwifery education caused these future midwives triple tensions:

"Inadequate and unsafe accommodation and isolation from family support" (FGD3).

Study participants could see a potential problem in the future regarding the housing and transportation of midwives who were to be posted in more remote areas with their duties including being available for emergency calls. This would require intervention from the government to ensure they were supplied with adequate accommodation and transportation:

"The midwifery profession comes with sensitive and emergency care; she has to be prepared for emergency calls" (FGD3).

A huge population and shortage of staff lead to little or delayed leave

The participants stated that in order for quality care to be provided, rest and recreation should not be underestimated. They described some of the consequences of working as midwives in a country with a huge population. An imbalance in numbers between midwifery care providers and care receivers had effects on the midwives' private life and health.

"Bangladesh is a densely populated country – compared to maternity patients, midwives are few in number and they suffer from the workload. Sometimes these midwives don't

have their daily break for rest which makes them feel dull; there are few chances for recreation" (FGD2).

Due to staff shortages, midwives could be forced to work while ill or compensate for illness among colleagues. This, together with having little leave or breaks from their work, does not only affect the happiness of a midwife but also the quality of her work:

"If the midwife is sick she has to wait for her leave, or she won't get home on time, which makes a midwife unhappy and hampers her ability to provide quality care" (FGD2).

Professional barriers

A number of professional barriers to quality care were outlined and organised in the three sub-categories: being absent from policy dialogue and unable to contribute to decisions, not being recognised as a skilled professional, and lacking resources and space for practice.

Being absent from policy dialogue and unable to contribute to decisions

The participants described that when policies for midwifery practice are discussed and settled, it is not a given that representatives from the midwifery profession would be present. They mentioned occasions when the Midwifery Association had not been informed of meetings and policy dialogues. Thus, there is a risk that policies are made by other professionals who lack insight into how to improve the quality of midwifery care:

"Midwives have less opportunity to participate in policy dialogue and the authorities have often not placed the midwives in the policy dialogue, which gives them less scope to contribute in the decision making" (FGD2).

The participants ascribed this situation to the male-dominated structure of Bangladeshi society. One consequence of a patriarchal society is that women have little opportunity to be heard and contribute to decisions. This, they stated, is also apparent in how midwifery is approached in Bangladesh. One participant said:

"Men are the decision-makers for midwifery in our country and as women, midwives don't have the opportunity to raise their voices or contribute to any decision" (FGD2).

They concluded that if midwives could contribute to policy making, the quality of services would improve:

"For the betterment of this profession, a separate midwifery functional body needs to be put in place – one that is run by midwives, not by the others. If we could establish this sort of functional body we could provide better care" (FGD2).

Not being recognised as a skilled professional

Lack of recognition of midwives' skills was seen on several levels in society. Since midwifery is a new profession, the participants said that most people are unsure of the role or responsibilities of a midwife. They are often confused with nurses:

"Society doesn't know about midwifery and the role of midwives because it is a new profession. People confuse the nursing and midwifery professions. Still it is unrecognised to them" (FGD1).

A consequence of this lack of awareness was that

participants felt that doctors are given a greater acceptance from people in society for mistakes in the care and treatments provided, but mistakes made by midwives are not tolerated in the same way. They hoped the acceptance of midwifery work would gradually increase over time.

Not even doctors and other health workers are familiar with midwives and their work. Sometimes these professionals questioned the knowledge and skills of the midwives:

"Sometimes nurses and doctors ask the midwives questions about their activities – why they do things in such a way? And there is the other problem of not getting the chance (to do their work)" (FGD1).

Participants said that due to the midwifery profession not yet having gained public awareness, people do not recognise or trust their work. Another issue brought up was that the young age of new midwives contributes to their lack of recognition. One participant stated that:

"Because of their young age, they don't get a proper chance to practice. They are questioned about their capability and knowledge" (FGD1).

Participants identified several ways of improving their recognition, status and working situation. An increase in salary was one way, offering refreshment training courses for midwives was another, and a third was promoting midwives' attendance at conferences or knowledge-sharing sessions.

Further, it was concluded that recognising midwives' capabilities to perform a good job is effective for work satisfaction as well as for the quality of care, and healthcare managers, professionals and lay people could all contribute to this. One participant shared a personal experience:

"I was on vacation somewhere and standing on the bank of a river. A couple recognised me and came closer. The man asked me; 'Do you work in the Dhaka Medical?' I said 'Yes'. He said 'My wife had eclampsia and you treated her very well, she is in good health now'. The couple invited me to go to their home. It was a wonderful feeling – people never forget the faces they have seen in their critical time" (FGD1).

Lacking resources and space for practice

Clinical practice is one of the most important parts of the teaching and learning activities of midwifery students. A midwife must practise hands-on alongside theory but participants identified several barriers inhibiting this.

Of particular concern was the lack of space for practice. The participants described how midwifery students and midwives face barriers inhibiting hands-on training in hospitals:

"During practice sessions all other students from different faculties come together within the scheduled midwifery practice so midwives get limited scope for practice" (FGD2).

This was ascribed to the domination of medical doctors and nurses in the clinical areas:

"They don't get a proper chance to be trained in the labour ward because of the domination of doctors and nurses" (FGD1).

If a midwife were to practice independently, this would contribute positively to the retention of midwives. One participant stated that a midwife allowed to practice independently would never consider leaving the profession.

The midwifery educators further described the need for

additional resources for the teaching institutions as well. A lack of teachers, clinical preceptors, and mentors for the midwifery students while in clinical practice made it difficult to support the future midwives in their practice of quality care:

"It isn't possible to mentor everyone because we have a shortage of teachers, supervisors, and mentors" (FGD1).

Due to the shortage of teachers, midwifery students often have to learn by themselves. The midwifery educators asked:

"...if we don't teach them with quality education how can they become quality midwives?" (FGD1).

A third reason behind the limited practice opportunities was a lack of supplies and equipment, or lack of maintenance of the resources available. Participants described Bangladesh as a developing country where there are limited material resources available for the work carried out in the hospital. This shortage of supplies and equipment has a direct effect on the midwives and the midwifery students' opportunities to practice midwifery care in order to reach the desired standard:

"The supplies of equipment are not adequate to perform the work. This lack of supplies means that the midwives have not been performing quality midwifery care" (FGD3).

The need for a systematic working environment was raised, an environment in which everyone knows their responsibilities and can be accountable for their own duties and actions. Further, the importance of teamwork was highlighted, from support staff all the way up to the doctors and head nurses of the wards and departments. This was seen as essential, both to support the training of midwifery students and to make the most of the limited materials and resources available.

Discussion

The aim of this study was to illuminate midwives' realities in Bangladesh based on the Filby et al (2016) professional mapping framework: "What prevents quality midwifery care?", from the perceptions of midwifery educators. The midwifery educators participating in the study described structures in society that influence the possibilities to enter into midwifery education, to carry out midwifery work safely and to contribute to the development of the profession. As a low-income country with a large population, inadequate salaries and a shortage of staff add strain to midwives' realities. These barriers are further enhanced by the midwifery profession's relatively recent development in Bangladesh. As an increasing number of new midwifery students are now being trained, this study illuminates important underlying factors that may inhibit both the quality of care and the retention of midwives in the midwifery workforce. Participants highlighted the need for awareness of the significance of midwifery and the midwifery profession to be increased in the country, and how a lack of understanding of midwifery can negatively influence quality care. In line with this, midwives in Jordan have described the "invisibility" of midwives as a risk factor related to decreased confidence, which subsequently can support the trend of medicalising childbirth when their voices are not heard (Shaban et al, 2012). Several studies have elaborated on how this awareness also needs to be increased at government level to influence policies made and to ensure sufficient investments are made in midwifery education and services, and at the workplace

level, where midwifery work needs to be acknowledged and valued (Filby et al, 2016; Gualda et al, 2013; Shaban et al, 2012; Büscher et al, 2009). Our study findings support the calls for increased public and professional promotion of midwifery, not the least from other healthcare cadres (Gualda et al, 2013; Shaban et al, 2012) and highlight further the need to raise the awareness of the importance of midwives and midwifery care among people in general society. In future research it would be worth investigating the understanding of midwifery among physicians and nurses, given the different philosophical bases.

A significant barrier, permeating all layers, is gender discrimination and non-empowerment of women. This echoes several of the included studies in the Filby framework, concluding that fundamental to the process of improving the quality of midwifery care is addressing underlying gender structures since these influence midwives' lives, possibilities, and positions (Bogren et al, 2018; Filby et al, 2016). The participants in our study described how midwives are targeted by these inequalities in both direct and indirect ways, from childhood onwards, and how this even leads to being subjected to structural (Galtung, 1990) or inter-personal violence (Krug et al, 2002). Thus, the findings of this study can be used by midwifery educators to reflect together with their students on social barriers inhibiting the provision of quality care.

A societal factor with relational implications relates to the education and respect for women's skills and possibilities. A prevailing hesitance in supporting young women entering midwifery education, and the risks of midwives being harassed, was described. A positive trend has been seen in Bangladesh in recent years, both in societal norms related to female education (Blunch and Bordia Das, 2015) and in the proportion of women completing secondary education and university degrees (The Asian Development Bank, 2017). Linked to this are trends where the wage gap between the genders has narrowed, although these positive changes are not evenly distributed over all income classes (Ahmed and McGillivray, 2015). However, barriers related to gender do prevail (Haider, 2012), and the country scored 'very high' in gender discrimination against women in social institutions in 2014 (Social Institutions and Gender Index, 2014). There is still a way to go to reach equal prerequisites that can lower the threshold for women entering midwifery education and enable quality midwifery work without the risk of harassment or physical safety.

On a policy level, study participants described frustration when they are not able to contribute to decision making due to a lack of presence in policy dialogues, which may hamper quality midwifery care. A link to gender was visible through participants' associations to a male-dominant society. This resonates with Filby et al (2016) and is similar to findings in a study of midwifery students' perceptions of barriers inhibiting quality midwifery care (Bogren et al, 2018). Bogren et al (2018) also described a lack of political understanding for midwifery, in many settings influenced by midwifery being less valued due to its focus on "women's issues". The gendered structures outlined in our study underscore the need for a strong professional association, which can advocate for midwifery in policy making. In line with this, the RCM has been funded by United Nations Population Fund to assist in strengthening the

midwifery associations globally.

Workplace level and professional relations: study participants raised the need for space to practice as midwives, both in terms of professional integrity and respect. Once midwifery students have learned the importance of, and how to provide, quality care they face the reality of being unable to perform tasks in the way they have been taught, which increases their risk for stress of conscience. Stress of conscience, which can be described as negative stress burdening a person's conscience (Glasberg et al, 2008) has linked health care professionals to burn out, intentions to quit, and a reduced quality of the care provided (Bremnes, et al, 2018; Lo et al, 2018; Åhlin et al, 2014; Juthberg et al, 2008). Awareness of the consequences of this negative spiral is central, particularly among management staff. Support, or a lack of support, from superiors is shown to influence the effects of stress of conscience (Åhlin et al, 2015; Glasberg et al, 2008) as well as the quality of care (Tibandebage et al, 2015), which corresponds with findings in our study. This points to a need for leadership training to increase the responsiveness to the needs of staff (Madede et al, 2017). Additionally, it is pivotal to actively raise understanding among management, midwifery students and clinical staff in different positions regarding the impact of attitudes and hierarchies in the work place.

Methodological considerations

The choice of a qualitative approach, methodology and theory (Filby et al, 2016) provided novel perspectives of midwifery educators in a setting where the midwifery profession is newly established. The data was collected in institutions at three diverse sites from 17 purposively included midwifery educators, and based on their different experiences in FGDs with five to seven midwifery educators at each college/institute. A quantitative or mixed methods approach can be developed from this limited qualitative study to enable trustworthiness and generalisation of the results and thereby provide a more solid platform for improving quality midwifery care in Bangladesh. The findings should, hence, only be cautiously transferred to other non-similar contexts, as the qualitative study design does not allow generalisations.

The data collectors were bilingual English and Bengali speakers, which strengthens the credibility and richness of the data, since the participants were free to use their native language if needed. To strengthen the quality of transcription and translation of the data, an experienced translator, independent from the research team or data collectors, with no previous knowledge of the topic guide (Abujilban et al, 2012; WHO, 2005), transcribed the Bengali parts to English. Bengali-speaking members of the research team thereafter verified the

translations. Therefore, no formal back translation into Bengali was deemed necessary. The data collectors were familiar with local contexts, which strengthens the credibility of the study.

The data collection performed by different data collectors in the different sites may constitute a weakness affecting dependability, but this was to some extent compensated for by using a design with the same detailed topic guide at each site. A well-described and structured analysis method (Elo and Kyngäs, 2008) and similar findings in other studies (Bogren et al, 2018; Filby et al, 2016) further strengthen the trustworthiness of the study. Using a framework in the data gathering and analysis can be seen as a limitation. Not focusing on both barriers and facilitators could be a source of bias with pre-set ideas and attitudes. The topic guide based on the framework may have narrowed the perspectives derived from the participants. The impression of the results can easily be that it is a lack of independent innovation. To limit this risk, the discussions were open, with room for the participants to narrate freely as long as the topic was related to the aim. Despite the limitations, novel perspectives were found and interpreted in the context of other studies in the discussion section. These findings can provide a base for further research and development initiatives for women and midwives realities in Bangladesh.

Conclusions and clinical implications

Economic barriers, gender inequality and discrimination, plus professional barriers such as lack of integrity might prevent skilful young women from entering midwifery and providing quality care. To improve quality midwifery care in Bangladesh, effort is needed on all levels. Addressing unequal gender structures can lower the threshold for entry into midwifery education, enable quality midwifery work free from discrimination or physical safety risks, and provide space where midwives can work with professional integrity. Midwifery educators can take the lead in sensitising clinical supervisors, mentors, and preceptors about midwives' realities in Bangladesh. This includes encouraging them, together with the midwifery students, to reflect on caring actions for the provision of quality care in situations where women are vulnerable in society and midwives have low autonomy in the workplace. Leadership training for management can increase responsiveness to the needs of this new cadre of midwives and raise understanding among all cadres of staff regarding the impact of attitudes in the work place. A strengthened professional association can advocate for midwives' roles and mandate. At a unique time in midwifery practice in Bangladesh there is an opportunity to inform and strengthen the practice of midwifery educators and midwives to provide the care for women that they are trained to give.

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Non-medical prescribing behaviour in midwifery practice: a mixed-methods review

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Abstract

Background. Non-medical prescribing is a new skill in midwifery practice. Information is needed on whether this is an activity that is feasible, appropriate, meaningful and effective.

Aim. To report on the determinants of midwife prescribing behaviour to inform midwifery practice.

Method. A mixed-methods review using an integrated approach combining methodologically diverse data into a single mixed-methods synthesis. A systematic search of the literature was conducted. Data were categorised according the feasibility-appropriateness-meaningfulness-effectiveness (FAME) scale and thematised according the attitude, social-influence, self-efficacy (ASE) model. A thematic analysis, a Bayesian descriptive analysis and Bayesian Pearson correlations of the FAME-categories and ASE-themes were performed.

Findings. Seven studies showing moderate to good quality were included for synthesis. The FAME categories feasibility and appropriateness tended to affect the utility of midwife prescribing; meaningfulness and effectiveness were related to non-utility of prescribing. There were weak to moderate correlations between the FAME categories and the ASE themes social influence, intention, barriers and supportive factors and perceived knowledge (r -.41 to r -.34 and r .37 to r .56). ASE themes showed a strong negative correlation between attitude and self-efficacy (r -.70); weak positive correlations between attitude and social influence (r .31) and perceived knowledge (r .30); a weak positive correlation between self-efficacy and social influence (r .30), and a weak negative correlation with intention (r -.31); a moderate negative correlation between social influence and barriers/ supportive factors (r -.50); a weak negative correlation between barriers/supportive factors and perceived knowledge (r -.38).

Conclusion. Prescribing fits the midwife's professional role and maternity services and is enhanced by the midwife's willingness and supportive practice. Prescribing requires collaborative practice, meaningful relationships with women, (applied) knowledge, expertise, and theoretical, practical and logistic support in the clinical area.

Implications. Midwives who consider prescribing or who are autonomous prescribers should be aware of their role and position as autonomous prescriber. They should reflect on their willingness to prescribe, self-efficacy, perceived knowledge, their cognitive beliefs about prescribing and the effect of prescribing on women in their care.

Key words: Behaviour, midwifery, mixed-methods review, non-medical prescribing, evidence-based midwifery

Introduction

The role and responsibilities of midwives have undergone tremendous transformation in recent years. One key development has been the implementation of independent non-medical prescribing by midwifery practitioners across many countries (Facq et al, 2018; Stewart et al, 2012; Hunter and Eddy, 2011; Hawkes, 2009). Non-medical prescribing means that a health professional who is not a doctor (e.g. the midwife), prescribes medication within the field of expertise of that health professional. Given the evidence, there is great potential for non-medical prescribers to impact positively on patient care and safety (Cope et al, 2016; Drennan et al, 2009; Courtenay and Carey, 2007).

Evaluating midwife prescribing in practice, can be carried out from several perspectives: change management, learning processes of midwives and creating awareness to increase the

adaptation capacity of prescribing in midwifery practice and education (Barkimer, 2016; Bayes et al, 2016). This requires an exploration of the potential factors that can play a role in implementation, transition and evaluation processes of midwife prescribing. In nursing, behavioural factors are strongly associated with prescribing (Sulosaari et al, 2012), suggesting that behavioural responses should not be neglected in understanding midwife prescribing. Midwives' behaviour is the fundamental level for transition towards fully implemented and sustained prescribing in midwifery practice. Midwives' behaviour is therefore worth exploring to arrive at a synthesis of what is known and what needs to be known about the determinants of their prescribing behaviour. So far, there are no records that specifically focus on the utility of behavioural aspects of midwife prescribing, although we have a sound belief that aspects such as intention, attitude and self-efficacy

affect the management of midwifery care (Fontein-Kuipers et al, 2016; Merkx et al, 2015; Fontein-Kuipers et al, 2014).

Midwives, those who already have implemented non-medical prescribing as well as those who are scoping prescribing practices, but also midwifery managers and educators, would benefit from evidence on midwife prescribing. In particular, information is needed as to whether this is an activity that is practical, appropriate and feasible in midwifery practice, if it relates to values, thoughts and opinions of childbearing women, and if it contributes to clinical and/or health outcomes, including satisfaction of care.

Aim

This paper aims to facilitate the understanding and synthesis of midwives' autonomous prescribing, focusing on the process as it is currently conceived, purported and practised. To achieve this, we (i) investigated the behavioural determinants of midwives on the utility of their autonomous prescribing; (ii) provided a template for a multi-factorial model; (iii) made reasonable estimates of the known prescribing behavioural aspects of midwives. To obtain a collective conceptual clarity around prescribing behaviour, we sought an answer to the following question: what are the determinants of midwife prescribing behaviour?

Methods

Design

A mixed-methods review was performed using an integrated methodology combining data derived from methodologically different studies into a single mixed-methods synthesis (Sandelowski et al, 2006). The approach taken involved a thematic synthesis and the analysis of relationships between and within studies (Pearson et al, 2005). We used the feasibility-appropriateness-meaningfulness-effectiveness (FAME) scale, to organise information. Feasibility is about whether a certain behaviour is physically, culturally or financially practical or possible within a given context (Pearson et al, 2005). Appropriateness is about how certain behaviour relates to the context in which care is given (Pearson et al, 2005). Meaningfulness relates to the personal experience, opinions, values, thoughts, beliefs and interpretations of women and their families (Pearson et al, 2005). Effectiveness is about the relationship between a certain behaviour and clinical or health outcomes, including satisfaction (Pearson et al, 2005).

To determine the behavioural determinants of prescribing among midwives, we chose the attitude, social-influence, self-efficacy (ASE) model to structure the themes. According to this model, behaviour can be explained by several factors. Firstly, intention or the willingness to perform a certain behaviour. Secondly, attitude as the degree to which an individual has a (un)favourable evaluation of the behaviour in question. Thirdly, social influences or perceived expectations of self, others, social norm and social pressure, and support. Fourthly, perceived self-efficacy, being the ease, confidence or difficulty to perform a task related to the desired behaviour. In addition to these, behavioural factors such as perceived knowledge and barriers can play a role (de Vries et al, 2000; de Vries 1993). The ASE-model is widely used to explain health professionals' behaviour

(Eccles et al, 2012; Bartholomew et al, 2011; Schellart et al, 2011; de Vries et al, 2000), including that of midwives (Fontein-Kuipers et al, 2016; Merkx et al, 2015).

Search strategy and selection

To ensure a high degree of subject specificity and to contribute to a unique perspective of the understanding of midwife prescribing, relevant sources had to include literature of midwifery, healthcare, healthcare education and social sciences. A 10-year limit was placed on publication dates as implementation of midwife prescribing is a fairly new task within the midwifery profession of which the uptake has been rather slow (Facq et al, 2018; McIntosh et al, 2016; Drennan et al, 2009), thus anticipating some delay in research and/or dissemination of study findings. Primary peer-reviewed research studies with samples of midwives, irrespective of country or region, years of working experience or practice setting were included.

We included:

- Records of midwives on post-graduation non-medical prescribing courses
- Studies that reported on the experiences of key stakeholders such as childbearing women, medical staff, pharmacists, non-medical educators and clinical managers related to midwifery
- Records that studied midwife prescribing during preconception care, antenatal, intrapartum and postnatal care, during menopause management and neonatal care.

We excluded:

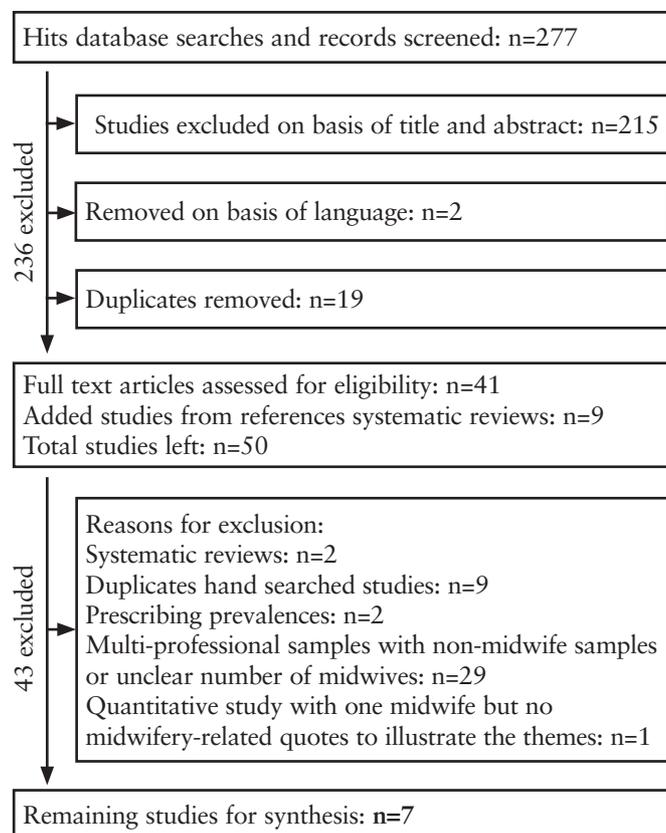
- Studies with a single focus on prescribing prevalences by midwives, including prevalences of (types of) drugs
- Studies related to prescribing for specific illnesses/medical conditions/disabilities, allergies, substance abuse, nicotine replacement, oxygen or studies solely focusing on (foetal) teratogenic risks
- Historical studies, guidelines, study protocols
- Studies focusing on teaching strategies and assessment of pharmacological knowledge and application
- Studies that contained multidisciplinary samples with an unclear number of midwives
- Studies that involved non-medical self-medication, i.e. complementary/alternative medication, homeopathy and over-the-counter available medication.

Three researchers independently searched the electronic databases PubMed, Medline, Discovery Search (EBSCO), CINAHL (Nursing & Allied Health Collection), OVID and Google Scholar. Systematic reviews were excluded for synthesis since the focus was on original data. To retrieve primary studies, reference lists of reviews were scanned and hand searched. The searches were performed between 11 December 2017 and 20 June 2018.

Data abstraction

The initial search identified 277 research entries. Two researchers independently scanned titles and abstracts for a clear relevance to midwife prescribing and removed the duplicates. The selection was narrowed down to 41 articles that were scrutinised in full text. After further assessment,

Figure 1. Flow chart



seven studies remained (Figure 1). Two researchers independently read the full texts to extract ASE-related sentences and phrases and to assess study quality. Similar ASE-variables were grouped together. For example, motivation and intention were considered as one theme called ‘intention’; work setting, regulatory issues and education were combined into one factor called ‘barriers and supportive factors’; social influence, social norm and collegial support, were combined into ‘social influence’. Six themes emerged: attitude, self-efficacy, social influence, intention, barriers and supportive factors, and perceived knowledge – reflecting the behavioural determinants of the ASE model (Bartholomew et al, 2011; de Vries et al, 2000; de Vries, 1993). The Cochrane Centre checklists were used to assess the methodological quality of the studies (Cochrane, 2018). Once the data were extracted from the qualitative and quantitative reports, variables were grouped into ASE themes. The ASE themes were subsequently ordered in the FAME scale. Findings were compared and discussed among all researchers, reaching consensus.

Data analysis

Bayesian estimation was applied for synthesis of data that allowed the methodological diverse evidence to affect the results in the same way, producing predictive optimality of the probability in the estimate of the variables (van de Schoot et al, 2015). Subject-level quantitative information was extracted and translated into the numerical results. This meant that information about finding frequencies were transformed from verbal counts (e.g. few, many, strongly, neither/nor, major, not

at all) into numbers. All data was thematically synthesised and codified for each ASE variable based on whether the variable affected prescribing behaviour, categorised in: ‘clearly present’, ‘tendency’ and ‘not present’. For the quantitative data p-values and applied criteria were used such that if $p < .001$ to $p < .05$, it was coded as 1; $p > .05$ to $p < .10$, as 0.5; and $p > .10$, as 0. We used Kappa values: .61 to .80 was coded as 1; .42 to .60, as 0.5; and $< .20$ to .41, as 0. The method allowed for the same treatment of quantitative and qualitative reports (Crandell et al, 2011; Pearson et al, 2011; Stuijt et al, 2009; Voils et al, 2009). A data matrix was created in Excel, with codified variables of all of the reports, with each column corresponding to one of the selected ASE themes and the rows to a FAME category. Entries were made in the matrix whenever the feasibility, appropriateness, meaningfulness and effectiveness of a prescribing ASE theme was reported as promoting utility of prescribing behaviour (1), having no effect on utility (0.5), or not promoting the utility of prescribing behaviour (0). If a report did not address a certain theme, the cell was left blank. For analysis, the Excel data file was exported into SPSS version 25.0.

Multiple imputation was used for the missing values in order to analyse the complete data set (Ma and Chen, 2018). Posterior point estimates and the credible intervals for the means to estimate the association between the variables and utility/non-utility were examined. An interval containing below 0.25 indicated non-utility of prescribing behaviour, between 0.25 and 0.5 indicated a tendency to prescribing behaviour; credible intervals with values of > 0.5 were associated with utility of prescribing behaviour (Crandell et al, 2011). Bayesian Pearson correlations were calculated to establish the strength of the relationship between: the FAME categories and the ASE themes, and the ASE-themes. Non-informative priors ($c=1$) were used, as there were no prior distributions to regularise the beliefs according to midwife prescribing (Berger, 2001). Midwifery is a distinct profession, with a different scope and role description compared to other healthcare professionals (Sinclair, 2006). Therefore, data from other professions were not used for prior distributions as they were found to be irrelevant (van de Schoot et al, 2015; Voils et al, 2009).

Results

Sample characteristics

The final sample of seven studies were published between 2009 and 2016 and originated from Europe, specifically the Republic of Ireland, UK (Scotland) and Switzerland (Csajka et al, 2014; Boreham et al, 2013; Naughton et al, 2013; Drennan et al, 2011), the US (Hastings-Tolsma et al, 2009), Australia (Small et al, 2016) and China (Han et al, 2017). Four studies used a survey to collect data (Small et al, 2016; Csajka et al, 2014; Drennan et al, 2011; Hastings-Tolsma et al, 2009), of which two studies included open categories (Small et al, 2016; Drennan et al, 2011). One study used a mixed-methods approach with triangulation of data from questionnaires, focus groups and interviews (Boreham et al, 2013). We included one Delphi-study (Han et al, 2017) and one multi-site documentation evaluation (Naughton et al, 2013). Collectively the studies had a total of 646 midwives and 70 stakeholders (women, physicians, pharmacists, educators) in their analyses.

Midwives were either employed or self-employed, practised in hospital and/or community settings, covering the antenatal, intrapartum and postpartum periods. Two studies contained midwives that also worked in family planning services (Boreham et al, 2013; Hastings-Tolsma et al, 2009) and one study included midwives that also provided menopausal and neonatal care (Hastings-Tolsma et al, 2009). Two studies reported on the fact that their sample included midwives who had reached the step of prescribing and midwives who had not (Small et al, 2016; Hastings-Tolsma et al, 2009). One study included midwives who were undertaking the non-medical prescribing course at the time of study (Boreham et al, 2013). Three studies provided information on ages and years of work experience (Small et al, 2016; Boreham et al, 2013; Hastings-Tolsma et al, 2009). The overall quality of the studies showed a moderate (Han et al, 2017; Boreham et al, 2013) to good quality (Small et al, 2016; Csajka et al, 2014; Naughton et al, 2013; Drennan et al, 2011; Hastings-Tolsma et al, 2009).

Thematic findings, FAME categories

The feasibility of midwifery prescribing very much depended on formal regulation and legislation of midwife prescribing, and appointing and authorising midwives as non-medical prescribers (Hastings-Tolsma et al, 2009; Naughton et al, 2013; Csajka et al, 2014; Small et al, 2016; Han et al, 2017). Midwife prescribing was regarded as appropriate when this aligned with the autonomous character of the midwife's role and when distinction was made between prescribing in physiological and in (complex) medical cases and situations – requiring different protocols and different levels of multidisciplinary collaboration (Han et al, 2017; Boreham et al, 2013; Hastings-Tolsma et al, 2009). Prescribing was meaningful when women's care needs were met and when it contributed to the care satisfaction of childbearing women (Drennan et al, 2011; Boreham et al, 2013). By meeting the needs of women and their babies, delivering quality of care, correct and relevant medication choices and thus effective usage, prescribing resulted in increased midwives' job satisfaction (Han et al, 2017; Small et al, 2016; Boreham et al, 2013; Naughton et al, 2013).

Thematic findings, ASE themes

Attitude: midwives' attitudes towards prescribing had mainly a cognitive character – they held strong rational beliefs to be(come) a competent non-medical prescriber (Small et al, 2016; Boreham et al, 2013; Hastings-Tolsma et al, 2009). Prescribing enhanced the midwife's sense of autonomous practice and professionalism and contributed to job satisfaction (Han et al, 2017; Csajka et al, 2014; Boreham et al, 2013; Naughton et al, 2013; Hastings-Tolsma et al, 2009). Midwives were aware of the responsibility and liability associated with prescribing (Csajka et al, 2014). Women and other healthcare professionals also reported a positive attitude towards midwife prescribing (Han et al, 2017; Drennan et al, 2011).

Self-efficacy: midwives felt able and confident to prescribe autonomously (Small et al, 2016; Boreham et al, 2013).

Social influence: support of colleagues (Small et al, 2016) and their national association of midwives, and being recognised

by hospital staff and pharmacists as independent prescribers, encouraged midwife prescribing (Hastings-Tolsma et al, 2009). Midwives reported that prescribing enhanced collaborative practice and positive working relationships (Boreham et al, 2013). Midwives felt the influence of relayed negative media news reports that related to midwife prescribing (Csajka et al, 2014). They reported that physicians' or pharmacists' negative attitudes, or procedures such as peer review/audits, did not affect their prescribing behaviour (Small et al, 2016; Hastings-Tolsma et al, 2009).

Intention: midwives reported high intentional levels of prescribing (Small et al, 2016). Their intention to uptake prescribing (courses) was reinforced by feeling supported on the work floor (Boreham et al, 2013; Hastings-Tolsma et al, 2009). When women reported satisfaction with midwife prescribing and complied with taking the prescribed medication, this enhanced and sustained the midwife's motivation to prescribe or the intention to uptake prescribing (Drennan et al, 2011).

Barriers and supportive factors: the most important supportive factor to prescribe was the legislative change, i.e. the regulation in itself (Small et al, 2016). Inherent reported barriers were the regulatory process to become an authorised non-medical prescriber (Small et al, 2016). Having systematic pharmacological knowledge and hands-on experience, i.e. the opportunity to translate acquired knowledge into practice, supported prescribing (Small et al, 2016; Boreham et al, 2013; Hastings-Tolsma et al, 2009). Support, or a lack of support, in the clinical area (e.g. mentorship, supervision) and (a lack of) logistic and practical support (e.g. time, guidelines, malpractice insurance), were perceived as barriers as well as supportive factors (Boreham et al, 2013; Hastings-Tolsma et al, 2009).

Perceived knowledge: midwives reported how they applied their knowledge into practice, making appropriate and correct choices for medication, correct dosage, frequency and timing (Small et al, 2016; Naughton et al, 2013; Drennan et al, 2011). Midwives accessed prescribing reference material (i.e. literature, practice guidelines) to validate their advice given to women (Han et al, 2017; Csajka et al, 2014; Drennan et al, 2011; Hastings-Tolsma et al, 2009).

Numerical findings, FAME-categories and ASE-themes

With regard to the FAME-categories, most of the studies reported on the feasibility, appropriateness and effectiveness of midwife prescribing, and to a lesser extent on meaningfulness. As shown in Table 1, a large proportion of cells contain no data. Missing values were imputed using the Markov Chain Monte Carlo (MCMC) method, as the missing values showed a non-monotonic pattern. The criteria for the Bayesian analysis were set at a number of 10.000 Monte Carlo samples, a maximum of 2000 iterations and a tolerance of 0.0001.

Based on the credible intervals of the FAME categories, feasibility (.27) and appropriateness (.28) showed a tendency towards affecting the utility of midwife prescribing, while meaningfulness (.17) and effectiveness (.18) were related to non-utility of prescribing (Table 2). With regard to the ASE themes, most studies reported on attitude and least on self-efficacy. The credible intervals of the ASE themes showed that attitude (.32) and social influence (.33) showed a tendency

Table 1. Data matrix relating the FAME categories and ASE themes

Fame Categories	Study	ASE themes					
		Attitude	Self-efficacy	Social influence	Intention	Barriers and supporting factors	Perceived knowledge
Feasibility	Han et al (2017)	1		1		1	
		0.5					
	Small et al (2016)	0.5		1		0.5	
				0		0.5	
				0		0.5	
						1	
	Csajka et al (2014)	1		1			
	Boreham et al (2013)				0.5		
Naughton et al (2013)	1						
Hastings-Tolsma et al (2009)	0.5				0.5		
Appropriateness	Han et al (2017)					1	
	Small et al (2016)		0.5		1		1
				0			
	Csajka et al (2014)	1					1
	Boreham et al (2013)	1	1	1	1		
	Hastings-Tolsma et al (2009)	0		0.5	1	1	
				0	1		
			1	1			
			1				
Meaningfulness	Boreham et al (2013)	0.5					
		0.5					
	Drennan et al (2011)	1					1
Effectiveness	Han et al (2017)	0.5					
		0.5					
		0.5					
	Small et al (2016)	1					
		1					
		1					
	Boreham et al (2013)		1	1			1
							1
Naughton et al (2013)						1	
						0.5	
Drennan et al (2011)	1			1			
Hastings-Tolsma et al (2009)	1						

towards affecting the utility of midwife prescribing, while self-efficacy (.19), intention (.18), barriers and supporting factors (.16), and perceived knowledge (.18) were related to non-utility of prescribing (see Table 2, overleaf).

There was a moderate positive correlation between feasibility and barriers/supporting factors ($r = .56$), a weak positive correlation between appropriateness and social influence ($r = .37$), a moderate positive correlation between appropriateness and intention ($r = .42$) and a moderate negative correlation between appropriateness and perceived knowledge ($r = -.44$). There was a weak positive correlation between meaningfulness and intention ($r = .37$), a moderate positive correlation between meaningfulness and social influence ($r = .46$) and a moderate negative correlation between meaningfulness and perceived knowledge ($r = -.41$). There were moderate positive correlations between effectiveness and social influence ($r = .50$) and intention

($r = .50$) and a weak negative correlation between effectiveness and barriers/supportive factors ($r = -.34$). There was a strong negative correlation between attitude and self-efficacy ($r = -.70$) and weak positive correlations between attitude and social influence ($r = .31$) and perceived knowledge ($r = .30$). Self-efficacy showed a weak positive correlation with social influence ($r = .30$) and a weak negative correlation with intention ($r = -.31$). There was a moderate negative correlation between social influence and barriers / supportive factors ($r = -.50$) and a weak negative correlation between barriers /supportive factors and perceived knowledge ($r = -.38$) (see Figure 2, overleaf).

Discussion

Based on the synthesis and the modelling of the ASE themes and FAME categories, this study showed that midwife prescribing depends on various factors. The interplay between the various

Table 2 Reports of FAME categories and ASE themes

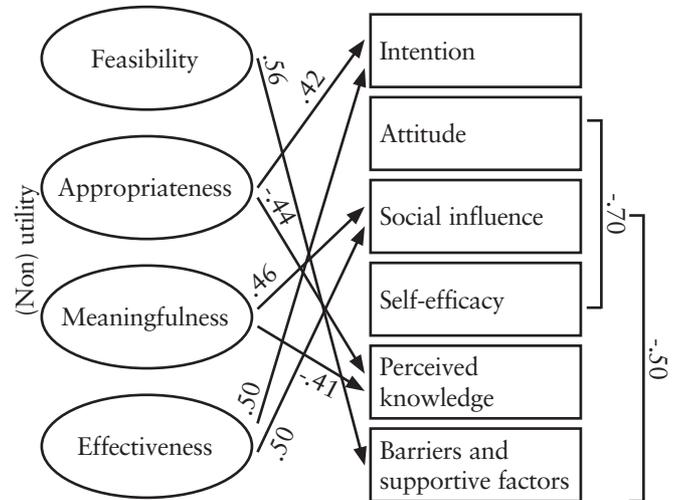
	Number of entries	Posterior mean (95% credible interval)
FAME categories		
Feasibility	19	.70 (.56 to .83)
Appropriateness	20	.73 (.59 to .87)
Meaningfulness	4	.65 (.57 to .74)
Effectiveness	15	.71 (.62 to .80)
ASE themes		
Attitude	20	.44 (.28 to .60)
Self-efficacy	4	.74 (.65 to .84)
Social influence	11	.67 (.50 to .83)
Intention	7	.71 (.62 to .80)
Barriers and supporting factors	9	.62 (.54 to .70)
Perceived knowledge	7	.80 (.71 to .89)

aspects were disentangled. To the best of our knowledge, this has not been done before in such a methodological way.

Midwife prescribing seems to be feasible and appropriate in a supportive culture of midwifery practice at micro level (e.g. workplace), meso level (e.g. hospital policies) and macro level (e.g. professional organisation of midwives). The sample in this study consisted of midwives who practised in various settings and in different forms of employment. The specific workplace environment and prevailing culture of the maternity setting are known to influence prescribing attitude and subsequent prescribing behaviour (Hall et al, 2013). This might be related to midwives' perceived importance of the social norm and expectations as conveyed by their colleagues (Fontein-Kuipers et al, 2018). With regard to meso and macro level, midwives are part of a wider and integral healthcare and professional maternity care network (Perdok et al, 2016) and need to be recognised as key players in non-medical prescribing. According to the findings of this study, a positive work environment and culture seem profound prerequisites of midwife prescribing. A safe, supportive and multidisciplinary culture in which they operate could strengthen midwives' intention to prescribe. Although the midwives in this study had positive attitudes towards prescribing, it cannot be assumed that their positive views will translate into advocacy of prescribing in practice. This might be over-simplistic and failing to appreciate the impact of contextual conditions.

Meaningfulness and effectiveness were not fully addressed in this study, hence none of the FAME categories showed high utility. This seems logical as prescribing is a rather novel extension of the midwife's role and responsibilities, not yet being performed by a large number of midwives (Facq et al, 2018; McIntosh et al, 2016; Drennan et al, 2009). This acknowledges the need for further research but also the need to inform and educate midwives and other stakeholders about the feasibility and appropriateness of midwife prescribing

Figure 2. Moderate and strong Bayesian correlations (r) of FAME categories and ASE themes



to make it meaningful and effective. Therefore, the relation between meaningfulness and effectiveness, and the utility of midwife prescribing, needs to be explored more closely but also needs to be endorsed in practice.

Self-efficacy seems to be a crucial behavioural factor but is hardly addressed in this study. Self-efficacy is appointed as an influential factor to attitude (Silva, 2006), which could consequently lead to prescribing. Our findings show a strong negative correlation between attitude and self-efficacy, which can be the result of the heterogeneity of our sample, including prescribing midwives, non-prescribers, those who were in the process of becoming prescribers, and non-midwife stakeholders. The varying levels of professional competency could have affected the attitude towards prescribing, resulting in differences in self-efficacy beliefs. This implies that for midwives to uptake prescribing or to start a prescribing course, they need to be confident about their abilities and professional role, albeit that confidence of midwives grows and develops over time, and competence grows with experience (Bäck et al, 2017). Practices that enhance the attitude and self-efficacy of midwives in prescribing are likely to positively change the relationship between attitude and self-efficacy. The fact that there was no evidence of relations between attitude, self-efficacy and the FAME categories, as well as weak correlations with other ASE themes, gives rise to the thought that there might be other or unknown variables that affect the relationship between the utility of midwife prescribing and their attitude and self-efficacy. The positive attitudes of the midwives in the study towards prescribing did not translate into self-efficacy of prescribing in practice but this could have been caused by the discrepancy between the number of attitude and self-efficacy entries, as shown in Table 2. Defining the source of midwives' low self-efficacy will contribute to the utility of prescribing. Further research is warranted.

The negative correlation between social influences and the barriers and supportive factors are also likely to be a result of the heterogeneity of our sample that represents

different levels of adoption of prescribing. Adoption is more likely to happen when different members of the maternity community (managers, educators and midwives) share purposes, ownership and values, and when all members of the community see midwives as actors who can bring about change in the midwife's role in prescribing.

Limitations

Although there was a limited quantity of data, the studies showed overall good quality. There were no studies available that focused specifically on independent midwife prescribing behaviour and its determinants, explaining the fact that probabilities were represented here, this being consistent with Bayesian estimation (Crandell et al, 2011; Voils et al, 2009). We aim to estimate how likely the evidence from our included studies would be. We did not include prior knowledge, which can be regarded as a flaw of our study. Our findings are therefore informed primarily by the observed data used to construct the likelihood (van de Schoot et al, 2015). Imputation of the missing data could have introduced bias. However, the use of MCMC algorithm and the prior distribution contributed to lessen the loss of precision – that is, measurement error allowing unbiased and valid inferences (Sterne et al, 2009). We need more research on midwife prescribing to perform an analysis with use of informative priors to improve the robustness of the estimates (Ma and Chen, 2018).

We did not look at the variations between countries regarding possible differences in education: training, the midwife's scope of practice or lists of medicines that midwives are allowed to prescribe. International variations might have affected the findings of this study. Not all of the studies provided midwives' characteristics such as age, years of work experience and educational background. These aspects might have influenced the findings. It can be recommended to consider these aspects for future research.

The ASE model is one of the models commonly used in predicting and explaining behaviour in healthcare contexts (Eccles et al, 2012), albeit that prescribing behaviour-focused ASE evidence does not exist. Due to number of blank cells in Table 1, we cannot be sure of the fit and the strength of the ASE model in explaining midwife prescribing. This can

easily be clarified by the limited amount of data that could be included for synthesis. Despite the limitations, we regard this study as a first attempt to explain novice prescribing behaviour to be used for future expansion when more data on the topic becomes available. The ASE model is regarded to be well suited for this purpose as it applies direct measurement of attitudes, social influence and self-efficacy (Eccles et al, 2012). Building on the same theoretical model can therefore be recommended.

Conclusion

Non-medical prescribing fits the midwife's professional role and maternity services, enhancing the midwife's autonomy, job satisfaction, confidence and collaborative practice. The findings of the study indicated that midwives' prescribing behaviour is merely mediated by the context and culture of their profession. Prescribing requires (applied) knowledge, meaningful relationships with women, hands-on experience and theoretical, practical and logistic support in the clinical area. Considering the determinants of midwife prescribing that have been identified to influence the utility of midwives' prescribing might benefit implementation, transition and evaluation processes in midwifery practice and education. The use of an operational model including the FAME categories and ASE themes, as well as the findings of this study, offer opportunities for future research.

Implications

For midwives who consider prescribing, who are on prescribing courses or who are already autonomous prescribers, it is important to understand the complexity of prescribing behaviour and how this correlates with (non) utility of prescribing.

Midwives, prescribing and non-prescribing, should be aware of their role and position as autonomous prescriber and the effect that prescribing has on women and their children. As midwives are reflective practitioners, the findings of this study offer the opportunity to question one's own willingness to prescribe, capabilities, self-efficacy, cognitive beliefs and the perceived level and content knowledge of prescribing. This study also offers topics for discussion for midwifery education and lifelong learning.

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Information for authors

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

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News and resources

RCN bursary scheme open for applications

The RCN Foundation Professional Bursary Scheme is taking applications now for grants of up to £5,000 per year for career development and CPD activities in the following areas: primary care nursing (up to £5,000); long term/chronic conditions (up to £5,000); history of nursing (previously the Monica Baly Bursary Scheme) (up to £1,000); occupational health nursing in Scotland (previously the Mair Scholarship Scheme) and the rest of the UK (up to £1,000). Applicants must be able to detail how their course will improve patient care in their field. The grants are open to UK registered nurses and midwives, healthcare support workers working in the UK and nursing associates. You can find full details, an application form and application guidance at www.rcnfoundation.org.uk/how_we_can_help/education_grants/rcn_foundation_professional_bursary_scheme

New round of Churchill Fellowships open in May

A Churchill Fellowship is a once-in-a-lifetime opportunity to expand your professional and personal horizons by researching an issue that you care about, with the global leaders in that subject, anywhere in the world. The Winston Churchill Memorial Trust will fund you to spend up to two months overseas, meeting experts, visiting projects and learning new ideas. When you return, it will help you use what you've learnt to make change happen in your sector or community. The next application round will run from 16 May to 17 September 2019. For more, see www.wcmt.org.uk/apply/why-apply

Mary Seacole Awards closing date

The closing date to enter the Mary Seacole Awards is 24 May. The awards recognise the outstanding achievements of midwives, nurses and health visitors in England within the black, Asian and minority ethnic community. The awards are funded by Health Education England, in association with the RCM, RCN, Unison and Unite. Mary Seacole was a Jamaican-Scottish nurse and businesswoman, celebrated for her bravery in nursing soldiers in the Crimean War. To apply, visit www.nhsemployers.org/maryseacole

Evidence Based Midwifery editorial panel members

UK editorial panel

Professor Soo Downe, University of Central Lancashire, England

Professor Billie Hunter, Cardiff School of Nursing and Midwifery Studies, Wales

Dr Julia Magill-Cuerden, University of West London, England

Dr Margaret McGuire, NHS Tayside, Scotland

Dr Marianne Mead, University of Hertfordshire, England

Professor Jane Sandall, King's College London, England

Chair: Louise Silverton, Midwife consultant

Professor Marlene Sinclair (editor), Ulster University, Northern Ireland

Dr Hora Soltani, Sheffield Hallam University, England

Dr Andrew Symon, University of Dundee, Scotland

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Dr Heather Hancock, University of South Australia, Australia

Professor Edith Hillan, University of Toronto, Canada

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Helen Spiby, University of Nottingham, England

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Professor Adrian Esterman, University of South Australia

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