Factors contributing towards women booking late for antenatal care in the UK

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EVIDENCE BASED MIDWIFERY

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Evidence Based Midwifery

Reflections on COVID-19: parallel reality, occularcentrism and blurred boundaries

Keywords: COVID-19, e-research, parallel reality, occularcentrism, Evidence Based Midwifery

The lifeworld of many academic researchers during COVID-19 was put on hold as the laboratory was out of bounds, clinical midwifery data collection was totally blocked and touching another person, unless absolutely essential, was unthinkable!

Prior to COVID-19, many challenges faced the researcher who was keen to use e-technology as it was not the norm or easily accepted as a suitable method of data collection. Researchers who wished to use any online platform to involve international participants and users in setting maternity care research priorities, co-produce research on homebirth across cultures or test the efficacy of the delivery of mental health interventions, faced many challenges and required commitment and dedication to achieve the desired research outcome.

The alteration of the mode of delivery of research interactions from face-to-face (F2F) to online was met with reluctance and hesitancy. From personal experience, many challenges faced researchers choosing to use e-platforms for data collection, including difficulty in recruitment, powering the sample, designing appropriate tools for data collection and limiting accessibility to those who were appropriate to complete the online data collection (for example, age, gender, culture and relevant exposure to the phenomenon of interest).

Online research has challenges that are ethical, legal and moral requiring the researcher to exercise vigilance and adherence to professional and academic standards. Ethical approval was often fraught with requirements to resubmit paperwork with attention to minutiae, such as detail on the protection of the unique identifier or the IP address of the person who interacted with the researcher. Caution with regard to the appropriateness of the language used, interpretation of the meaning and conceptual equivalence across cultures was, and remains, a necessity. The online research world was veiled and viewed with suspicion by many.

COVID-19 arrives and instantly, online data collection is popular, necessary and essential. Research studies are fast-tracked through ethics and research governance and sampling issues are resolved more rapidly. Publishers are fast-tracking COVID-19 research papers and monies for research related to COVID-19 have been produced and ring-fenced. It all happened so fast no-one could have been prepared for it. From a research perspective everything and everybody became data for observation, collection and interpretation. The real 'outside' world became a virtual one and we started to live our lives through machines.

If you stop to remember life 18 months ago, human touch was an everyday occurrence. Researchers met their participants F2F for interviews and focus groups and warmly shook hands. Students and supervisors sat together round tables reading transcripts and checking data entries. The essence of being present in the flesh and in the spirit was a desirable and normal everyday phenomenon. Today, we have adapted to life online and research work is now a form of virtual reality where we have altered our expectations to fit the new *modus operandi*.

The general public has altered their expectations for technology to replace F2F events, with virtual reality providing access to everything, such as driving tests and eyesight tests. We even want to know why we cannot pass our driving test using virtual reality! These changes in our perceptions of technology are crucial to our acceptance of the visual power of technologies to provide us with a parallel life lived through machines. COVID-19 has been a catalyst for a parallel lifeworld and what happens next is unknown. Who knows if the online world will become accepted as a norm over the F2F world? Normal is that which occurs most often and, right now, normal is online.

Many midwifery academic researchers, clinical researchers and midwife teachers are working from home and some will wish to stay at home while others will desire the work environment. Many feel when they are working from home they need to be visible and available from 9–5 because there is a need to be seen to be present and at work. If you cannot be seen, suspicions about your whereabouts are raised. High visibility, being seen to interact F2F, yet online, is becoming an issue. Occularcentrism is dominant where seeing the employee online becomes a necessity for some employers and it is understandable that many employees express anxiety because they feel Big Brother is watching them from the Teams, Skype or Zoom platform. Switching off the machine is becoming more difficult and the boundaries between home and work are blurred. Balancing work, family and home life has undoubtedly become harder during COVID-19 and, for those trying to do online research from home, the challenges have escalated with limited computers, patchy broadband and sharing precious space with partners, siblings and others.

However, it is not all negative. I would strongly argue that one positive outcome from the devastation caused by COVID-19 for the research community is the global acceptance of online research and the potential to reach larger and more diverse samples. Occularcentrism is an applicable frame of reference for understanding how people favour visual contact and how valuable software has become in every home, regardless of socio-economic status, culture and ethnicity (Sinclair et al 2019).

Adaptation to the new home world of e-life that we have been forced to live in has challenged us to become more computer literate, and more accepting of the use of technology, as a normal part of everyday home life. During the pandemic, we moved our work to our homes, adapted our workspaces, accepted schooling online, and sent pictures via WhatsApp or email of our rashes and wounds to our GPs. The occularcentric behaviour of people needing to see each other or see the medical problem or see the learner has resulted in global use of free software to let us ‘see’. Seeing from the safety of our homes has become an everyday activity. The need to *see* has resulted in Zoom or Skype becoming household necessities, like washing machines and fridges.

Research is changing and occularcentrism is dominant in our culture. Seeing the impact of our research on the recipients, enabling participants to see us, and seeing behaviour change as we watch from our office at home, is becoming a parallel reality. COVID-19 has significantly and visibly altered our online behaviour and our home and work reality boundaries are blurred by the virtual reality provided by life lived through and within the machine.

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Evidence Based Midwifery

Pregnancy-related lumbopelvic pain: exploring the use of digital media for condition-related information provision

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ABSTRACT

Background: Online health information-seeking is thought to be common among pregnant women, and the use of digital media has been widely adopted.

Women with pregnancy-related lumbopelvic pain (PLPP) are often disappointed with the volume and content of condition-related information offered by their health care providers and alternative modes of information provision therefore need to be explored. The widespread adoption of digital media suggests that such platforms may provide a convenient alternative for information delivery.

Aims: To explore the PLPP-related information-seeking practices of women experiencing this condition and the attitudes of National Health Service (NHS) service users and healthcare professionals towards the use of digital media for PLPP-related information provision.

Ethical approval: Ethical and HRA approvals were gained for this study (REC reference 15/NI/0270).

Methods: Multi-method qualitative study: individual semi-structured interviews with seven NHS service users and two single-profession focus groups, one with six NHS-based midwives and one with four NHS-based physiotherapists. A framework method of thematic analysis was used. No member checking was undertaken.

Results: All service users were aged 21–36 years, with gestational age <32 weeks.

All midwives were >10 years post-qualification and had experience of an antenatal clinic setting.

Two physiotherapists were five–10 years post qualification, two were >10 years post-qualification. All had relevant experience of treating women with PPLP.

Searching online for condition-related information was reported by all service users and complex drivers for this behaviour were described. All stakeholder groups shared concerns about the quality and trustworthiness of PLPP-related information available online. The use of apps for condition-related information provision was viewed positively by all groups, but the majority of service users stated a lack of trust in health information obtained via social media.

Conclusion: The development of an app-based intervention to facilitate the management of PLPP is supported by this study and is therefore worthy of further exploration.

Keywords: pregnancy, low back pain, pelvic girdle pain, lumbopelvic pain, qualitative, digital media, mobile phone applications, apps, social media, online information-seeking, Evidence Based Midwifery

Background

Pregnant women are acknowledged as mass consumers of online health-related information (Gleeson et al 2019, Mackintosh et al 2020) and are thought to use the internet for multiple purposes, including searching for information relating to pregnancy symptoms (Kraschnewski et al 2014) and to aid decision making relating to pregnancy, childbirth and future parenting (Prescott & Mackie 2017, Wright et al 2019).

Around 95 per cent of digitally active women are thought to search the internet for health-related information during the perinatal period (Mackintosh et al 2020) and evidence suggests that parity (Camacho-Morell & Esparcia 2020), educational attainment (Sayakhot & Carolan-Olah 2016), and level of health literacy (Shieh et al 2009) may all influence such behaviours.

The volume of literature relating to the use of pregnancy-related websites, social media platforms (SoMe) and smartphone apps (herein collectively referred to as digital media) is growing rapidly in keeping with the widespread uptake of these media among the pregnant population (Sayakhot & Carolan-Olah 2016).

Pregnant women are known to use digital media in a healthcare context for multiple purposes including self-screening (Peyton et al 2014) and preparing for health care appointments (Maslen & Lupton 2018). Both health care providers (HCPs) and commercial companies have therefore capitalised on this knowledge, developing multiple interventions for pregnancy-related conditions (such as gestational diabetes) using various forms of digital media as platforms for delivery (Chan & Chen 2019).

One of the most common causes of work absence among pregnant women in European countries is pregnancy-related lumbopelvic pain (PLPP) (Backhausen et al 2018). PLPP is an overarching term that encompasses both pregnancy-related lower back pain (PLBP) and pregnancy-related pelvic girdle pain (PPGP) (Vleeming et al 2008). Up to 80 per cent of pregnant women are thought to experience PPLP at some point during their pregnancy (Kovacs et al 2012) and around 25 per cent of these women will experience severe pain (Wu et al 2004).

It is common practice in the United Kingdom (UK) for those experiencing PLPP to be referred for treatment by a physiotherapist (Bishop et al 2016). Waiting lists for physiotherapy services often vary due to local availability, meaning that women may be required to self-manage their symptoms while awaiting input from a physiotherapist. Online PLPP-related information resources may therefore play an important role during this period.

Currently, there is no gold standard treatment for PLPP, with exercise, manual therapy, pelvic support belts, and advice all listed as viable treatment options in recent published guidance (Clinton et al 2017). Explicit recommendations have however been made in the literature that condition-related information provision should form part of routine practice (Elden et al 2014, Close et al 2016). Despite this, patients are often disappointed by the volume and quality of information provided by their HCPs (Close et al 2016, Mackenzie et al 2018) and therefore seek advice from non-medical sources such as peers, family members or the internet (Wuytack et al 2015b).

As the quality and trustworthiness of online health-related information has been shown to be variable (Daraz et al 2019), a clear potential for confusion and misinformation exists (Hämeen-Anttila et al 2014, Carpenter et al 2016). The availability of high-quality information relating to PLPP would therefore be of benefit, and digital media could provide a convenient platform for delivery.

To understand the potential utility of digital media in the management of PLPP, it is essential to explore how women experiencing the condition choose to seek health-related information, and to explore their preferred modes of condition-related information provision. The successful implementation of a digital media-based intervention to support the management of PLPP would also require full endorsement by the HCPs caring for these patients. It is therefore important to investigate the perspective of such clinicians; to understand their perceptions of the information-seeking practices of their patients, and their attitudes towards the use of digital media for condition-related information provision.

The objectives of the current study were therefore as follows:

- To explore the PLPP-related information-seeking practices of women currently experiencing this condition
- To explore the attitudes of both NHS service users and NHS-based antenatal HCPs regarding the use of digital media for the provision of PLPP-related information
- To explore the acceptability and perceived utility of the notion of a digital media-based intervention to support the self-management of PLPP.

Methods

This study was a multi-method qualitative study that utilised individual semi-structured interviews with NHS antenatal service users experiencing PLPP, in addition to two focus groups; one with NHS-based midwives and another with NHS-based physiotherapists.

Otherwise healthy pregnant women currently experiencing PLPP, aged 18 years or over, with a gestational age of 12–32 weeks, were invited by their treating clinician to participate in the study when they attended a routine antenatal visit at the host NHS trust. Those with known pregnancy-related complications, multiple pregnancies, and those without an adequate understanding of written and spoken English were ineligible.

NHS-based midwives and physiotherapists involved in the management of women experiencing PLPP were recruited via email invitation disseminated via their line managers. All potential participants received a written information leaflet about the study to aid their decision regarding participation.

Written informed consent was recorded by the researcher from each individual participant prior to data collection.

Semi-structured interviews

For the NHS service users, a semi-structured interview schedule was devised in order to ensure the specific research questions for this study were addressed sufficiently, and also to allow additional insights offered by the participants to be explored (Green & Thorogood 2009). The interview schedule aimed to address the following key areas of interest:

- If/how participants currently use digital media in relation to their pregnancy
- How participants perceive the use of the internet to access health information and how this differs from information obtained directly from an HCP
- How participants consider online health information should be presented in order to be most useful
- Participants' perceptions and beliefs about using a digital media-based intervention for the management of PLPP.

All interviews were undertaken by the lead author (MM) who is a qualified physiotherapist with a special interest in PLPP and who has experience of qualitative research. Interviews were undertaken either in person, in a quiet, private room at the host NHS trust's antenatal clinic, or via telephone. All interviews lasted between 20 and 60 minutes.

Focus groups

Small focus groups of four to six participants were utilised with the NHS-based HCPs. These focus groups provided an opportunity to access insights that may not be available from individuals and allowed group members to shape and reflect on their own perspectives after hearing those of others (Barbour & Kitzinger 1999).

Both focus groups were single profession: this decision was made to capitalise on the shared culture existent within each professional group and to ensure that differing professional perspectives could not become a cause of conflict (Barbour & Kitzinger 1999).

Each focus group was moderated by the lead author and lasted around 90 minutes. The midwifery and physiotherapy focus groups were held in quiet, private rooms within the respective clinical departments of the host NHS trusts.

The focus group guide was developed to address the following key issues and was the same for both groups of clinicians:

- If/how clinicians currently use digital media in their professional lives
- Participants' views on the use of digital media for the provision of PLPP-related information
- How participants considered digital media-based interventions for PLPP might be integrated within their current clinical practice
- The potential barriers and facilitators perceived to the implementation of a digital media-based PLPP-related intervention in an NHS setting.

Due to the exploratory nature of this study, the notion of data saturation was not considered the sole determinant of the sample size (Braun & Clarke 2021). The sample size was largely influenced by the richness of the data generated across all interviews and focus groups, and pragmatic considerations, including the availability of participants and the resources available to complete the study.

All interviews and focus groups were audio-recorded and reflexive notes were taken throughout the data collection process to help inform the analysis. The audio-recordings were transcribed in an intelligent verbatim format. Data were analysed inductively, and as the study aims were clear at the outset, the framework method of analysis was chosen (Gale et al 2013). Framework analysis involves five key steps: 1) familiarisation; 2) constructing a thematic framework; 3) indexing; 4) charting; 5) abstraction and interpretation (Ritchie et al 2014).

Insights provided by the service user group were given priority, as understanding their needs and preferences was deemed essential in fulfilling the aims of this study. Data collected from this group were therefore coded first and an initial thematic framework was constructed. The transcripts from both clinician focus groups were then coded, and individual thematic frameworks were drawn up for each. These three frameworks were then synthesised into one thematic framework that could be used to organise the entire dataset.

The resulting consolidated thematic framework was reviewed and agreed by the entire research team following in-depth reflexive discussions, then re-applied across the entire dataset. A thematic chart was then constructed using Microsoft Excel to allow participants' responses to be compared. Key dimensions in those responses were then presented as themes and subthemes. Both the thematic charts and lists of key dimensions were reviewed and agreed by all members of the research team.

Ethical approval had not been sought to contact participants again after data collection was completed, therefore no member checking was undertaken.

Results

Seven service users, six midwives and four physiotherapists consented to take part in the study. An overview of participant characteristics can be found in Table 1.

Table 1. Participant characteristics.

Characteristics of service users n=7	
Age range	21–36
Number of service users who were primiparous	3
Number of service users who were multiparous	4
Number of service users who hold a university degree	4
Number of service users who had experienced PLPP in a previous pregnancy	3
Characteristics of midwives n=6	
Number of midwives working in antenatal setting	6
Number of midwives with 5–10 years clinical experience	0
Number of midwives with >10 years clinical experience	6
Characteristics of physiotherapists n=4	
Number of physiotherapists working in a musculoskeletal setting	2
Number of physiotherapists working in a women's health setting	2
Number of physiotherapists with 5–10 years clinical experience	2
Number of physiotherapists with >10 years clinical experience	2

Two overarching themes were identified across the dataset:

- **Theme 1:** Information seeking and information provision in the context of PLPP
- **Theme 2:** Attitudes towards digital media as platforms for information provision.

Within each of these themes, four subthemes emerged, see Figures 1 and 2.

Theme 1: Information seeking and information provision in the context of PLPP

Subtheme 1.1 Online health information-seeking behaviours

HCPs perceived the reasons patients choose to seek information online as rather simplistic; either to clarify information gathered during a clinical consultation or as a substitute for face-to-face information provision when access to an HCP was not possible.

'I think it's difficult with the NHS, the way it is … resources are so stretched and so that healthcare professionals aren't that easily accessible, so people are much more media savvy, tech savvy' (Midwife 6).

However, the actual reasons for seeking information online, as described by the service users, were far more complex.

The search for reassurance featured prominently in the narratives of five of the seven service users; either to establish whether the pain being experienced was normal, or to decide whether medical intervention was required. Additionally, online information-seeking was described by one service user as a way to modify the power dynamic between herself and her HCP: by acquiring information prior to her health care appointments, she felt able to interact with the HCP on a more equal basis and better able to critically assess any information provided to her:

'I like to have that knowledge before I go in to talk to someone. I don't like going in blind. I like to go

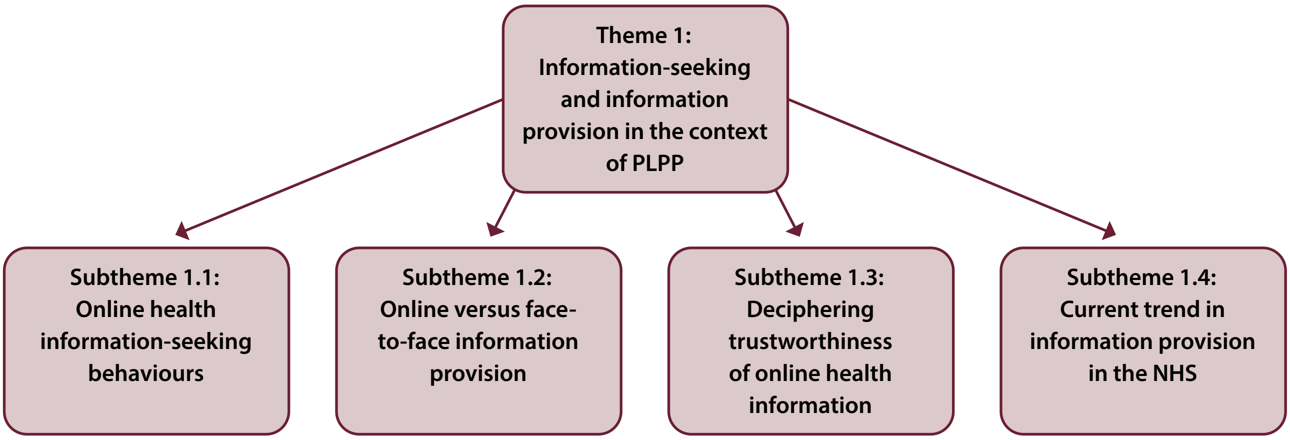

Figure 1. Relationship of Theme 1 to subthemes.

in armed with a little bit of something otherwise you can't ask questions and you're totally reliant on what they say' (Service user 1).

All seven service users specifically identified Google as their primary search tool for online PLPP-related information.

Subtheme 1.2 Online versus face-to-face information provision

The risk of misinterpretation of online information was a concern shared by all stakeholder groups, as was the perceived potential for online information to cause unnecessary panic or distress:

'… because you do google it and you hear horror stories about like 'my pelvis was shifted' or 'I had to go on crutches' or 'I was in a wheelchair' so then you think oh God!' (Service user 3).

Three of the seven service users described an overwhelming volume of online material and the difficulty faced when attempting to filter out the factually accurate information desired:

'I googled everything which is a massive mistake isn't it because the information you get is just ridiculous, there's so much and you don't know what to believe' (Service user 3).

This concern was echoed within the physiotherapy focus group.

Information provided by an HCP was believed by three service users to be more factually accurate and more reassuring than that found online. Conversely, two service users felt that the inability of some HCPs to answer questions about PLPP may create a barrier to information exchange between the patient and the professional:

'It's quite a quick appointment that you're in for when you're with your midwife. You have your blood pressure checked, you know, the water sample check and then you're kind of out then. So like you don't feel you've got a long enough appointment you know [to ask questions]' (Service user 2).

Both the midwives and physiotherapists detailed the perceived negative consequences of their patients independently seeking information online. The risk of a missed differential diagnosis was of significant concern; particularly that symptoms indicative of serious pathology may inadvertently be overlooked.

Subtheme 1.3 Deciphering the trustworthiness of online health information

The ability to decipher the trustworthiness of online health information was a concern highlighted across all stakeholder groups. HCPs described a perception that their patients may struggle to differentiate high-quality, trustworthy information from misinformation or hearsay. Directing patients to trusted online resources was therefore seen as essential:

'I think if you google stuff, then it causes more panic that it actually resolves … So, what you do is you just make sure that, especially for pregnant women, that it's only the NHS website [that they use to search information], *and make sure it's trusted information basically'* (Midwife 6).

Two service users echoed this concern and described the difficulty they experienced in deciphering the trustworthiness of health information obtained online:

'I'm always searching something [online]. *I think it's great in terms of the volume of information, but in regard to what is trusted information, that could be more helpful'* (Service user 6).

In all but one case, service users described seeking information from a pre-defined list of trusted resources, including the NHS website, as a way of ensuring access to trustworthy information. The implicit trust in the NHS website was predominantly owing to the belief that information would be vetted prior to publication:

'Well if it's on the NHS one [NHS website] *then that should be right shouldn't it? I don't think they'd be allowed to put anything on there that's not true'* (Service user 3).

The accuracy of information obtained online was also an issue raised by HCPs, with the midwives predominantly concerned at the lack of professional control over online content:

'I think it's important that the information is out there but being able to police it being the right information is key. Because we know we haven't got any control over that have we, as healthcare professionals … the problem is if they're just googling' (Midwife 1).

The physiotherapists were concerned that independent online information-seeking may lead their patients to engage with unregulated online forums rather than trusted online information resources.

Subtheme 1.4 Current trends in information provision in the NHS

Service users described a range of experiences relating to the volume, quality, and format of PLPP-related information provided to them by their antenatal health care providers, with paper-based leaflets the most frequently cited mode of information provision. However, for some, the failure of HCPs to provide sufficient condition-related information had led to frustration and disappointment:

'And like with my midwife, I wasn't offered any information on pelvic girdle pain or sciatica and I was made to feel like, just get on with it really' (Service user 2).

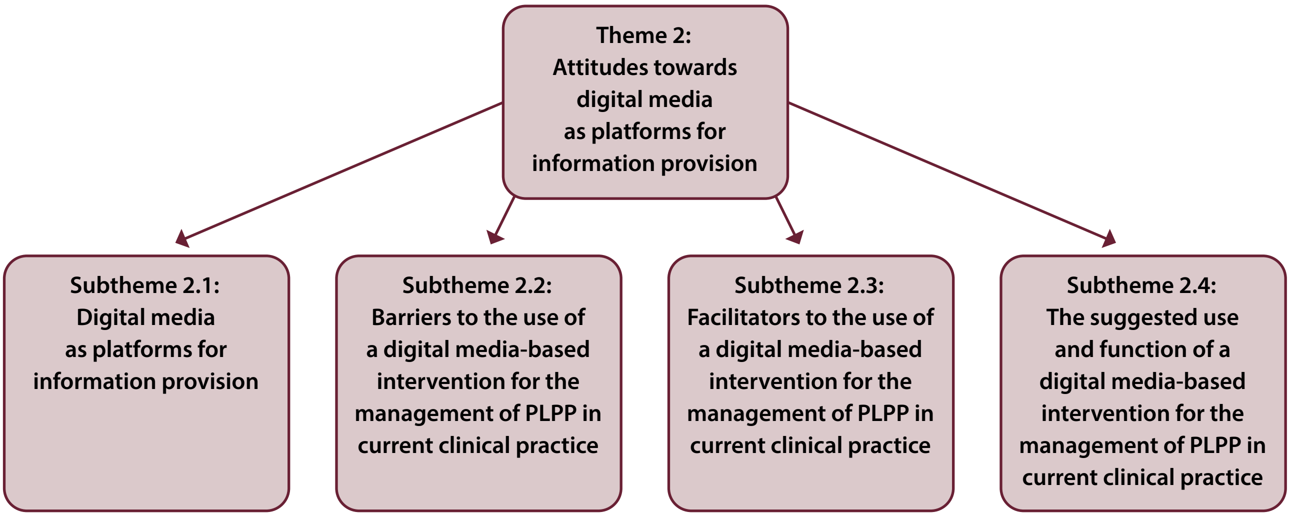

Figure 2. Relationship of Theme 2 to subthemes.

One physiotherapist stated that she will occasionally direct patients towards trusted online resources, however the group as a whole described a current reliance on paper-based resources:

'… but if I'm going to recommend something, then I tend to only recommend the websites that are in the booklets we give out' (Physiotherapist 4).

Conversely, the midwives (based within another NHS trust) described an institution-wide shift towards the use of online information resources in an attempt to reduce costs and save time:

'I mean now … we signpost and send electronic leaflets now don't we? They [patients] *don't get the paper version. I think it was more of a cost-related thing for the trust'* (Midwife 1).

Theme 2: Attitudes towards digital media as platforms for information provision

Subtheme 2.1 Digital media as platforms for information provision

Each of the stakeholder groups acknowledged the potential utility of smartphone applications (apps) for information provision. Four of the seven service users reported the use of pregnancy-related apps during their current pregnancy. Two members of the physiotherapist group and three of the midwives also reported some experience of using apps to support clinical practice:

'NHS Squeezy [app]. *That's a good one … for pelvic floor exercises, it like reminds you to do them. It's really good'* (Physiotherapist 2).

Four of the seven service users stated a definite preference for apps over SoMe for PLPP-related information provision and cited a lack of trust in information acquired via SoMe as the principal reason for this:

'I think an app would be far more useful. I download apps all the time but like I said, I don't use Facebook any more or anything like that and I wouldn't use social media to look for information. I wouldn't trust information on there if I didn't know where it was from' (Service user 6).

Subtheme 2.2 Barriers to the use of a digital media-based intervention for the management of PLPP in current clinical practice

For the service users, significant barriers to the use of an app-based intervention included: content or layout that was not engaging; an excessive or overwhelming volume of information and excessive use of medical jargon. The cost of apps was also identified as a factor determining use by three service users; for one participant, the need to pay for access was an insurmountable barrier to uptake:

'It's an expensive time as it is, so you're not going to pay for an app' (Service user 2).

Perceived barriers to the implementation of a SoMe-based intervention into clinical practice highlighted by the physiotherapists included the lack of access to technology within different NHS trusts and limitations imposed by NHS IT servers. The possibility for SoMe platforms to become vehicles for misinformation was also a significant concern:

'But I think that's the thing about Facebook isn't it, that it's become a bit of a free-for-all, a bit of a [forum] *doesn't it turn into? And I know everyone will put their own opinion on'* (Physiotherapist 3).

The need to supply large amounts of personal data in order to access a digital media-based intervention was a barrier highlighted by one service user. The protection of personal data was also a concern for the midwives:

'As long as there was none of that spyware attached or all the other ways that they collect your data that you don't even know about' (Midwife 2).

Subtheme 2.3 Facilitators to the use of a digital media-based intervention for the management of PLPP in current clinical practice

Several of the midwives specified that any intervention designed to support the management of PLPP would need to contain clear warnings about red flag signs and relevant safety-netting information for them to endorse it. Additionally, the physiotherapists wanted reassurance that all information included in the content would be consistent with current practice:

'If it's the same information you'd give out anyway … As long as the information is consistent and doesn't contradict anything that we'd tell them [patients], *then it'd help'* (Physiotherapist 1).

Provision of a broad range of condition-related information and clear advice to aid self-management were identified by each service user as key facilitators to uptake:

'Well it would have been nice to be given all the information under that umbrella if you will, all of the information to help me … just as much information as possible about the whole thing and what I could've done to help myself' (Service user 2).

Subtheme 2.4 The suggested use and function of a digital media-based intervention for the management of PLPP in current clinical practice

Staff in both the HCP focus groups believed that any digital media-based intervention for the management of PLPP should be distributed by a health care professional to allow the opportunity to screen for potential differential diagnoses:

'…Because if it's pelvic girdle pain, it could be masking a UTI or … You do need to have a discussion about it to make sure that you get a proper diagnosis' (Midwife 2).

The physiotherapists suggested that midwives were best placed to distribute such an intervention as they would likely be the first professionals to whom the symptoms of PLPP are reported:

'… the women could be given an app at the first appointment that they mention it [PLPP] *to the midwife'* (Physiotherapist 2).

There was agreement among the three stakeholder groups that early access to such an intervention would be preferable to prevent the deterioration of symptoms and to avoid unnecessary condition-related anxiety. One midwife suggested that the intervention could be distributed to every pregnant woman in the early stages of pregnancy as a preventative measure:

'I'd like to give it [app-based intervention] *to every woman at the first point of contact, and just say, look, this is something that might affect you in your pregnancy* [PLPP], *it might not, but you download the app and if you feel you need it, have a read through it and if you do feel like you need it for further support, then you've got it'* (Midwife 1).

However, three of the four physiotherapists and one service user questioned the wisdom of this approach due to the concern that PLPP-related information may seem irrelevant to those not experiencing symptoms:

'I think it would have been useful [to have received information about PLPP earlier in the pregnancy], *but until you start having the pain, it's not really something you kind of take on board or look into'* (Service user 4).

Discussion

The findings of this study underscore the complex drivers for online PLPP-related information-seeking among pregnant women and highlight the concerns shared by service users and clinicians regarding the accuracy and trustworthiness of online information.

The use of digital media for PLPP-related information provision was viewed positively by all three stakeholder groups, however there was a preference for the use of apps over SoMe among the majority of service users.

A range of barriers and facilitators to the implementation of a digital media-based intervention to support the management of PLPP in an NHS setting have been highlighted and need to be carefully considered.

Theme 1: Information-seeking and information provision in the context of PLPP

A recent survey by Snyder et al (2020) found that 96 per cent of the pregnant women sampled used the internet to search for nutritional information in the perinatal period. It is therefore unsurprising that, when discussing their information-seeking behaviours, each of the service users in our sample described the use of Google to search for PLPP-related information.

The stated reasons for searching for information online included: to provide reassurance; to facilitate self-screening; to alter the clinician-patient relationship dynamic and to aid decision-making regarding the need for HCP input. Similar reasons for online health information-seeking have previously been reported in the wider health information literature, highlighting the complexity involved in women's interactions with online information (Peyton et al 2014, Maslen & Lupton 2018).

These interactions were, however, poorly understood by the HCPs in this study, with both groups of clinicians taking an overly simplistic view of their patients' information-seeking practices; this observation may not be unique to our study sample (Higgins et al 2011).

Printed materials may not be the preferred format for information provision for pregnant women, as they are easily lost, misplaced or discarded (Peyton et al 2014). The midwives in this study therefore predictably described a recent shift towards the use of online resources in place of former paper-based alternatives. This was however perceived to be a cost-saving exercise rather than an attempt to address the changing needs of the patient population. This trend has not yet been adopted by all health care institutions, as the physiotherapists in this study demonstrated.

The majority of service users in our sample believed information obtained via an HCP to be more factually accurate and more reassuring than that obtained online. These insights are in accord with previous research which demonstrated that women who use the internet to search for information relating to childbearing, tend to view online information as a supplement to that provided by their HCP, rather than as a substitute (Willis et al 2015, Gleeson et al 2019).

Both groups of clinicians in this study shared concerns about the accuracy of online PLPP-related information in addition to the potential for online information to be misinterpreted. Similar concerns have been previously highlighted in the midwifery literature, with one survey reporting that general pregnancy-related online information was perceived to be 'not very' or 'not at all' accurate by 19 per cent of the midwives who responded (Lagan et al 2011). Additionally, recent studies in other areas of health care have demonstrated huge variability in the quality (Daraz et al 2019), accuracy (Ferreira et al 2019) and readability (Rothrock et al 2019) of online health-related information, suggesting that the concerns of the clinicians in our study are not unfounded.

Several service users in our sample described difficulty deciphering the trustworthiness of online PLPP-related information. Others, however, reported preferentially seeking information from trusted resources — such as the NHS website — in order to avoid this issue. The trust placed in the NHS website was owing to the perception that there would be strict regulation of its content. This reflects existing evidence which suggests that women place greater trust in resources produced by government health department websites and those produced by high-profile non-government organisations (Maslen & Lupton 2018).

According to the NHS website's content policy, all clinical content published via this platform is reviewed by an '*appropriately qualified and experienced clinician*', supporting service users' expectation of accuracy and trustworthiness (NHS 2018:4.1.3).

Our findings highlighted a shared concern among all three stakeholder groups regarding the potential for online information-seeking to cause unnecessary panic or distress. This is not unreasonable given that previous research has identified a positive association between health anxiety and health information seeking (McMullan et al 2019), and exposure to conflicting health information has been shown to cause confusion, frustration, and anxiety (Bianchi et al 2016).

The physiotherapists were concerned that unregulated content accessed via online forums may present a risk of misinformation and unnecessary condition-related anxiety if accepted without appropriate critique. This concern is understandable given the variable quality of advice contained in online discussion threads (Cole et al 2016).

Theme 2: Attitudes towards mobile phone apps and social media as platforms for information provision

The use of a digital media-based intervention to support the management of PLPP was viewed positively by all stakeholder groups in this study, however there was a preference for the use of apps over SoMe for PLPP-related information provision among the majority of service users. A lack of trust in information obtained via SoMe was the most common reason given for this opinion.

This finding was unexpected given that pregnant women have previously been shown to be highly engaged with SoMe (Zhu et al 2019) and to view the information obtained via these channels to be useful and trusted (Larsson 2009). The conflict between our findings and those of previous work could be due to demographic differences in the study populations sampled, the different research contexts in which the studies were undertaken, or the fact that service users in our study were describing the search for specific condition-related information rather than generic pregnancy-related information.

Each of the stakeholder groups identified several general barriers to the use of a digital media-based intervention for the management of PLPP within an NHS setting: cost, data security, commercial advertising, excessive information, and limited resources were all proposed by participants. These are largely in keeping with barriers to implementation of app-based interventions identified in other areas of health care (Velu et al 2017). However, evidence also suggests that levels of clinician engagement with mobile health interventions may vary across settings (Leigh et al 2020, Kerst et al 2020) and that the usability of an app may impact on patients' willingness to engage (Bayambasuren et al 2020). These additional barriers would therefore also need to be considered and mitigated throughout the intervention development process.

Many of the pitfalls of online information-seeking could be minimised if clinicians openly discussed the information obtained online with their patients; providing an opportunity for the correction of misinformation and appropriate provision of reassurance (Sayakhot & Carolan-Olah 2016, Tan & Goonawardene 2017). However, evidence suggests that patients are often reluctant to discuss their information-seeking behaviours with their clinician unless the clinician initiates the conversation, due to concerns over potential negative judgement (Tan & Goonawardene 2017). It is also acknowledged that clinical time pressures often present significant barriers to these discussions (Vennedey et al 2020).

An intervention that provides high-quality PLPP-related information may therefore reduce the need for service users to tackle huge volumes of online material by ensuring their information needs are appropriately met with access to an accurate, trustworthy resource. The positive perception of the use of apps for information provision identified in this study suggests that an app-based intervention to support the management of PLPP is worthy of further exploration.

Strengths and limitations of this study

The strengths of this study are that priority was given to the voice of the service users in order to ensure their information needs were understood, but views from all relevant stakeholder groups were collected. The focus of the study was kept purposely broad, exploring the use of multiple digital media as opposed to any single medium in isolation.

The main limitation of this study is that the coding framework was initially constructed by a single team member (MM) prior to review by the research team, and no member-checking was employed.

Conclusion

While this is a small-scale study and the findings may not be generalisable across settings, this work has demonstrated that the online information-seeking behaviours of women with PLPP are complex and the use of the internet to search for condition-related information is common. Difficulties deciphering the trustworthiness of online PLPP-related information were highlighted, as were concerns regarding the accuracy of online information. NHS-based service users and HCPs viewed the notion of a digital media-based intervention to support the management of PLPP in a positive light. A preference for apps over SoMe for information provision was stated by the majority of service users, owing to a lack of trust in information obtained via SoMe. The notion of an app-based intervention to support the management of PLPP is therefore worthy of further exploration.

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Conflicts of interest

Following completion of this study, the lead author has consulted with the commercial company ‘Living With Ltd’ to develop an app-based intervention to support the management of PLPP. This arrangement provides no financial benefit to the authors.

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The influence of self-compassion upon midwives and nurses: a scoping review

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ABSTRACT

Background: It is recognised that having self-compassion can have a positive effect upon a person's health. However, the influence of self-compassion upon midwives and nurses is less well recognised. Midwives and nurses often work in highly demanding environments and are often exposed to multiple work-based stressors. Self-compassion may act as a protective factor and assist midwives and nurses to remain healthy.

Research question: Is there evidence of specific factors associated with self-compassion upon midwives' and nurses' health status?

Methods: Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) was utilised to identify relevant articles. The search strategy included electronic databases: MEDLINE, Embase, Emcare, PsycInfo, Joanna Briggs Institute, Cochrane Library, Scopus, and a bespoke search by MIDIRS. Grey literature sources were searched including ProQuest Central, Google Scholar, hand search of key journals and reference lists of relevant articles.

This scoping review was undertaken in seven stages: 1) identifying research questions; 2) identifying relevant studies; 3) selecting studies; 4) charting data; 5) collating, summarising and reporting results; 6) consulting and 7) dissemination of knowledge. Data were abstracted and presented using PRISMA-ScR checklist which involved three independent researchers.

Results: The literature search was undertaken in January 2000 and July 2020. A total of 1292 relevant articles were identified. Of these, 22 articles met the inclusion criteria. Bibliographic information of study; aims; research design; setting/context; number of participants; measure(s) used; influential factors of self-compassion; self-compassion education and training (if applicable); analyses conducted; results of statistical analyses and review of findings were summarised. Overall, included studies demonstrate that having higher levels of self-compassion was linked to reduced mental health symptoms, in midwives and nurses.

Conclusions: Self-compassion appears to help reduce work-based stressors such as anxiety, compassion fatigue, and burnout. The influence of self-compassion on midwives' and nurses' health and wellbeing, may be an important factor that has implications for future self-care strategies. This review concludes that self-compassion education may improve awareness and increase ability to have self-compassion. There is a timely need to undertake research to explore the influence of self-compassion for midwives; this review highlighted a lack of studies as most studies related to nursing.

Keywords: self-compassion, self-worth, self-appreciation, self-kindness, midwives, nurses, mental health, wellbeing, Evidence Based Midwifery

Background

The focus of this scoping review relates to the influence of self-compassion on midwives and nurses and how this concept may assist midwives and nurses to maintain health and wellbeing. Self-compassion is a concept of Buddhist philosophy where a person acts inwardly toward themself with kindness, warmth, and acceptance in times of need (Neff 2003a, Grabovac et al 2011). Neff (2003a) and Heffernan et al (2010) have described self-compassion as turning compassion inwards, being kind to yourself, and acknowledging your own humanity, imperfection and fragility.

Three interconnected components have been defined that determine a self-compassionate response to personal negative emotions and experiences (Neff 2003a, Barnard & Curry 2011): self-kindness versus self-judgment, sense of common humanity versus isolation, and mindfulness versus over-identification.

Self-kindness is described as an understanding of behaviour towards yourself in the face of suffering. A sense of common humanity relates to the acceptance that life stresses and experiences are a shared human experience, rather than an interpretation that is separate from others. Mindfulness describes the balanced awareness of negative thoughts and feelings rather than their over-identification. These individual components are closely aligned to interact to generate a self-compassionate frame of mind (Neff & Costigan 2014).

It has been reported that self-compassion and mindfulness can improve health care professionals' mental health (Neely et al 2009, Zessin et al 2015) by enhancing optimism (Neff et al 2007, Seydi et al 2013), happiness (Raab 2014) and by looking at problems from a larger perspective (Costa & Pinto-Gouveia 2011).

Understanding and increasing self-compassion in health care professionals continues to be an important, yet under-represented, area of research. High rates of work-related stress and burnout in health care professionals (Dyrbye et al 2014) can lead to anxiety, sleep disturbances, fatigue and increased risk of depression (Shailesh 2016).

Previous studies have suggested that the overall wellbeing of health care professionals can be influenced by self-compassion. Recently, Andrews et al 2020 reported that self-compassion is linked to adopting good self-care behaviours, such as allocating time for good nutrition, regular exercise as previously reported by Weiner et al (2001), Shanafelt et al (2012), along with relaxation and spirituality activities as highlighted by Manusov et al (1995), Weiner et al (2001). Additionally, happiness levels can be improved by self-compassion and use of adaptive behavioural and cognitive tasks (Sin & Lyubomirsky 2009, Benzo et al 2017).

Stressors, such as demanding and emotive clinical workload, high acuity, understaffing, missing breaks, working more than their contracted hours and lack of resources, can lead to midwives and nurses feeling physically and mentally exhausted over time (Andrews et al 2020). For example, midwives caring for pregnant women experiencing stillbirth (Finlay-Jones et al 2015) or oncology nurses looking after patients who are in severe pain, distress and approaching death (Duarte & Pinto-Gouveia 2017a, 2017b); these types of experiences may lead to negative emotional and psychological outcomes. These factors and experiences can then lead to compassion fatigue and have a negative impact on the care given by midwives and nurses (Heffernan et al 2010).

Self-compassion education and training has been recommended for health professionals to help them cope with daily anxiety and stress and when providing care to others (Raab 2014). This scoping review will search literature investigating and/or exploring the influence of self-compassion for midwives and nurses. It is anticipated that the findings will inform educational needs and implications for self-compassion in clinical practice.

Aim and objectives

The initial aim of this scoping review was to identify the influencing factors of self-compassion upon midwives. After an initial search, only four studies were found that reported on the influence of self-compassion and recruited midwives as participants (Beaumont et al 2016, Mahon et al 2017, Delaney 2018, Andrews et al 2020). Published literature appears to have focused mostly on nurses. There appears to be a distinct global gap in evidence investigating the influence of self-compassion upon midwives. Due to a lack of research studies on midwives, the aim was expanded to include nurses in this scoping review.

This review aimed to scope all forms of contemporary literature to determine if there was evidence of self-compassion influencing midwives and nurses. The review objectives were to identify studies that have either investigated or explored factors that influence midwives' and nurses' self-compassion and map factors that positively or negatively impact on their health. The review identified studies that have directly evaluated education or training programmes that focus on self-compassion for midwives and nurses.

Methods

Scoping review

This scoping review used seven stages to identify relevant articles: 1) identifying the research question; 2) identifying relevant studies; 3) selecting studies; 4) charting the data; 5) collating, summarising, and reporting the results; 6) consultation and 7) disseminating the knowledge (Levac et al 2010, Tricco et al 2018). Reporting was conducted according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al 2018). A detailed description of this scoping review protocol has been reported elsewhere (Javanmard et al 2020).

Inclusion and exclusion criteria

The review was limited to papers written in English. Due to the increasing focus on self-compassion in the last two decades in Western society, studies published from 2000 to 2020 were included. The review considered all types of studies. Studies needed to consider at least one component of self-compassion upon midwives and nurses and utilise a self-compassion scale. Letters to the editor, commentaries, case reports, and ongoing studies were excluded from the review.

The following Population, Concept and Context (PCC) mnemonic was used to develop the research questions and search strategy for this scoping review (Tricco et al 2018):

- *Population:* All qualified and registered midwives and nurses who were practising midwifery and nursing (full time; part-time and casual) were included in the scoping review. Nursing assistants and support workers were not included. Midwifery and nursing students were also excluded.
- *Concept:* Self-compassion as being kind to yourself focusing on midwives and nurses and protective mechanisms of self-compassion were reviewed.
- *Context:* The scoping review considered studies that involved qualified and registered midwives and nurses undertaken in any health care setting including, but not restricted to, hospitals and community, medical, and educational centres. Studies that utilised validated measures for self-compassion were reviewed.

Primary research question

Is there evidence of specific factors associated with self-compassion upon midwives' and nurses' health status?

Secondary research questions

How have included studies reported on the measurement and effectiveness of self-compassion?

Is there evidence to support self-compassion education and training for midwives and nurses and is this associated with improved health outcomes?

How have studies reported any challenges or limitations upon implementation of self-compassion education and training for midwives and nurses?

Search strategy

Keywords and terms using MeSH headings relating to self-compassion, nurses and/or midwives and health settings as described in the PCC criteria were utilised to search relevant databases. MeSH headings relating specifically to self-care, self-efficacy or empathy were not reviewed. (See Table 1.)

Databases

Several electronic databases were searched to identify relevant studies between 2000 and July 2020. (See Figure 1.) All identified references were exported to Covidence (a web-based source selection tool) to assist reviewers to eliminate duplicates and screen titles and abstracts, and full text reviews. Two reviewers screened title and abstract for each of the papers against the inclusion/exclusion criteria. The full text version of potential papers was then read and screened. Consensus was gained by agreement of all three reviewers.

Table 1. Search keywords and terms.

Participants	Midwives OR midwi* OR nurses OR nurs*
Concept	Self-compassion* OR self?compassion OR Self-kindness* OR self?kindness OR Self-worth* OR self?worth OR Self-appreciation* OR self?appreciation
Context	Health care facilities (e.g. community and medical centres and hospitals) Educational centres (e.g. universities)

Database findings

A total of 1292 articles were identified. Primary literature search identified 1207 articles including MEDLINE (198); Embase (225); Emcare (178); OVID Nursing Databases (158); Cochrane Library (43); Joanna Briggs Institute (207); PsycInfo (165); Scopus (18), MIDIRS (15). Additional records were identified through grey literature (n=85) including ProQuest Central (30); Google Scholar (33) and hand search (22).

Removing duplicates reduced this number to 532 articles eligible for title and abstract review. From these, 92 articles were deemed to be relevant and underwent closer review. A total of 22 articles met these criteria (Figure 1). The selection process was reported using a PRISMA-ScR flow diagram (Tricco et al 2018).

Results

A summary of the study characteristics of 22 included studies (S1-S22) published from January 2000 to July 2020 is in Supplementary information (see end of article).

Three studies (13.6%) were published in 2020, five studies (22.7%) in 2019, three studies (13.6%) in 2018, five studies (22.7%) in 2017, four studies (18.1%) in 2016, one study (4.5%) in 2015 and one study (4.5%) in 2010.

Study geographical location showed that these studies spanned nine countries. Six studies (27.3%) were conducted in the United States of America (USA) (S1, S6, S12, S14, S21, S22), four studies (18.2%) were in the United Kingdom (UK) (S2, S8, S18, S19), three studies (13.6%) were in Spain (S4, S13, S17), two studies (9.1%) were from each of the following countries: New Zealand (S3, S10), Ireland (S9, S16) and Portugal (S15, S20) and one study (4.5%)

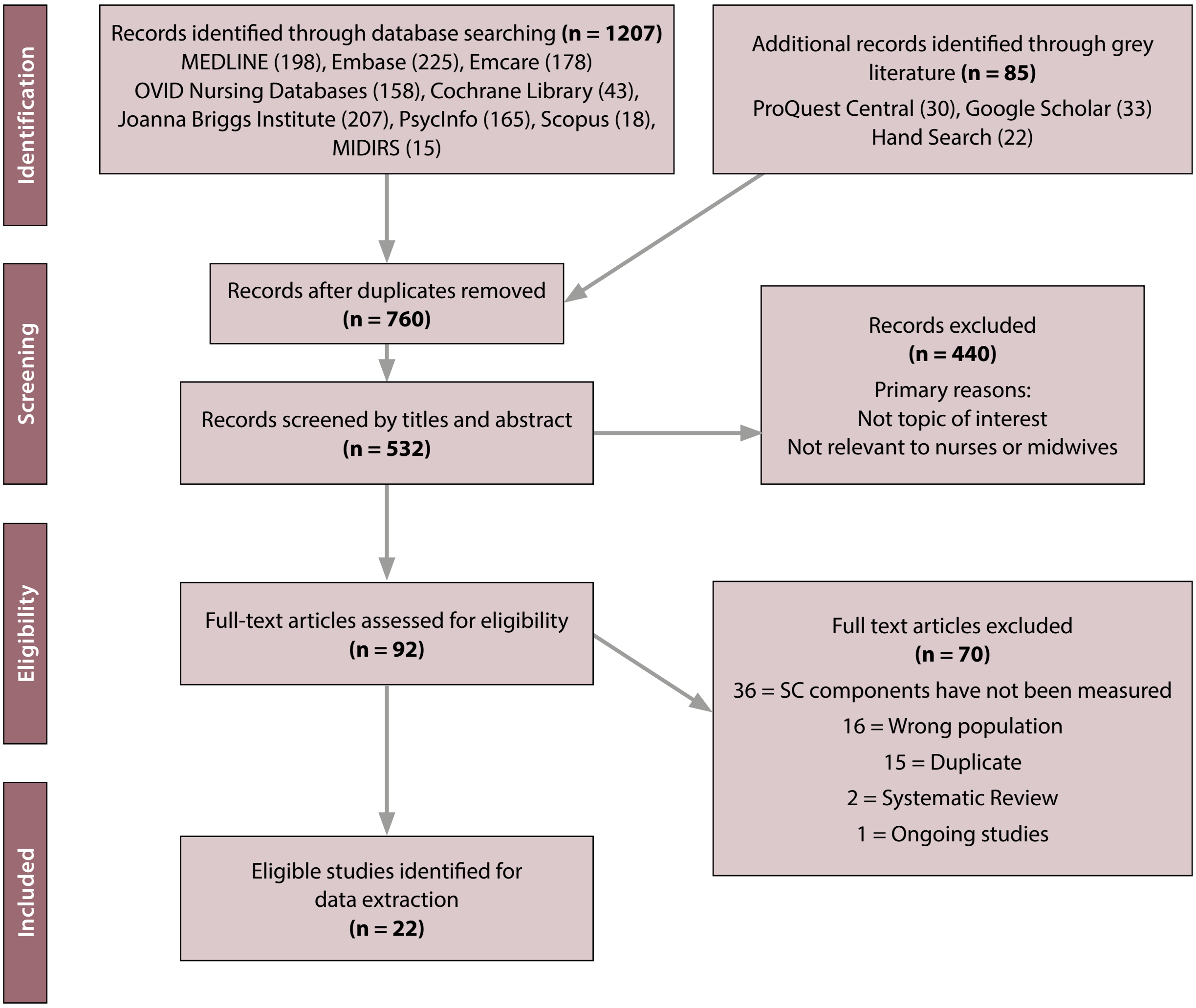

Figure 1. PrismaScR flow chart.

undertaken in the following countries: Japan (S5), Brazil (S7) and Australia (S11).

Studies varied in design, but a large majority utilised a quantitative approach. Variation with the study designs included: correlational quantitative study (S1, S6, S22), cross-sectional study (S3, S5, S10, S11, S12, S13, S17, S18, S20, S21), a longitudinal study with a pre-post intervention design (S4), an observational mixed research study (pilot study and qualitative phase utilising a phenomenological approach) (S9), a non-randomised controlled study (S15) and a quasi-experimental pre-test/post-test design (S16). Three studies did not specifically report what type of quantitative approach was used (S7, S14, S19).

Only two qualitative studies were identified, one used a constructivist grounded theory approach (S2) and the other a phenomenological approach (S8). Most studies, 20 (91.0%), used surveys to collect data. Of all the included studies, 12 studies (54.5%) used online survey/questionnaire (S1, S3, S4, S6, S7, S10, S11, S12, S14, S19, S21, S22), while eight studies (36.4%) distributed surveys as a hard copy package (S5, S9, S13, S15, S16, S17, S18, S20) and (S19) combined these methods.

Sample sizes across the 22 included studies varied, 13 Irish nurses (including midwives) (S9), to 801 nurses in studies from New Zealand (S3, S10). All studies recruited qualified nurses and/or midwives practising clinical nursing or midwifery, and one (S18) recruited 37 registered community nurses who were studying for a postgraduate diploma at a university in the north of England. All studies included nurses and, four, midwives. (S2, S9, S16, S19). Nine studies (40.9%) included other health professionals (S3, S4, S8, S11, S12, S14, S17, S19, S21). One study (4.5%) included patients (S7). (See summary of included studies in Supplementary information).

Self-compassion scales (SCS)

Of the included studies, 20 (91.0%) used quantitative data from self-reported SCS. To measure self-compassion, six studies (27.3%) (S1, S6, S9, S12, S18, S22) used the original SCS, a 26-item scale (Neff

2003b). Six studies (27.3%) (S3, S10, S11, S14, S19, S21) used the SCS 12-item short version (SF), (Raes et al 2011). Seven studies (31.8%) used translated validated versions of SCS original and short version including: S4 (Spanish version of 12 items SF), S5: (Japanese version SCS 26 items), S7: (Brazilian version of 26 items), S13, S17: (Spanish version of 26 items), S15, S20: (Portuguese version of 26 items). The only exception was S16 (4.5%) which used a Compassion Scale (CS), 24 items, an adaptation of the Self-Compassion Scale (Pommier 2010). The summary of studies (see Supplementary information) includes a list of other instruments/tools used in studies to assess associated factors that relate to self-compassion.

Table 2. Factors associated with self-compassion.

Factors reported		**Supporting studies**
Self-compassion (general)		S3, S10, S12, S18, S19, S20, S21
Mental health		S8
Physical health		S8, S21
Positive attributes of self-compassion	Self-kindness:	S1, S4, S5, S6, S7, S9, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S21, S22
	Common humanity	
	Mindfulness:	
Negative attributes of self-compassion	Self-judgment:	S1, S5, S6, S7, S9, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S22
	Isolation	
	Over-identification	
Specific factors		
Caring efficacy		S1
Compassion care		S2, S14
Wellbeing		S2, S14, S18
Quality of life		S3, S18
Empathy		S4, S7, S20
Compassion satisfaction		S6, S9, S20
Job satisfaction		S6
Resilience		S9, S18, S21
Self-care ability		S11
Compassion and compassion for others		S11
Gratitude		S14
Satisfaction with life		S15
Emotional intelligence		S22
Burnout		S2, S3, S4, S6, S9, S10, S12, S13, S15, S17, S18, S20
Stress		S3, S15, S16, S20, S21
Rumination		S5
Secondary traumatic stress		S6, S9
Sleep disturbance		S6, S21
Patient/family and clinical barriers to compassion		S10
Depression		S12, S15
Anxiety		S15
Compassion fatigue		S18, S20
Self-criticism		S19

Factors associated with self-compassion

After reviewing the studies, 26 factors were identified as being associated with self-compassion. These included positive factors (for example, wellbeing, satisfaction with life, compassion satisfaction), as well as negative factors (for example, burnout, stress, depression), see Table 2.

Between the analysed categories (that is, the studies' research questions/objectives) studies were not mutually exclusive. Fourteen studies (63.6%) reported on specific factors associated with and/or influenced by self-compassion, these were: caring efficacy (S1) and compassionate care (S2, S14), wellbeing (S2, S14, S18), quality of life (S3, S18), empathy (S4, S7, S20), compassion satisfaction (S6, S9, S20). Other studies reported on job satisfaction (S6), resilience (S9, S21), self-care ability (S11), compassion and compassion for others (S11), gratitude (S14), satisfaction with life (S15), emotional intelligence (S22).

Twelve studies (54.5%) explored the relationship between self-compassion with burnout (S2, S3, S4, S6, S9, S10, S12, S13, S15, S17, S18, S20) and five studies measured stress (S3, S15, S16, S20, S21). Other studies investigated rumination (S5), sleep disturbance (S6, S21), secondary traumatic stress (S6, S9), patient/family and clinical barriers to compassion (S10), depression (S12, S15), anxiety (S15), compassion fatigue (S18, S20), self-criticism (S19). One study focused generally on the influence of self-compassion upon mental and physical health (S8) and another also included physical health (S21).

Influence of self-compassion on midwives and nurses

Self-compassion was found to improve caring efficacy (S1) and increased nurses' and midwives' ability to manage their negative emotions and prevent some of the negative consequences of nursing/midwifery, such as burnout and compassion fatigue (S2). Self-compassion improved overall wellbeing in nurses and midwives and their ability to provide compassionate care (S2). Self-compassion was found to reduce levels of stress and burnout and improve nurses' quality of life (S3).

Higher level of rumination was associated with a higher negative SCS score ($r = 0.651$, $p < 0.001$) (S5). Positive components of self-compassion (that is, self-kindness, common humanity and mindfulness) were generally associated with compassion satisfaction, job satisfaction, and better sleep quality and inversely associated with burnout and secondary trauma (S6).

Nurses reported higher levels of self-compassion and higher empathy scores ($p = 0.002$) (S7). Greater trait for self-compassion was associated with lower levels of burnout and clinical barriers for patient/family compassion (S10). Increased self-care ability was associated with a higher level of self-compassion (S11).

Self-compassion and self-care ability were positively correlated ($r = 0.412$, $p < 0.001$), whereas a negative correlation was observed between compassion and self-compassion ($r = -0.122$, $p < 0.05$) (S11). Self-compassion was negatively correlated with total burnout ($r = -0.41$, $p < 0.001$) and with depression ($rpb = -0.39$, $p < 0.001$) (S12). Self-compassion was also found to reduce stress and emotional strain associated with providing daily care and contact to very ill patients whilst improving nurses' wellbeing and preventing burnout (S13). Components of self-compassion were found to have an impact on burnout.

S13 reported a significant inverse correlation between emotional exhaustion (EE) and self-kindness and self-judgment ($p = 0.005$); humanity and isolation ($p = 0.001$); and mindfulness and overidentification ($p = 0.019$). There was also a significant inverse correlation between depersonalisation (DP) and self-kindness and self-judgment ($p = 0.07$) and humanity and isolation ($p = 0.010$). Nurses who scored higher on the subscales of self-kindness and humanity had a lower score in EE and DP subscale.

There was a significant direct correlation between personal achievement (PA) and self-kindness and self-judgment ($p = 0.046$) and humanity and isolation ($p = 0.013$); Self-compassion was found to significantly mediate the effects of the intervention on burnout, depression, anxiety and stress symptoms, and satisfaction with life (S15).

More compassion satisfaction was also associated with higher levels of self-kindness, mindfulness and common humanity and lower levels of self-judgment and isolation (S20). More burnout was associated with lower levels of self-kindness, mindfulness and common humanity, and higher levels of self-judgment, over-identification and isolation (S20). Compassion fatigue was associated with lower levels of mindfulness and higher levels of self-judgment, over-identification and isolation. (S20) also found significant associations between empathy and self-compassion. Personal distress was negatively associated with the positive components of self-compassion and associated with the negative components. However, empathic concern showed a more mixed pattern (S20).

Scores on a Sleep Disturbance Scale were significantly negatively correlated with mindfulness ($r = - 0.32$; $p < 0.01$) and self-compassion ($r = -0.27$; $p < 0.01$) (S21). Resilience scores were significantly correlated with both mindfulness ($r = 0.5$; $p < 0.01$) and self-compassion ($r = 0.54$; $p < 0.01$) (S21). Furthermore, mindfulness and self-compassion were strongly correlated with each other ($r = 0.63$; $p < 0.001$), and both were correlated with physical health ($r = 0.37$ and 0.29, respectively; $p < 0.01$ for both), global mental health ($r = 0.56$ and 0.53, respectively; $p < 0.001$), and perceived stress ($r = -0.58$ and -0.55; $p < 0.001$) (S21). S22 shows a positive correlation between self-compassion and emotional intelligence ($r = 0.55$).

Educational/training programmes or interventions

Overall, six studies (27.2%) included in this review reported educational/training programmes or interventions facilitated to participants mostly at their workplaces (S1, S9, S14, S19) or in the home setting through online training (S4) or using compact disks (CD) (S16). S4 included an eight-week mindfulness training programme and reported how useful practising mindfulness was for ICU nurses, particularly, as the researchers reported a reduction of emotional exhaustion and increase in self-compassion.

S9 included a pilot eight-week mindful self-compassion (MSC) training programme. The Pre- to Post- scores of secondary trauma and burnout declined significantly and were negatively associated with self-compassion ($r = -0.62$, $p = 0.02$) ($r = -0.55$, $p = 0.05$) and mindfulness ($r = -0.54$, $p = 0.05$). ($r = -0.60$, $p = 0.03$), respectively. In this study, resilience and compassion satisfaction scores increased. All variables demonstrated a large effect size (Cohen's $d = 1.23$).

The qualitative emergent themes supported the quantitative findings and expanded the understanding of how MSC enhanced nurses' coping. Post-intervention scores on the compassion fatigue, secondary traumatic stress (Pre. Mean = 27.23, SD = 4.10) (Post. Mean = 23.84, SD = 4.21), and burnout (Pre. Mean = 29.07, SD = 4.34) (Post. Mean = 23.07, SD = 3.35), showed decreases when undertaking a correlation analysis using Pearson correlation showing the strength and direction of relationship between self-compassion and secondary traumatic stress: ($r = -0.62$), p value = 0.02 burnout: ($r = -0.55$), p value = 0.05 compassion satisfaction: ($r = -0.19$), p value = 0.52 resilience: ($r = +0.27$), p value = 0.37.

S14 included three online meditation training modules. Time to undertake each module was, approximately, one hour. Training was associated with statistically significant improvements in gratitude (38.3 + 4.6 to 39.5 + 3.3), wellbeing (16.4 + 4.0 to 17.9 + 4.2), self-compassion (39.5 + 8.1 to 43.1 + 7.6), and confidence in providing compassionate care (73.3 + 16.4 to 80.9 + 13.8; $p < 0.001$ for all comparisons).

S15 included a six-week mindfulness-based group intervention, based on the principles of Mindfulness-Based Stress Reduction (MBSR). The intervention consisted of six, two-hour group sessions, using a CD. Self-compassion was reported to significantly mediate the effects of the intervention on burnout, depression, anxiety and stress symptoms, and satisfaction with life. There was a significant indirect effect of intervention on burnout through psychological inflexibility, B = -0.59, SE = 0.30, 95% CI [-1.33 to -0.12]. Furthermore, the intervention had a direct negative effect on psychological inflexibility, B = -2.62, SE = 0.82, t = -3.12, p = 0.002, 95% CI [-4.259 to -0.975], and this decrease in psychological inflexibility was directly related to a decrease in burnout, B = 0.22, SE = 0.10, t = 2.31, p = 0.026, 95% CI [0.028 to 0.419].

S16 assessed a mindfulness-based stress reduction (MBSR) course. The MBSR intervention course ran for a duration of eight weeks at two hospitals and for six weeks at another one. The participants completed a pre-test questionnaire and a post-test questionnaire. The MBSR intervention in all three sites was facilitated for two hours each week in the evenings, after the nurses' shifts had ended. The overall results suggest that an MSBR course can impact positively on nurses' perceived stress and enhance compassion.

S19 involved nurses and midwives attending a three-day workshop titled *An introduction to compassion focused therapy*. Data were collected before the workshop, at the end and at a follow-up focus group one month later. Results showed an overall statistically significant increase in self-compassion and statistically significant reduction in self-critical judgment after training. Furthermore, S9 and S19 also collected qualitative data via a focus group.

Discussion

A scoping review was considered the most appropriate design to address the aim and objectives of this review and to answer the research questions. The aim and objectives of this review were broad and unlike a systematic review or meta-analysis, this scoping review was not trying to answer a specific question, but rather 'examine the extent, range, and nature of a research activity' (Levac et al 2010:1). Undertaking a scoping review is considered the most appropriate approach to gather evidence from studies using a variety of methodologies, or where there are no reviews being undertaken on the specific topic (Pham et al 2014).

Initially, this review found a lack of research studies that focused on midwives and only identified four that involved the recruitment of midwives (Beaumont et al 2016, Mahon et al 2017, Delaney 2018, Andrews et al 2020). For this reason, the search strategy was expanded to include nursing literature. As far as the authors are aware this is the first review that specifically focuses on the influence of self-compassion upon midwives and nurses and factors associated with their mental health and wellbeing.

Neff defined self-compassion as:

'… being touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness …' (Neff 2003a:87).

Over the last two decades, there has been an increased awareness of the beneficial factors associated with self-compassion for health and wellbeing (Neff 2003a; Gilbert & Proctor 2006, Germer & Neff 2015, Dimitra et al 2020). It has been reported that when a person has high levels of self-compassion, this can positively increase their overall health and psychological wellbeing (Inwood & Ferrari 2018, Wilson et al 2018, Dimitra et al 2020), while low levels of self-compassion are associated with anxiety, stress and depression (Neff 2003b). Several studies have now confirmed that having a lack of self-compassion is associated with anxiety, stress and depression (MacBeth & Gumley 2012, Hoffart et al 2015, Galili-Weinstock et al 2018).

Nevertheless, self-compassion is now considered to be an adaptive emotional regulation strategy (Inwood & Ferrari 2018, Scoglio et al 2018) and may act as a buffer to prevent poor mental health and promote wellbeing (Germer & Neff 2015, Forkus et al 2020). Furthermore, there is evidence to suggest that providing self-compassion education and training, and including self-compassion as an emotional regulation strategy in therapy sessions, can enable a person to develop the ability to give themselves loving-kindness and this in turn can reduce anxiety, stress and depression symptoms (Wilson et al 2018) and also for post-traumatic related mental health issues (Steen et al 2021). Enhancing self-compassion as a focus of mindfulness education and training has been shown to increase compassionate self-care in health professionals (Jain et al 2007, Grabovac et al 2011).

This review confirms that education and training can increase knowledge and awareness of self-compassion and have a positive impact on reducing the risk of compassion fatigue and burnout in nurses and midwives (Mahon et al 2017, Duarte & Pinto-Gouveia 2017a, 2017b, Delaney 2018, Gracia Gozalo et al 2019) and enhance ability to give compassionate care to others (Rao & Kemper 2017). This review also reports that when midwives and nurses have high levels of self-compassion, this can act as a buffer and decrease the risk of compassion fatigue and burnout (Andrews et al 2020, Dev et al 2020). Additionally, self-compassion can help nurses to remain compassionate to others (Varghese 2020).

Overall, the included studies in this review have shown that having higher levels of self-compassion was linked to reduced mental health symptoms, in midwives and nurses, which has been reported in early studies for health professionals (Neely et al 2009, Zessin et al 2015) and increasingly for the general population (Wilson et al 2018).

It is well known that poor mental health can lead to poorer physical health and vice versa (Drake 2013) but this association is not usually considered within research studies. Interestingly, this review identified only two studies that reported on the influence of self-compassion on nurses' physical health and none for midwives (Kemper et al 2015, Andrews et al 2020).

Nevertheless, in general, the positive components of self-compassion (that is, self-kindness, common humanity and mindfulness) were associated with better mental and physical health, compassion satisfaction, job satisfaction, a better sleep quality and inversely associated with burnout and secondary trauma. This review has demonstrated that the influence of self-compassion can positively help midwives and nurses to remain mentally and physically well as it seems to act as a protective factor.

Strengths and limitations

A strength of this scoping review is that the PRISMA-ScR guidelines, which recommend utilising a rigorous methodology to undertake a scoping review, were used (Tricco et al 2018). A further strength is that the scoping review protocol has been peer-reviewed and published (Javanmard et al 2020). Nevertheless, limitations of the review findings need to be considered. Generalisation of findings is limited as included studies were conducted in nine developed countries. Therefore, many countries in the world were not represented and the influence and ability to practise self-compassion by nurses and midwives in these countries remains unknown. Additionally, most studies included used a cross-sectional (correlational) study design, thus limiting interpretation of findings and causation and the synthesis of the findings. Most studies did not include any follow up of participants and therefore, long-term influences were not investigated or explored.

Conclusions

In the general population self-compassion is associated with positive health and wellbeing outcomes. However, the influence of self-compassion on midwives' and nurses' health was less well known.

Midwives and nurses often work in highly demanding environments and situations and are susceptible to both professional and personal stressors. The influence of self-compassion on midwives' and nurses' health and wellbeing may be an important factor that has implications for future self-care strategies. This review has provided an evidence base and identified the gaps in current literature for self-compassion and priorities for future research for midwives and nurses. However, more rigorous research, including RCTs, mixed methods and longitudinal study designs, are required to examine the influence of self-compassion upon nurses' and midwives' health and wellbeing. There is an urgent need to undertake research exploring and investigating the impact and influence of self-compassion for midwives as this review highlighted a lack of studies and most studies included related to nursing.

Nevertheless, this review concludes that self-compassion education and training programmes may improve awareness and increase midwives' and nurses' ability to have self-compassion which may act as a buffer against poor mental health and maintain wellbeing and the ability to give compassion to others.

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Supplementary information

Summary of included studies

Article title	Country/year/authors	Study design	Sample	Self-compassion measure scale (if used)	Other scales/data tools (if used)	Educational/training programmes
S1) Relationships between positive and negative attributes of self-compassion and perceived caring efficacy among psychiatric-mental health nurses	USA, 2020 Varghese	Correlational quantitative study, online survey	**N=98** 55 staff nurses, 28 clinical nurse specialists, 10 managers (10.2%), 5 directors/senior level managers	Original Self-Compassion Scale (SCS), 26 items	Demographic questionnaire Caring Efficacy Scale, 30 items	N/A
S2) Needing permission: the experience of self-care and self-compassion in nursing: A constructivist grounded theory study	UK, 2020 Andrews et al	Constructivist grounded theory approach and memo writing	**N=30** 2 dual-qualified nurse/midwives, 14 general nurses, 13 mental health nurses, 1 learning disability nurse	N/A	Semi-structured interviews	N/A
S3) Self-compassion as a stress moderator: a cross-sectional study of 1700 doctors, nurses, and medical students	New Zealand, 2020 Dev et al	Cross-sectional study, survey	**N=1700** 801 nurses, 383 medical students, 516 physicians	SCS – short version, 12 items	An aggregate of z-standardised scores of three items indexing patient load, workload, and overall work stress: Copenhagen Burnout Inventory, Professional burnout, Satisfaction with Life Scale Quality of Life QOL	N/A
S4) Application of a mindfulness program among healthcare professionals in an intensive care unit: effect on burnout, empathy and self-compassion	Spain, 2019 Gracia Gozalo et al	A longitudinal study with an intrasubject pre–post intervention design	**N=32** 13 nurses, 11 nursing assistants, 8 physicians (25.0%)	SCS, 12 items, Spanish version	Maslach Burnout Inventory Human Service Survey, Five Facets of Mindfulness Questionnaire, Jefferson Empathy Scale (Spanish format)	Eight-week training programme
S5) Effects of self-compassion and self-focus on sleep disturbances among psychiatric nurses	Japan, 2020 Kurebayashi	Cross-sectional study	**N=404** All nurses who worked some night shifts	SCS, 26 items, Japanese version	Pittsburgh Sleep Quality Index (Japanese version: 19 items), Rumination-Reflection Questionnaire (Japanese version: self-focus, 24 items)	N/A

Article title	Country/year/authors	Study design	Sample	Self-compassion measure scale (if used)	Other scales/data tools (if used)	Educational/training programmes
S6) The intermediary role of burnout in the relationship between self-compassion and job satisfaction among nurses	USA, 2019 Vaillancourt & Wasylkiw	Correlational design, online survey	**N=158** All nurses	Original SCS, 26 items	Professional Quality of Life scale (30 items), Pittsburgh Sleep Quality Index, (9 items), Semantic differential scale, job satisfaction	N/A
S7) Nurses in the triage of the emergency department: self-compassion and empathy	Brazil, 2019 Savieto et al	Quantitative/online questionnaire	**N=108** 15 nurses, 93 patients	SCS, 26 items, Brazilian version	Socio-demographic questionnaire, Consultation and Relational Empathy Measure	N/A
S8) You before me': a qualitative study of health care professionals' and students' understanding and experiences of compassion in the workplace, self-compassion, self-care and health behaviours	UK, 2019 Egan et al	A phenomenological approach	**N=23** 10 nurses, 10 student nurses, 2 student midwives, 1 HCA	N/A	Semi-structured interviews	N/A
S9) Caring for the caregivers: evaluation of the effect of an eight-week pilot mindful self-compassion (MSC) training program on nurses' compassion fatigue and resilience	Ireland, 2018 Delaney	Observational mixed research pilot study Evaluation of effects 8-week MSC intervention	**N=13** Nurses/midwives: maternity, cancer care, cardiology, intensive care, urology	Original SCS, 26 items	The Freiburg Mindfulness inventory (14 items: short version, mindfulness), Professional Quality of Life Scale (version 5: Compassion Satisfaction and Fatigue Version), Connor-Davidson Resilience Scale (25 items: person's ability to cope with stress and adversity, resilience as the ability to adapt well)	Eight-week Mindful Self-Compassion (MSC) training
S10) Does self-compassion mitigate the relationship between burnout and barriers to compassion? A cross-sectional quantitative study of 799 nurses	New Zealand, 2018 Dev et al	Cross-sectional survey, non-random convenience sampling	**N=799** All nurses	SCS – short version, 12 items	Copenhagen Burnout Inventory (19 items: burnout), Barriers to Physician Compassion Questionnaire (34 items: barriers to compassion)	N/A

Article title	Country/year/authors	Study design	Sample	Self-compassion measure scale (if used)	Other scales/data tools (if used)	Educational/training programmes
S11) Exploring the meaning and practice of self-care among palliative care nurses and doctors: a qualitative study	Australia, 2018 Mills et al	Cross-sectional survey	**N=369** 247 palliative care nurses, 122 palliative care doctors	SCS – short version, 12 items	Santa Clara Brief Compassion Scale: (compassion), Visual Analogue Scale (self-care ability) To minimise socially desirable responding, a short form of the seminal Marlowe-Crowne Social Desirability Scale was also used as a control measure (10 items)	N/A
S12) Examining burnout, depression, and self-compassion in veterans affairs mental health staff	USA, 2017, Atkinson et al	Cross-sectional study	**N=128** 26 nurses, 8 clerical support, 26 social work, 28 psychology, 16 psychiatry, 17 other, 7 no response	Original SCS, 26 items	Copenhagen Burnout Inventory (19 items: personal burnout, work-related and client-related burnout), Patient Health Questionnaire-2 (depression)	N/A
S13) Burnout and mindfulness self-compassion in nurses of intensive care units: cross-sectional study	Spain, 2017 Gracia-Gracia & Oliván-Blázquez	Observation-based cross-sectional descriptive study quantitative, multicentric approach	**N=68** All ICU nurses	SCS, 26 items, Spanish version	MBI-Human Services Survey (22 items: burnout)	N/A
S14) Online training in specific meditation practices improves gratitude, well-being, self-compassion, and confidence in providing compassionate care among health professionals	USA, 2017 Rao & Kemper	Quantitative	**N=177** 73 nurses, 29 physicians, 15 dietitians,15 social workers, psychologists, or licensed counsellors, 32 others (occupational therapists, laboratory, radiology technicians, clerks, volunteers, HR staff), 8 alternative therapists, 5 researchers	SCS – short version, 12 items	Gratitude Questionnaire (6 items: gratitude), World Health Organization Well-Being Index (5 items: well-being), Confidence in Providing Calm, Compassionate Care Scale	Three online meditation training modules

Article title	Country/year/authors	Study design	Sample	Self-compassion measure scale (if used)	Other scales/data tools (if used)	Educational/training programmes
S15) Mindfulness, self-compassion and psychological inflexibility mediate the effects of a mindfulness-based intervention in a sample of oncology nurses	Portugal, 2017a Duarte & Pinto-Gouveia	Non-randomised controlled study (questionnaires before and immediately after the 6-week training programme)	**N=48** All nurses	SCS, 26 items, Portuguese version	Professional Quality of Life Scale (version 5, 30 items), Depression, Anxiety, Stress Scale DASS-21, Satisfaction with Life Scale (5 items), Acceptance and Action Questionnaire – II (7 items) Five facets of mindfulness assessed by the Five Facets of Mindfulness Questionnaire (39 items)	6-week mindfulness intervention – 6 x 2-hour group sessions Questionnaires before, immediately after and at 6-weeks after training programme
S16) Nurses' perceived stress and compassion following a mindfulness meditation and self-compassion training	Ireland, 2017 Mahon et al	Quasi-experimental pre-test/post-test design	**N=90** 71 nurses, 4 clinical nurse specialists or advanced nurse practitioners,12 nurse managers, 3 midwives	Compassion Scale (CS), 24 items, an adaptation of the SCS	Perceived Stress Scale (10 items) Pre- and post-test questionnaires completed	MBSR intervention course *8 weeks at hospital 1 *3 and 6 weeks at hospital 2
S17) Burnout subtypes and absence of self-compassion in primary healthcare professionals: a cross-sectional study	Spain, 2016 Montero-Marin et al	Cross-sectional study	**N=440** 184 nurses, 214 general practitioners, 42 medical residents	SCS, 26 items, Spanish version	Burnout Clinical Subtype Questionnaire (36 items), Maslach Burnout Inventory General Survey, (15 items), Utrecht Work Engagement Scale (17 items: mental state of accomplishment, as an antithesis to burnout), Positive and Negative Affect Schedule (20 adjectives)	N/A
S18) A pilot study exploring the relationship between self-compassion, self-judgement, self-kindness, compassion, professional quality of life and wellbeing among UK community nurses	UK, 2016 Durkin et al	Cross sectional questionnaire survey	**N=37** Nurses, all registered and full-time students studying for a 1-year PG diploma in community specialist practice	Original SCS, 26 items	The Professional Quality of Life Scale, Warwick Edinburgh Mental Well-being Scale (short version), Compassion for Others Scale	N/A

Article title	Country/year/authors	Study design	Sample	Self-compassion measure scale (if used)	Other scales/data tools (if used)	Educational/training programmes
S19) Does compassion-focused therapy training for health care educators and providers increase self-compassion and reduce self-persecution and self-criticism?	UK, 2016 Beaumont et al	Quantitative	**N=28** 11 nurses and midwives, 10 therapists (counsellors, CBT therapist), 7 HPs (smoking cessation, health care improvement, lecturers health care)	SCS – short version, 12 items	Functions of Self-Criticizing and Self-Attacking Scale (21 items: self-criticism), 28 pre- and post questionnaires (after 1 month)	Three-day introductory workshop on compassion-focused therapy
S20) Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: a cross-sectional study	Portugal, 2016 Duarte et al	Cross-sectional study	**N=280** All nurses	SCS, 26 items, Portuguese version	Professional Quality of Life Interpersonal Reactivity Index	N/A
S21) Are mindfulness and self-compassion associated with sleep and resilience in health professionals?	USA, 2015 Kemper & Khayat	Cross-sectional survey	**N=213** 30 nurses, 24 dieticians, 81 physicians, 52 social workers, 26 others (psychologist, public health)	SCS – short version, 12 items	PROMIS Sleep scale (8 items), Brief Resilience Scale (6 items), Cognitive and Affective Mindfulness Scale (10 items), Patient-Reported Outcomes Measurement Information System Global Health measures, Perceived Stress Scale (10 items)	N/A
S22) Self-compassion and emotional intelligence in nurses	USA, 2010 Heffernan et al	Descriptive, correlational study	**N=135** All nurses	Original SCS, 26 items	The Trait Emotional Intelligence Questionnaire (short form, 30 items)	N/A

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Newborn skin-cleansing practices and their rationales: a systematic review of the literature

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ABSTRACT

Aims: To systematically review literature investigating parents' and carers' newborn skin-cleansing practices in order to describe these practices and their underlying rationales.

Design: A systematic literature review.

Data sources: CINAHL, MEDLINE, British Nursing Database and PubMed databases were searched in February 2020. Primary research articles written in English and relevant to the topic were included, regardless of country of publication.

Review methods: Primary research papers published between 2009 and 2020 were reviewed using the Mixed Methods Appraisal Tool (MMAT) (Hong et al 2018). Relevant results from retrieved studies were extracted and tabulated. Qualitative data were analysed using the first two steps of Thomas & Harden's (2008) method of thematic analysis. A basic meta-integration process similar to that proposed by Frantzen & Fetters (2015) was performed and the limited quantitative findings were reported within the relevant qualitative theme.

Results: Seven studies were included and the following themes generated: bathing after birth, frequency of cleansing, substances used for bathing/cleansing, vernix removal and beliefs and culture. A wide range of newborn skin-cleansing practices exist across the countries and cultures studied, and the rationales for these practices are deeply rooted in the common belief systems and culture of the study area.

Conclusion: Cultural influences appear to drive parental practice, and many parents are unwilling to break away from these. In addition to further research into safe and effective newborn skin-cleansing methods, there is a call for new, large-scale, research which addresses gaps in current knowledge about the skin-cleansing practices of different groups of parents with newborn babies. This research would also seek to determine how these practices might be influenced, if they are shown not to be optimal, and guide planning for the effective dissemination of evidence-based information.

Keywords: midwives, carers, newborn, parents, skin, cleansing, practices, influences, rationales, Evidence Based Midwifery

Introduction

The thinner epidermal layers in newborn skin make it more susceptible to water loss and facilitate a higher degree of permeability to substances placed on the skin. Appropriate skin care is paramount while the skin is developing and maturing in order to protect it from excessive dryness, irritation and long-lasting alterations in skin barrier function (Iarkowski et al 2013, Cooke et al 2018). The UK National Institute for Health and Care Excellence (NICE) has not altered its advice on newborn skin care since 2006 (NICE 2015), and there is no detailed World Health Organization (WHO) guidance on skin cleansing. Popular websites aimed at parents, such as BabyCentre (babycentre.co.uk) and Pampers (pampers.co.uk), contain a plethora of often conflicting information, much of which is likely to be commercially motivated.

Background

According to the British Skin Foundation (2019) and the British Association of Dermatologists (2019), one in five children in the UK under the age of five suffers with eczema. This reflects the wider picture: the World Allergy Organization estimates that between five and 30 per cent of the global paediatric population have eczema (WAO 2014).

It is generally accepted that eczema arises from a complex interaction between genes and environmental factors — such as skin care regimes

(Sohn et al 2011, National Eczema Society 2021, Allergy UK 2021). Research by Lavender et al (2009), Cooke et al (2011), Irvin & Miller (2015), Mutic et al (2017) and Cooke et al (2018) has specifically linked skin-cleansing regimes with the recent rise in babyhood eczema. Taking all this into consideration, it is possible that skin-cleansing practices adopted to date have not been effective or appropriate for newborn skin.

Dizon et al (2010), Garcia Bartels et al (2012) and Lavender et al (2012, 2013) all conducted randomised controlled trials comparing the use of specified cleansing products versus water alone on newborn skin. All these researchers found that there was no evidence of any difference between the use of the cleansing product and water alone in terms of the outcome measurements used in the trial — transepidermal water loss (TEWL); skin hydration levels; skin surface pH and/or the general appearance of the skin.

Lavender et al (2012) found that mothers using baby wipes were less likely to report nappy rash than mothers using cotton wool and water. These findings, and the conclusions of a recent systematic review (Cooke et al 2018), have been widely interpreted to suggest that parents could safely choose to use a cleansing product on their newborn's skin without being concerned that it is likely to cause more harm than if they used water alone. Recommendations from a European Roundtable Meeting on Best Practice Health Infant Skin Care (Blume-Peytavi et al 2016) further support this interpretation.

Further research into safe and effective newborn skin-cleansing methods, and the development of clear, up-to-date and evidence-based guidance is clearly needed. Alongside this, knowledge of current skin-cleansing practices would enable health professionals to identify how best to support and guide parents moving forwards.

Review

Aims

To systematically review literature investigating current knowledge around parents' and carers' newborn skin-cleansing practices in order to describe these practices and their underlying rationales.

Design

A systematic literature review.

Search methods

A search strategy was developed using the PICO format (Richardson et al 1995). Synonyms were developed for the key terms 'newborn', 'skincare' and 'parent', and these were formulated into search strings (see Figure 1). This was an iterative process in which new terms were added if they were observed in retrieved literature, and the search was run several times until no new synonyms appeared.

Searches were conducted in February 2020 and repeated in April 2021 using CINAHL, MEDLINE and the British Nursing Index, all databases relevant to healthcare literature.

Figure 1. Search strings.

(newborn* OR baby OR babies OR infant* OR neonate*) AND (skincare OR "skin care" OR bath* OR "skin clean*" OR "skin hygiene" OR "wash") AND (parent* OR mother* OR father* OR caregiver* OR woman* OR women* OR midwi* OR healthcare provider OR healthcare practitioner OR nurs*)

Our search strategy followed that outlined by Moher et al (2009). Inclusion and exclusion criteria were developed to ensure that selected studies addressed the focus of the review, and to enable our findings to be replicated (see Table 1).

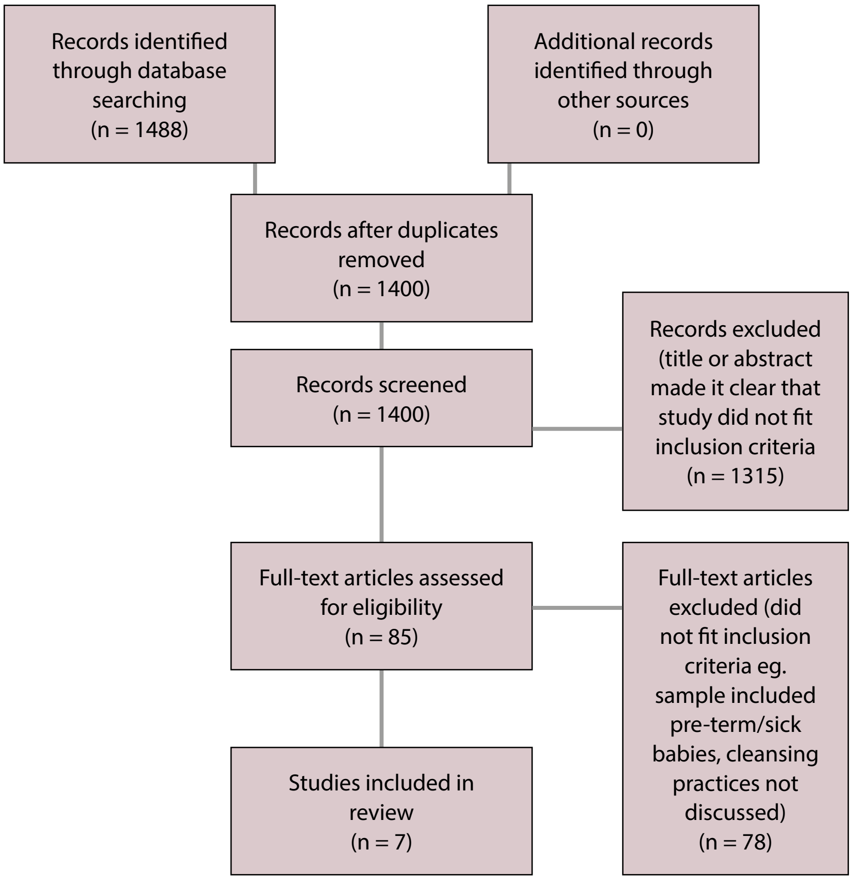
Table 1. Inclusion and exclusion criteria

Inclusion	Exclusion	Rationale
Full-text qualitative and quantitative primary research papers	Secondary research papers or paper abstracts	Purpose of review was to consider findings of qualitative and quantitative primary research which can only be ascertained through access to the full paper
Studies focused on newborn skin-cleansing practices and their rationales	Studies examining effectiveness of specific skin-cleansing regime or skin-cleansing product or other aspect of skin care	Studies which have objectives that match objectives for this review will provide required data for analysis
Studies with newborn skin-cleansing practices, and their rationales, emerging as discreet theme	Studies with brief, incidental findings on skin-cleansing	There has to be enough information which focuses on the objectives of this review in order to provide data for analysis
Studies focused on healthy, term babies under two months of age	Sick, premature or older babies	Skin-cleansing methods for sick, premature or older babies are likely to be different from skin-cleansing methods for healthy, term newborns
English language	Papers written in any other language	No funding available for translation
Research from 2009 to present day	Research which took place prior to 2009	Aim of the review was to explore recent research (within the last 10 years) in order to gain insight into current newborn skin-cleansing practices

After duplicates were removed, a title and abstract screen was carried out against the inclusion and exclusion criteria. This was followed by a detailed full-text review of remaining studies. This process is outlined in the PRISMA flowchart (Figure 2).

Search outcomes

Figure 2: PRISMA flowchart.



Source: Moher et al

Quality appraisal

Retrieved eligible literature was appraised by both authors using the MMAT developed by Hong et al (2018), which was specifically designed for mixed methods systematic reviews. Although the MMAT was not designed to provide 'scores', a basic sensitivity analysis was performed in order to rate the studies according to their perceived quality, trustworthiness and relevance to the systematic review. This involved evaluating each study as 'very good', 'good', 'fair' and 'poor' through consideration and comparison of the replies to the tool's prompt questions (Hong et al 2018). A summary of the assessment of each study is presented in Table 2.

Data abstraction and synthesis

Using a data extraction form, relevant results from retrieved studies were extracted and reviewed by both authors. A basic meta-integration process, similar to that proposed by Frantzen & Fetters (2015), was then performed; the limited quantitative findings on the topics of timing of initial cleansing after birth, frequency of cleansing, vernix removal and substances used for cleansing were reported within the relevant qualitative theme.

Qualitative themes were generated through a process of thematic analysis that followed the first two stages outlined by Thomas & Harden (2008); the relevant parts of the results and discussion sections of each included study were read and reread several times and then coded inductively, line by line. These codes were then grouped together to form descriptive themes. Thomas & Harden's third stage (the generation of analytical themes) was not felt to be appropriate in the context of a descriptive, integrative systematic mixed methods review.

Results

Study characteristics

The seven included studies comprised three mixed methods, three qualitative and one quantitative study. A broad geographical area was covered, including the United Kingdom (UK) (one study), United States of America (USA) (one study), Jordan (one study), Uganda (one study), Ethiopia, Nigeria and Tanzania (one study), Bangladesh (one study) and India (one study).

Approximately 1774 participants were involved (Adejuyigbe et al (2015) did not give an exact sample size). Participants included new mothers, mothers with young children, grandmothers, fathers, midwives/Traditional Birth Attendants (TBAs), and health visitors/health care workers. Only one study (Lavender et al 2009), was solely focused on skin-cleansing routines; all other studies considered a range of newborn skin or other care practices. Table 2 provides an overview of each included study.

Study quality

All details are contained in Table 2.

Table 2. Study characteristics

Title, author, year and country of setting	Aims of study relevant to this review	Study design, sample size, participants	Data collection method, data analysis method	Findings relevant to this review	Study quality based on MMAT
Newborn care practices of mothers in Arab societies: implication for infant welfare Jordan Arabiat et al (2019)	To identify the cultural variations in newborn care practices	Qualitative exploratory design 37 primiparous /multiparous mothers	Focus groups	**Immediate care of the newborn:** bathing the baby straight after birth was the norm, using water and soap Many mothers described applying salt to the newborn's skin before bathing. The salt was seen to clean and purify the skin from the birthing process	*'Very good'* Positive responses to all MMAT prompt questions, including: • clearly stated research question • appropriate data collection method • interpretation of findings sufficiently substantiated by data provided
Skin care practices in newborn nurseries and mother-baby units in Maryland USA Khalifian et al (2017)	To survey common skin care practices	Quantitative study 30 nurse managers of 30 newborn nurseries or mother-baby units throughout Maryland	Survey containing mainly multiple choice questions on newborn skin care	80% respondents bathed babies within six hours of birth 53% respondents reported using a mild liquid cleanser with no soap or additives 23% (n=7) respondent nurseries/units removed all vernix from newborns, 17% (n=5) removed blood stained vernix only, 53% (n=16) removed easily accessible vernix and 7% (n=2) had no formal policy on vernix removal	*'Good'* Positive responses to all but one of the MMAT prompt questions: • did not provide information on whether or not their survey had been pre-tested
"Why not bathe the baby today?": A qualitative study of thermal care beliefs and practices in four African sites. Ethiopia, Nigeria (two regions), Tanzania Adejuyigbe et al (2015)	To report thermal care practices	Qualitative design Approximately 33 recent mothers, grandmothers, fathers, health workers and birth attendants	Use of newborn care narratives on personal experiences, observations of bathing, in-depth interviews on normative behaviours with new mothers, fathers, grandmothers, health workers and birth attendants	Bathing the newborn after birth was delayed for several hours or until next day for most Tanzanian mothers and some Ethiopian mothers The newborn was bathed soon after birth in both Nigerian sites In Nigeria, the main reason for early bathing was a belief that the baby would 'smell bad' if not bathed quickly In Tanzania and Ethiopia, delayed bathing appeared to be a new practice promoted by health care workers due to fear of cold. Many mothers still wanted their baby to be bathed soon after birth In all sites, there was a desire for the baby to be 'clean and presentable to visitors', which could only be achieved by early bathing In all sites, vernix was described as 'dirty' and so removed using oil and bathing or rubbing In all sites, newborns were bathed between two and five times per day. Bathing was seen as essential to the health of the newborn and important in order to keep them clean	*'Very good'* Positive responses to all MMAT prompt questions, including: • clearly stated research question • appropriate data collection method • interpretation of findings sufficiently substantiated by data provided

Newborn care practices among mother-infant dyads in urban Uganda Uganda Kayom et al (2015)	To describe newborn care practices among mothers	Community-based cross-sectional descriptive study using mixed methods 338 primiparous /multiparous mothers	Quantitative, pre-tested questionnaire Focus group discussion (FGD) with nine participants	60% participant babies were not bathed within 24 hours of birth 90% babies were bathed two or more times per day 61% (n=205) babies were bathed with herbal medicine FGD demonstrated that herbal medicine was believed to treat rashes, colic and give luck Some mothers used soap for bathing their newborn	*'Good'* Positive responses to all but one of the MMAT prompt questions: • lack of information about non-responders
Neonatal care practices in a tribal community of Odisha, India: a cultural perspective India Pati et al (2014)	To gain an understanding of neonatal care practices in order to develop strategies for improving neonatal survival in tribal Odisha	Exploratory, qualitative study at household and community levels Quantitative data was also collected 55 mothers with a baby aged 60 days or less; five traditional birth attendants (TBAs)	Interviews on pre-decided themes Numerical data on newborn cleansing practices carried out but method was not stated	86% (n=30) babies born at home and 85% babies born at hospital had vernix removed 20% (n=11) babies were bathed within 30 minutes of birth, 35% (n=19) within 30 to 60 minutes and 46% (n=25) after 60 minutes Vernix removal and early bathing were seen as cleaning the baby and 'keeping germs away' after the polluting process of birth. TBAs and mothers held these beliefs Bathing was seen to have a social element: mothers were concerned that their baby would be disapproved of if it was not bathed and cleaned after birth Soap and/or massage with mustard oil and turmeric used to remove vernix	*'Poor'* Six negative responses to the MMAT prompt questions, in particular: • study presented as qualitative although many data presented are quantitative. • lack of information about how quantitative data were collected and analysed
A qualitative study exploring women's and health professionals' views of newborn bathing practices UK Lavender et al (2009)	To explore women's, midwives' and health visitors' views of skincare routines and the use of baby skin care products	Qualitative design using interpretive framework Purposive sample of 56 participants who had direct contact with current baby bathing practices: 26 primiparous /multiparous women (antenatal and postnatal); 20 midwives and 10 health visitors. All from a maternity hospital in north-west England	In-depth, semi-structured interviews	Central theme was **'informed uncertainty':** participants received information from multiple sources, but inconsistency between them raised doubts about best practice Other themes were: **Mirage of evidence:** midwives said that their practice was based on evidence, although they were unable to cite this evidence. Women reported trusting advice given by health professionals, especially first-time mothers. Second-time (and more) mothers often reverted to 'trial and error' **Toeing the party line:** participants believed that 'best practice' was using water only. Many admitted to not adhering to this in reality. Ultimate decision making was influenced more by personal beliefs and experiences **Influential marketing:** health professionals believed they should discourage use of baby bath products. Women believed products marketed for babies were safe, and often felt water may not be an adequate cleanser. They were likely to try a product if a friend or relative recommended it	*'Very good'* Positive responses to all MMAT prompt questions, including: • clearly stated research question • appropriate data collection method • interpretation of findings sufficiently substantiated by data provided

Newborn care practices among slum dwellers in Dhaka, Bangladesh: a quantitative and qualitative exploratory study Bangladesh Moran (2009)	To describe newborn care practices	Mixed methods study Quantitative arm of the study followed a two-stage cluster design and included 600 women with a live birth in the last year and 600 women with a child under five 36 pregnant and postnatal primiparous / multiparous women took part in the qualitative arm of the study	Baseline survey measuring selected newborn care practices In-depth, semi-structured interviews designed to further explore newborn care practices	86% of participants reported bathing their newborn within the first two days of life Qualitative data under the theme **'bathing and cleaning baby'** showed that participants believed blood and other body fluids are unclean. The newborn is therefore not seen to be clean and pure until bathed Vernix was also seen as dirty and unclean, and so was removed Newborns were bathed with soap and water, or Dettol and water, between two and seven times per day Some women reported using raw turmeric and grass in their newborn's bath Women tried to collect clean water to bathe their babies	*'Good'* Positive responses to all but two of the MMAT response questions: • lack of information about non-responders • no information provided on how survey data were analysed

Themes

The themes obtained following the data abstraction and synthesis are presented in Table 3, and then discussed in detail.

Table 3. Themes identified

Theme/paper	Arabiat et al (2019)	Khalifian et al (2017)	Adejuyigbe et al (2015)	Kayom et al (2015)	Pati et al (2014)	Lavender et al (2009)	Moran (2009)
Bathing after birth	✔	✔	✔	✔	✔		✔
Vernix removal	✔	✔	✔		✔		✔
Frequency of cleansing			✔	✔			✔
Substances used for bathing/cleansing	✔	✔	✔	✔	✔	✔	✔
Beliefs and culture		✔	✔	✔	✔	✔	

Bathing after birth

Bathing after birth was a focus in six out of the seven studies. The data suggest that the majority of babies born within the study areas in Nigeria, Jordan, the USA, India and Bangladesh are bathed within 24 to 48 hours of birth, with the most common timeframe being within six hours (Moran 2009, Pati et al 2014, Adejuyigbe et al 2015, Khalifian et al 2017, Arabiat et al 2019). Just over half of babies born within the Ugandan study area were bathed after the first 24 hours of life, but exactly when is not stated (Kayom et al 2015).

However, it is important to note that some of the sample sizes were small — fewer than 60 participants per study (Pati et al 2014, Arabiat et al 2015, Adejuyigbe et al 2015). Therefore, the findings may not be transferable to the wider populations.

Khalifian et al (2017) surveyed the practices of 30 newborn nurseries across Maryland, USA. Although the authors state that the timing of the first bath is based on the newborn's temperature stability and the cultural preferences of the parents, it is not clear where this information was obtained as it is not included in the survey findings.

The remaining studies all found that parents and caregivers held strong beliefs that early bathing is required in order to clean the baby after the perceived polluting process of birth, and to ensure that the baby is 'socially acceptable' (Moran 2009, Pati et al 2014, Kayom et al 2015, Adejuyigbe et al 2015, Arabiat et al 2019):

'It's filthy to leave the baby without a bath …' (Arabiat et al 2019:262).

'no-one can take the baby on the lap if the baby has delivery blood on its body …' (Moran 2009:6).

A preference for early bathing persisted in some places despite awareness of the WHO recommendation, which is not to bathe babies in the first 24 hours after birth to mitigate the risk of hypothermia (WHO 2013).

'I actually wanted my baby to be bathed immediately … the baby comes out with something dirty, he has to be bathed ... these women [at the health centre] refused to bathe my baby immediately ...' (Adejuyigbe et al 2015:4).

In each of the studies by Moran (2009), Pati et al (2014), Adejuyigbe et al (2015), Kayom et al (2015) and Arabiat et al (2019) many parents and caregivers were reported to either be unaware of the risk of hypothermia, or felt that it was not a real risk because warm water was used for bathing, or felt that the risk was less important than ensuring that delivery fluids were removed from the baby's body as quickly as possible.

Vernix removal

Vernix removal after birth was reported in five studies, and the practice appears to be widespread among these study participants. Moran (2009), Pati et al (2014), Adejuyigbe et al (2015) and Arabiat et al (2019) all report that vernix removal is routinely carried out during the first bath after delivery. Vernix is seen as part of the 'delivery fluids' or *'product from the mother's womb'* (Moran 2009:6), a 'dirty' substance which must be removed:

'Those [vernix] *are the filthy things the baby gets from the mother's womb …'* (Moran 2009:6).

Khalifian et al (2017), the authors of the only study from a high-income country relevant to this theme, discuss vernix removal separately from bathing and it is clear that the majority of participants had a policy of active removal. However, the process of achieving vernix removal is not enlarged upon.

Adejuyibge et al (2015) discovered that among their Tanzanian, Ethiopian and Nigerian study participants, vernix was linked to certain unfavourable maternal behaviours:

'… if a woman drinks milk kept in a dirty container or if she eats fatty meat ... this white thing would stick on the baby's skin … [then that mother would be] *slurred … and ask how dare she eat and drink those foods … negligent …'* (Adejuyibge et al 2015:4).

In these countries, the presence of vernix was also suggestive of sexual intercourse having taken place during pregnancy — another behaviour viewed unfavourably (Adejuyibge et al 2015).

Frequency of bathing

Frequency of bathing was a focus in three studies and ranged between two and seven times per week for newborns within the study population in Bangladesh (Moran 2009) to more than twice per day for the majority of babies in Tanzania, Ethiopia, Nigeria and Uganda (Kayom et al 2015, Adejuyigbe et al 2015).

Moran (2009) described some caregivers explaining that concerns about causing hypothermia prevented caregivers from bathing newborns more frequently. However, as one study participant emphasised, this was only seen to be a risk if the baby was not bathed 'correctly':

'There are some women who get the baby cold during the bathing. They don't understand how to bathe [a newborn baby] *properly …'* (Moran 2009:7).

Only Adejuyigbe et al (2015) provided any rationale for the frequency of cleansing newborns, describing study participants as believing that frequent bathing is essential for the baby's general cleanliness, health and comfort, and to look neat and presentable.

Substances used for bathing/cleansing

Substances used for bathing and/or cleansing newborns were a focus of all seven included studies. A wide variety of substances were described as used; newborns in the study populations in the USA and the UK were cleansed with either water alone, or water plus baby wipes or liquid cleanser (Lavender et al 2009, Khalifian et al 2017).

Some study participants in Uganda, India and Bangladesh used soap for cleansing their newborns; other study participants in Bangladesh bathed their newborns in a disinfectant such as 'Dettol' (Moran 2009, Pati et al 2014, Kayom et al 2015).

Kayom et al (2015) describe 'herbal medicine' made from herbs, leaves, roots and tree bark being used for bathing over half the babies in Uganda. Similarly, substances such as turmeric and grass were used by some study participants in Bangladesh and India (Moran 2009, Pati et al 2014). Some studies reported oils being used for cleansing (Pati et al 2014, Adejuyigbe et al 2015, Arabiat et al 2019).

Arabiat et al (2019) found that many study participants used salt as a cleanser for their newborn's skin, and that this was either applied to the newborn's skin directly or added to the bath water.

Regardless of the substance(s) used to cleanse the newborn, study participants in Tanzania, Ethiopia, Nigeria, Uganda, India and Bangladesh firmly believed that whatever they were using was appropriate and effective for the purpose. No caregiver was cited as being uncertain, or concerned about, what substance(s) to use for cleansing their newborn or as questioning whether to use substances at all (Moran 2009, Pati et al 2014, Adejuyigbe et al 2015, Kayom et al 2015, Arabiat et al 2019).

Conversely, participants in the UK-based study by Lavender et al (2009) were often very uncertain what to use to best cleanse newborn skin and were not aware of any local or national guidelines, or research, with which to inform their decisions. Many believed that they 'should' only use water, but that, in reality, it was not always an effective cleanser:

'...you could be there for ages with water … it can almost feel like it's not clean enough' (Lavender et al 2009:11).

Beliefs and culture

References to belief systems and culture occur in five out of the seven studies. It is evident that, within the study populations in Uganda, Ethiopia, Nigeria, Tanzania, India and Bangladesh, newborn cleansing practices are rooted in tradition and culture (Pati et al 2014, Adejuyigbe et al 2015, Kayom et al 2015); each of these studies uses phrases such as 'deep-rooted beliefs', 'rituals' and 'cultural practices' when explaining the rationales for each practice or behaviour.

Although Lavender et al (2009) do not specifically discuss cultural practices, the influence of a common belief system is also evident among their UK participants. All participants, health care professionals and mothers, professed a belief that using just water was viewed as the best or preferred way to cleanse the newborn.

Health care professionals believed that this was evidence-based information, but parents sometimes professed discomfort around accepting their advice. Decisions about alternative methods of cleansing — the use of wash products and/or baby wipes — were made by following previous personal and/or professional experience or the advice of trusted others.

Although the study by Lavender et al (2009) took place 11 years ago, in just one hospital in the UK, and involved 56 participants, it does indicate that the influence of cultural norms on skin-cleansing practices may be evident in high-income, as well as lower-income, countries, and that cultural norms can be more powerful than advice that is believed to be evidence-based.

Discussion

This is the first systematic literature review to date on the topic of newborn skin-cleansing practices around the world. However, there is comparatively little information available on this topic and the research evidence is mainly over five years old, concentrated in small geographical pockets and not always of high quality.

This systematic literature review provided an opportunity to consider the available research evidence collectively, and it highlights common themes: a wide range of newborn skin-cleansing practices exist across the countries and cultures studied, and the rationales for these practices are deeply rooted in the common belief systems and traditional practices of the study area.

There is evidence within the literature included in this review to suggest that some participants in some of the study areas may have been aware of official guidance and/or research evidence on the subject of newborn skin cleansing, but that traditional practices and social norms overrode this guidance.

For participants in India, Bangladesh and the four included African countries, the evidence contained in this review suggests that a practice being the cultural norm is reason enough to adopt it without question, despite many of the practices uncovered lacking the support of an evidence base. Participants in the UK were also influenced by cultural norms and appeared conflicted over whether to follow these or professional advice.

Given that newborn skin care practices appear to be influenced by deeply embedded beliefs and practices, they may be hard to change. Therefore, it is reasonable to pose the question of how change could be effected if necessary, in the light of a robust evidence base around optimal newborn skin care practices.

Limitations

First, only a small number of studies, of varying quality, were eligible for inclusion in this systematic review. Some of the study populations were small, and no information on practices in some areas of the world, such as continental Europe, Australia and South America were identified. Further, not all included studies were deemed to be of high quality which may affect the overall rigour of the findings of this review.

Second, the critical appraisal tool selected and utilised did not ask as many trigger questions as tools developed by, for example, CASP (2018). However, this limitation is mitigated by the fact that the MMAT is specifically designed for the critical appraisal process of mixed methods systematic reviews. As such, it allows for the equal treatment of all included studies and also facilitates a collective presentation and easy comparison of the appraisal of each included study.

Lastly, as ‘grey literature’ is outside the conventions of a systematic literature review, it has not been included. However, it is acknowledged that, by not including ‘grey literature’, the opportunity to examine other perspectives on the topic was not provided.

Conclusion

The findings of this systematic literature review suggest that deep-rooted cultural influences drive a wide range of practices in relation to newborn skin care. Parents and caregivers appear often unwilling, or not entirely comfortable, to break away from these practices and follow guidance from authorities such as WHO (2013). Therefore, in addition to further research into optimal, safe and effective newborn skin-cleansing methods, there is a call for new, large-scale, research to be undertaken which addresses both the skin-cleansing practices of parents with newborn babies in selected geographical areas, and how decisions about these practices are influenced.

The resulting knowledge should assist both with determining how these practices might be influenced, if they are shown not to be optimal, and with planning effective dissemination of appropriate, up-to-date, evidence-based information.

Conflicts of interest

The authors declare no conflicts of interest.

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Factors contributing towards women booking late for antenatal care in the UK

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ABSTRACT

Background: In order to improve outcomes for mothers and babies, and to fully utilise the antenatal screening programmes in the United Kingdom (UK), women are advised to access antenatal care prior to 10 weeks' gestation. This study aims to identify reasons as to why women may book late for antenatal care.

Methods: A structured systematic literature search was undertaken using a PICO framework to identify research papers that focused on barriers leading to late booking for antenatal care in the UK. Inclusion criteria were articles published in English between January 2001 and October 2020. Electronic databases (PubMed, CINAHL, Cochrane Database of Systematic Reviews, NICE, Internurse, Google Scholar, Scopus, ScienceDirect and OpenGrey) were searched using a combination of terms such as 'antenatal', 'late booking', 'barriers' and 'UK'. Articles were critically assessed for inclusion and 10 per cent of these were then independently screened by a second reviewer to ensure validity. Thematic analysis was then undertaken to identify the most commonly occurring themes.

Ethical approval: Ethical approval was not required as all literature utilised was available in the public domain.

Findings: The database search identified 1964 papers published between 2001–2020. After removing duplicates, 1642 were of potential interest. Following screening of the title and abstract, 1624 were excluded because of lack of specificity to the study criteria. The full texts of 18 papers were assessed and a further six excluded, resulting in 12 papers for critical review. From these, 12 papers with10 common themes were identified. These were social/lifestyle factors, ethnicity, awareness/acceptance of pregnancy, unaware of importance/need to book early, language barriers and previous antenatal care experience. Other issues, such as maternal age, religious/cultural beliefs, service provider issues and multiparity were also identified.

Discussion and conclusions: Factors leading to late booking were complex, with many of the themes being intrinsically linked. Difficult social circumstances, lack of support, judgement by care providers and language barriers were strongly associated with women not being able to, or not choosing to, access care. Improved accessibility to services, provision of childcare, the use of interpreters and community engagement projects are recommended to improve early access to antenatal care.

Keywords: antenatal care, late booking, barriers, UK, Evidence Based Midwifery

Introduction

The need to access early antenatal care has long been identified as an important factor in reducing fetal and maternal mortality and improving outcomes for both mother and baby (Knight et al 2018). The World Health Organization (WHO) (2017) defines early antenatal care as presentation for maternity care at less than 12 weeks' gestation. However, both Public Health England (PHE) (2019) and the National Institute for Health and Care Excellence (NICE) (2019) recommend that women access antenatal care prior to 10 weeks' gestation in order to fully utilise antenatal screening programmes.

Despite the evidence supporting early booking, there are still areas of the UK where the percentage of women having their booking bloods taken prior to 10 weeks' gestation is less than 25 per cent, with many maternity providers not being able to meet the 75 per cent achievable target set by PHE (2020).

A review of previous literature (Chandler 2002, Nepal et al 2011, Kyei-Nimakoh et al 2017) found that many of the studies which focus on delayed access to maternity care have been undertaken in the United States of America (USA) or in Africa. Many of these studies have provided high-quality evidence in relation to the barriers and facilitators for engaging with maternity services. However, the main barriers faced by women in African countries, such as availability of health care facilities, lack/cost of transportation, limited access to information and cultural beliefs (Kyei-Nimakoh et al 2017), are likely to be significantly different to the barriers experienced by women living in the USA. It is therefore not always possible to apply the findings from one country to another due to the differing social and economic structures present within each country. However, any religious or cultural beliefs identified as barriers are still likely to apply even if women change the country in which they reside (Chinouya & Madziva 2019). It is therefore important that these factors are considered when reviewing evidence from multiple countries.

Much of the available literature consisted of a mixture of quantitative studies, in which maternity data from the country of interest was reviewed to identify trends, and quantitative studies, where women were interviewed to obtain their views on issues associated with late booking.

Although quantitative studies had the advantage of providing a large subject pool and subsequent dataset, several articles reported issues with reliability of results due to the comparability and completeness of extracted data. This was mainly because the information was extracted from various IT systems which may have not collected data in the same format; also due to reliance on health care professionals completing all documentation in full (Baker & Rajasingam 2012).

Qualitative literature showed more in-depth views of the actual logistical and emotional issues that women face when choosing to access maternity care. However, studies of this type tended to consist of only a small sample size, making it more difficult to identify trends.

Internationally, the most frequently reported obstacles to obtaining care were, ethnicity, language barriers, being from a socially disadvantaged background and acceptance of pregnancy (Alderliesten et al 2007, Downe et al 2009, Heaman et al 2014). Although the cost of accessing care was a reoccurring finding in many countries, this is not generally the case for women accessing maternity care in the UK, due to the availability of free health care.

Supply-side barriers to accessing care appear to be well documented for studies undertaken in African and Indonesian countries, but less so in those undertaken in Europe and North America. This may be due to the belief that women in countries with a large, well-established infrastructure for maternity care do not experience issues with availability of care. However, this may not be the case, as highlighted by Hatherall et al (2016), whose study included interviews from maternity care providers, as well as pregnant women, to gain insight into the potential issues from both sides of the care experience. The results highlighted the potential difficulties women experience when trying to initiate the first antenatal visit, and differing advice from health care professionals.

Studies reviewing the issues faced by women booking for maternity care in the UK are few, and range in date from the 1980s to 2020. As many of these studies were undertaken over 10 years ago, they may no longer represent the current demographic of the country. This review will therefore consolidate the most recent literature in order to correctly identify any barriers that pregnant women face when accessing antenatal care in the UK. These findings could potentially be used by maternity providers to help inform future care planning.

Research methodology

Search strategy

To systematically capture the broadest possible collection of articles, a framework was used to categorise relevant search terms by population of interest, intervention, outcome and country of interest.

A Medical Sub-Headings (MeSH) search was also undertaken to include the terms, pregnant woman, pregnant women, prenatal care, pregnancy, antenatal care, maternal care patterns, access to health care, accessibility of health care, accessibility of health services, patient engagement and health care utilisation. The search terms were then reviewed by the second author and reviewed by a colleague independent of the review.

Search databases were selected to include both subject-specific and general databases. These included PubMed, CINAHL Plus, Cochrane, NICE, Internurse, Google Scholar, Scopus and ScienceDirect. OpenGrey was also used to obtain any grey literature which may be relevant to the review. The specific search terms and Boolean operators used are shown in Appendix 1; these were entered into the advanced search builder in databases such as PubMed, CINAHL, Cochrane and Scopus. The databases chosen for the search were recommended by our university library.

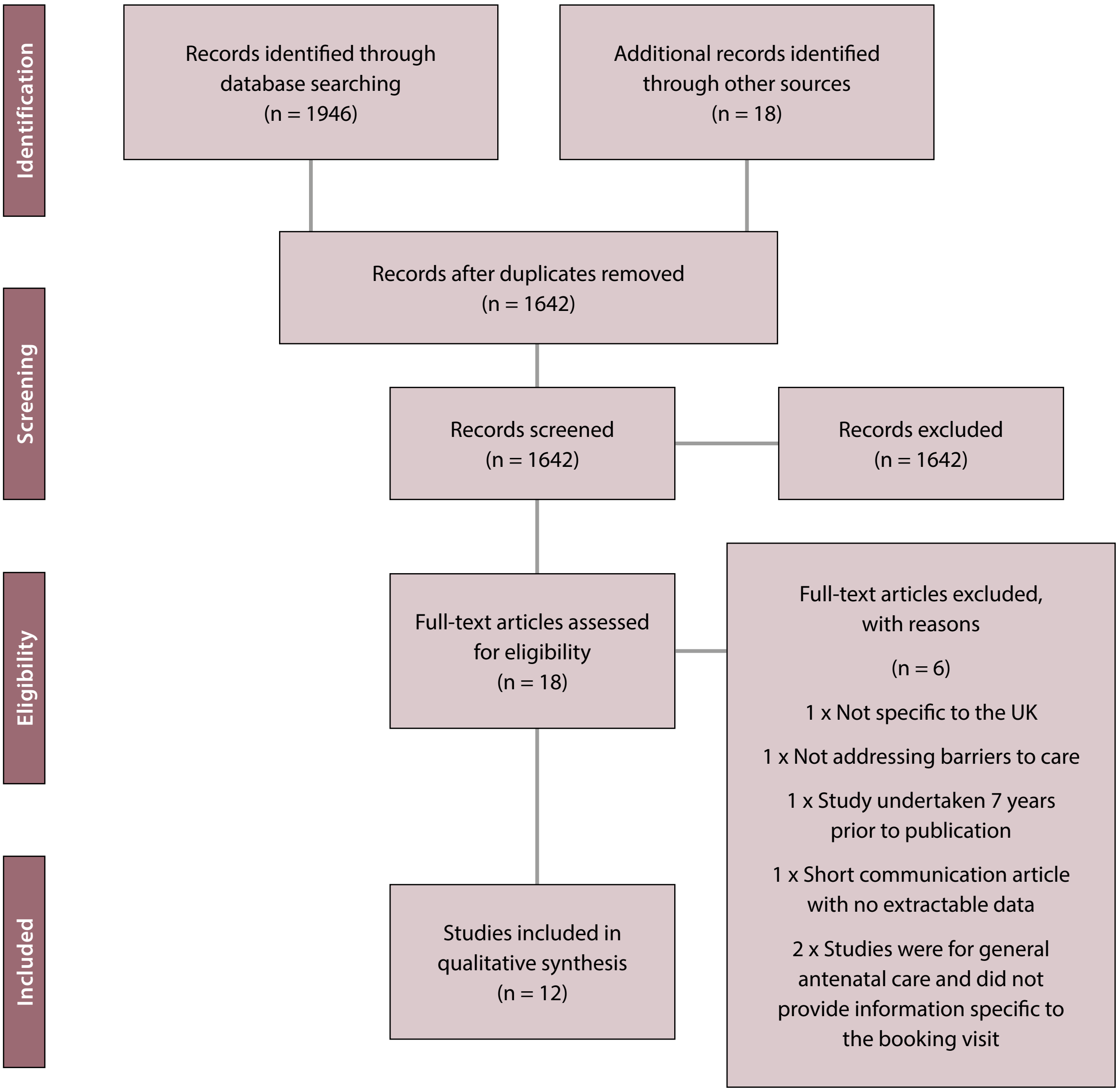
Limits were applied to the search results to include only 'full text' articles published in English since 2001 to October 2020. The strategy and subsequent search were then undertaken by the first author following consultation with the second author. The second author also independently conducted the search using the agreed search terms using one of the chosen databases to further ensure the validity and reliability of the search.

Selection of eligible papers

Article selection was guided using a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart (Moher et al 2009), with initial results screened via title and abstract, and remaining articles being read in their entirety.

Those which did not match the study specifications of 1) pregnant women, 2) initial access to antenatal care, 3) late booking, and 4) UK, were removed. The first author reviewed all the articles, while the second author independently screened the titles and abstracts of 10 per cent of the articles and performed a critical assessment for validity. Disagreements were resolved by discussion.

Figure 1. PRISMA flow diagram showing the process of study selection.



Source: Mother et al 2009.

Data extraction and analysis

Assessment of the quality and validity of articles was undertaken using the relevant Critical Appraisal Skills Programme (CASP) (2018) and Joanna Briggs Institute (JBI) (2020) checklists associated with each study type.

All articles were then individually analysed and a data table created to summarise findings (see Table 1). This allowed for direct comparison of factors such as study type, aims and sample size, as well as overall key findings.

Qualitative data were then gathered from each paper in turn, using thematic analysis, and emerging trends and themes were used to create categories. Finally, data from quantitative studies were extracted and assigned to the most appropriate category.

Table 1. Summary of the main findings from reviewed articles

Reference	Study design	Study size	Aim	Main findings/risk factors for late booking
McDonald et al (2020)	Retrospective cross-sectional audit	122,275 pregnant women	To assess the maternal characteristics that are most likely to result in late booking	• High parity • Living in deprived areas • Black or minority ethnicity • English not first language • Lack of social support • Unemployment • Single parent • Jewish religion • Maternal age <20 • Service provider delays
Barber et al (2017)	Retrospective cohort study	619,502 pregnant women	To investigate the interrelationship between gestation at booking, BMI and other socioeconomic factors	• Raised BMI • Unemployed/still in education • Deprivation • High IMD score • Teenage pregnancy • Increased parity
Chinouya & Madziva (2019)	Qualitative semi-structured interviews	23 women	Social and cultural issues affecting Black African women and why they may book late	• Immigration status • Previous negative experience of antenatal care • Unaware of need to book early • Cultural beliefs
Hatherall et al (2016)	Qualitative interviews and focus groups	Twenty-one individual interviews and six focus groups (four groups of women and two groups of health professionals)	Identify issues which result in late booking	• Early booking not seen as important • Previous experience of antenatal care • Difficulties/issues accessing care • Issues if not GP registered • Language barriers • Need time to accept pregnancy • Loss of control of pregnancy
Kapaya et al (2015)	Retrospective cross-sectional survey followed by a questionnaire-based prospective survey	59,487 records of pregnant women identified via a trust database Questionnaire completed by 158 pregnant women		• Maternal age <20 • Increased parity • Ethnicity • Unemployed • High IMD score • Single parents • Lower levels of social support

Haddrill et al (2014)	Qualitative semi-structured interviews	27 women	Identify why women access care late	• Not aware of pregnancy • Misdiagnosed pregnancy • Worried about being judged • Difficult social circumstances • Care only needed if feeling unwell • Unsure if to continue with pregnancy • Not wanting antenatal screening due to religious beliefs • Delay as worried will be pressured into a termination • Issues with postal appointment letters • Language difficulties in challenging appointment delays • Loss of control of pregnancy
Cresswell et al (2013)	Cross-sectional study	20,135 pregnant women	Identify predictors of late access to AN care	• Ethnicity • Parity ≥ 4 • Living in temporary accommodation • Age below 20 • Non-UK-born • Non-English-speaking
Tariq et al (2012)	Retrospective cohort study	1709 pregnant women	To review the association between ethnicity and late antenatal booking among women with HIV	• HIV-positive status of mother • African or other Black ethnicity
Baker & Rajasingam (2012)	Retrospective cohort study	5629 pregnant women	Determine proportion of women booking late and their demographics	• 15 and 19 years of age • Parity > 4 • Ethnicity
Callaghan et al (2011)	Qualitative semi-structured in-depth interviews	20 women	To better understand the social circumstances of women who book late for antenatal care	• Non-acceptance of pregnancy • Unaware of pregnancy • Unaware of importance of booking early • Difficult social circumstances • Previous negative experiences of antenatal care • Issues accessing care/postal issues • Language difficulties
Raleigh et al (2010)	Retrospective cross-sectional study	26,325 women	To explore the social and ethnic inequalities of maternity care experiences	• Women from minority ethnicities • Single women • Those completing education aged ≤ 16
Rowe et al (2008)	Postal survey questionnaire	839 women	To identify social or ethnic differences in access to antenatal care	• Born outside the UK • No husband or partner • Ethnicity

Ethical approval

Ethical approval was not required as all literature utilised was available in the public domain.

Findings

Initial searches yielded 1964 articles and, following removal of duplicates, 1642 articles remained. Titles and abstracts were then reviewed, leaving 18 articles which were assessed in full and compared to the study specifications. Of these, six did not meet the specifications, leaving 12 articles for final synthesis (see Figure 1).

A total of 855,992 participants were recruited to the 12 studies, with the majority being pregnant women or new mothers, and a small number being health service employees or non-pregnant women from underrepresented community groups.

The initial review of each article was summarised and, following thematic analysis, 10 key themes were identified. All studies were then re-assessed to determine the frequency at which themes occurred (see Figure 2 and Table 2).

Themes identified

Our findings identified several barriers/challenges that pregnant women face when accessing antenatal care:

- Multiparity
- Maternal age
- Awareness/acceptance of pregnancy
- Social/lifestyle factors
- Ethnicity
- Language barriers
- Religious/cultural factors
- Service provider issues
- Previous experience of antenatal care
- Unaware of importance/need to book early

Multiparity

Increased parity was directly identified as a risk factor for late booking (Kapaya et al 2015, Barber et al 2017), with highest levels of significance among women with four or more children (Baker & Rajasingam 2012, Cresswell et al 2013, McDonald et al 2020).

Maternal age

Women aged <20 were more likely to present late for care than women of any other age group, with chances of late booking reducing as age increased (Baker & Rajasingam 2012, Cresswell et al 2013, Kapaya et al 2015, Barber et al 2017, McDonald et al 2020).

Awareness/acceptance of pregnancy

Needing time to come to terms with pregnancy, especially if unexpected/unplanned (Haddrill et al 2014, Hatherall et al 2016), or consideration of ending the pregnancy (Callaghan et al 2011, Haddrill et al 2014, Chinouya & Madziva 2019), led to delays in accessing care.

Care was also delayed in women who did not know/recognise the signs pregnancy; were not expecting to be pregnant due to medical issues; or believed they were too old for pregnancy (Callaghan et al 2011, Haddrill et al 2014).

Social/lifestyle factors

Late booking was most significant amongst women with social service involvement (Callaghan et al 2011, Haddrill et al 2014), those living in temporary accommodation (Cresswell et al 2013, Haddrill et al 2014), those with no social/family support (Raleigh et al 2010, Callaghan et al 2011, Haddrill et al 2014, Kapaya et al 2015, McDonald et al 2020), single women (Raleigh et al 2010, McDonald et al 2020), unemployed women (Barber et al 2017, McDonald et al 2020), and those with a high index of multiple deprivation (IMD) (Rowe et al 2008, Barber et al 2017, McDonald et al 2020).

Ethnicity

Women of non-White ethnicities were found to have the highest chance of presenting late for care (Rowe et al 2008, Baker & Rajasingam 2012, Tariq et al 2012, Cresswell et al 2013, Kapaya et al 2015, Hatherall et al 2016, Barber et al 2017, McDonald et al 2020). However, a high incidence amongst women of Eastern European ethnicity was also reported in one study (Cresswell et al 2013).

Along with ethnicity, women were more likely to book late if they were non-UK-born, and even more so if they were born outside the UK and did not speak English (Rowe et al 2008, Cresswell et al 2013). However, Cresswell et al (2013) found that English-speaking women of African or Caribbean ethnicity, born in the UK, were still more likely to book late for antenatal care. This was not found among any other English-speaking ethnic group who were UK-born.

Language barriers

Women who did not speak English, or had difficulties speaking English, were also more likely to book late for care (Cresswell et al 2013, McDonald et al 2020). The main challenges included being unable to make or rebook appointments (Callaghan et al 2011), difficulties challenging timing of appointments (Haddrill et al 2014) and delays due to inadequate provision of interpretation services (Hatherall et al 2016).

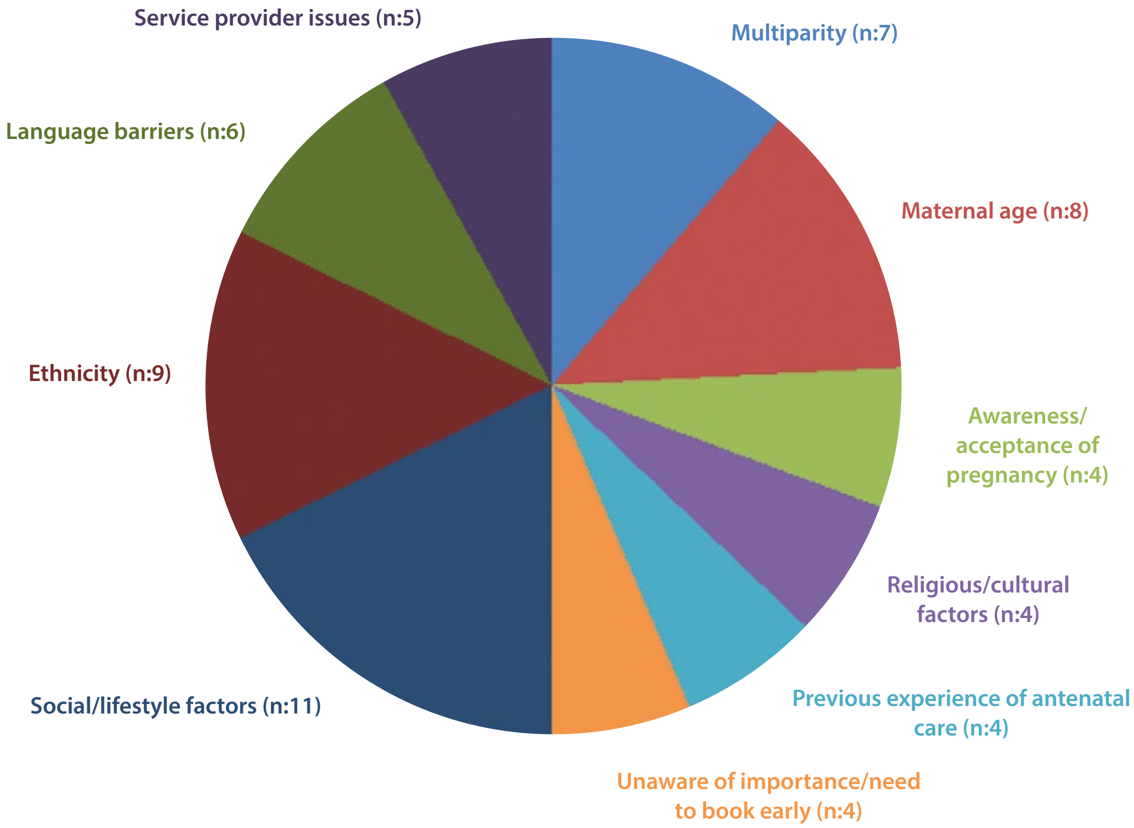
Religious/cultural factors

Concerns that care providers were judgmental, did not understand, or were dismissive of cultural beliefs,

Table 2. Reoccurring frequency of themes affecting early access to antenatal care in the included studies.

Study	Multiparity	Maternal age	Awareness/ acceptance of pregnancy	Social/lifestyle factors	Ethnicity	Language barriers	Religious/ cultural factors	Issues accessing care – service provider issues	Previous experience of antenatal care	Unaware of importance/ need to book early
McDonald et al (2020)	■	■		■	■	■	■	■		
Barber et al (2017)	■	■		■	■					
Chinouya & Madziva (2019)			■	■			■		■	■
Hatherall et al (2016)			■		■	■		■	■	■
Kapaya et al (2015)	■	■		■						
Haddrill et al (2014)		■	■	■	■	■	■	■	■	■
Cresswell et al (2013)	■	■		■	■	■				
Tariq et al (2012)	■	■		■	■					
Baker & Rajasingam (2012)	■	■		■	■	■	■	■		
Callaghan et al (2011)	■	■	■	■	■	■		■	■	■
Raleigh et al (2010)				■	■					
Rowe et al (2008)				■						

Figure 2. Frequency of reoccuring themes affecting early access to antenatal care (n = number of articles).



beliefs that a woman should not be unmarried and pregnant and beliefs that pregnancy should not be disclosed during the first three months due to negative comments increasing the chance of pregnancy loss (Chinouya & Madziva 2019), were all factors in late access to care. Where religious beliefs do not permit abortion the need for early antenatal care was, for some, deemed unimportant (Haddrill et al 2014).

Issues accessing care — service provider issues

Postal delays (Callaghan et al 2011), lack of appointment availability (Hatherall et al 2016), letters not being received, and incorrect timing of appointments (Haddrill et al 2014) directly contributed to late booking. For women with language difficulties, the ability to book/rebook an appointment was also an issue, especially when interpretation services were not available (Callaghan et al 2011, Haddrill et al 2014, Hatherall et al 2016). Being unaware of how to book for maternity care and difficulties registering with a general practitioner (GP), especially if new to the area/country, was also identified as a barrier (Hatherall et al 2016).

Previous experience of antenatal care

Both positive and negative experiences of antenatal care subsequently influenced when a woman chose to access care. Of the negative experiences, lack of continuity of carer, lack of interpretation services (Callaghan et al 2011) and feeling judged by the care provider were identified as barriers (Chinouya & Madziva 2019). For previous positive experiences, women reported having no problems during their last pregnancy and felt that this pregnancy would be the same, so did not see the value of early care (Haddrill et al 2014, Hatherall et al 2016).

Unaware of importance/need to book early

A lack of awareness of the importance of booking early for maternity care was evident, with some women stating they were not aware of this advice (Chinouya & Madziva 2019). Others felt that there was no immediate need to access care as pregnancy was a normal life event (Callaghan et al 2011), while some believed care was only necessary if feeling unwell (Haddrill et al 2014, Hatherall et al 2016), or requiring advice (Haddrill et al 2014). Others were concerned that, due to the increased risk of miscarriage in the first trimester, there was no point in accessing care prior to this time, as it would waste GP time (Hatherall et al 2016).

Discussion

The primary aim of this review was to investigate factors that determine why women book late for antenatal care in the UK. Twelve studies of varying quality were identified and, although findings were mixed, several common themes were found. These themes were primarily associated with factors relating directly to the pregnant woman, such as age and ethnicity, or related to challenges/ barriers within the antenatal care system in the UK.

Difficult social circumstances and a challenging home life were the most commonly occurring themes amongst studies and appeared to be intrinsically linked to nearly all other themes. Challenges centred around social service involvement, living in temporary accommodation and/or having little to no social support. By providing these women with an environment in which they feel safe and supported, along with appointments at varied, flexible times in convenient locations, they may help improve future engagement. The barriers to early booking that were identified in this category were again observed in studies from other countries (Downe et al 2009, Heaman et al 2014), highlighting the significant issues experienced by these women. It is therefore important that these factors are considered when developing future antenatal care provision.

Ethnicity was repeatedly found to be a factor for late booking. However, results showed a more complex relationship than that of ethnicity alone, with factors such as country of birth and English language ability playing a significant role. The finding that English-speaking women of African or Caribbean ethnicity born in the UK were still more likely to book late for care (Cresswell et al 2013) may highlight possible religious/cultural aspects that affect choices. Posthumus et al (2015) found that for non-Western women, living in a community with a highly dense, minority ethnic population improved the timing of antenatal care initiation. This appears to imply effective information sharing and support within these community groups. Through the use of community engagement projects, it may be possible to further develop and enhance communication and information sharing between health professionals and families, in regard to maternity care, to further increase early booking times.

The finding that pregnant women below the age of 20 were more likely to book late for care could potentially be due to their lack of awareness of signs and symptoms of pregnancy, or it may be related to issues such as having limited social support, taking longer to come to terms with the pregnancy, or concerns regarding the stigma of being pregnant at a younger age (Haddrill et al 2014). Factors such as not knowing how to access care or being unaware of the need to book early may also be an issue for women in this age group, but the same could be argued for all women who are pregnant for the first time and, based on parity alone, first-time mothers were amongst the least likely to book late (Cresswell et al 2013).

Although findings showed little difference in the gestation at time of booking between women who were pregnant for the first time and those who already had one/two children, the correlation between increasing number of children and late initiation for care was very apparent. The reasoning behind this appears to be multifactorial with issues such as lack of childcare or the belief that early antenatal care is not important due to previous uneventful pregnancies. For those women who have no social support, access to suitable childcare may be difficult to obtain, potentially making it more challenging for the woman to attend appointments. Similar issues associated with multiparity were also noted in other European (Delvaux et al 2001) and Canadian (Heaman et al 2014) studies, highlighting the struggle that some women face when trying to access care.

For non-English-speaking women born outside the UK, simply making appointments, or having an awareness of the antenatal care system may prove significantly challenging. Inadequate use of interpretation services by health care providers will directly disadvantage women who are unable to speak English. By not using interpretation services, where needed, it will likely influence the level of care received by a woman, potentially making her less inclined to want to return (Boerleider et al 2013). Examples of this are also seen within this review, with women having difficulties making or rearranging booking appointments due to language barriers (Callaghan et al 2011, Haddrill et al 2014). Therefore, interpretation services, whether face-to-face or via the telephone, should always be readily available when required.

Service providers should be responsible for ensuring women are provided with appointments that are correct for their gestation, and appropriate training/ procedures for staff should be in place to ensure that the service runs correctly. If women are noted to have language difficulties, appropriate provision should be made to ensure that interpretation services are available at all appointments. Consideration should also be given to the use of an interpreter if a woman appears to be having difficulty making or rearranging an appointment. With regard to postal delays, it may be necessary for providers to consider how appointments are communicated. Using multiple methods to communicate appointments, such as text or email, should be considered, either in place of, or in addition to postal invitations. This could help avoid postal issues and potentially improve communication with women who are living transiently. Any communication should preferably be written in the woman's first language.

The finding that women are discouraged from accessing care due to fear of being judged for their religious or cultural beliefs is disheartening and raises the question as to whether a lack of cultural/religious awareness among health care staff leads to dismissive or judgemental attitudes. If staff are not respecting women as individuals, and instead expect that they 'adapt to the dominant culture' of the country in which they live (Henderson et al 2013), this could lead to a lack of trust and loss of confidence in health care providers.

For women whose pregnancies were unplanned/unexpected, or who were considering ending their pregnancy, the personal time needed to come to terms with the findings would be unique to each woman. It would therefore be unlikely that any interventions could improve booking times in these situations. Similarly, for women who had not realised that they were pregnant, late presentation was most likely unintentional and therefore difficult to address. Improving general education around pregnancy symptoms could be considered, but for women not expecting to be pregnant due to medical issues, for example, this may not be of benefit.

Overall, for women who had previous negative antenatal experiences, it would be interesting to know if they had been provided with continuity of their health care provider. Lack of continuity has been shown to negatively impact pregnancy experiences because women are unable to gain a rapport with one individual (Callaghan et al 2011). These women may therefore feel unable to discuss personal matters in confidence or openly discuss their care needs. Providing continuity of care may improve pregnancy experiences and encourage future engagement.

Implications for practice

The overall complexity of the issues identified, and large degree of overlap between themes, would suggest that no one intervention would be suitable to tackle the issue. Therefore, if an improvement in early antenatal care access is to be seen, it is important that interventions are undertaken to target the main challenges. Based upon the review data, our proposed recommendations to improve the rates of early engagement would include:

- Provision of staff training sessions to better understand and support cultural/religious beliefs. This would be especially prudent in areas of high ethnic diversity. Engagement of service providers and commissioners with community groups and religious leaders would potentially improve communication, allowing all parties to share their common goals and objectives while fostering mutual trust and respect.
- Improve accessibility of care through the potential use of walk-in centres/hubs/home visits for all booking appointments. By holding these appointments in locations that are easily accessible it will help to reduce logistical constraints and minimise transport costs. The use of 'drop in' sessions or flexible appointments may also benefit those with childcare difficulties or challenging social circumstances. Heaman et al (2014) identified that incentives, such as assistance with childcare or transport costs, may improve booking times, therefore it may be valuable to consider providing childcare facilities for appointments where possible.
- Some women were found to be completely unaware of advice to book early, implying that information regarding this is not widely enough available. Adding information regarding the importance of early antenatal booking to trust and GP websites, along with information on how to access care, would be a simple way to target populations locally. Making this information available in languages most common to that area would also be of value.
- When communicating with women, consideration should also be given to the use of text/email communication in addition to postal appointments, these should also preferably be written in the woman's first language.
- Improved availability and utilisation of interpretation services is recommended for all care settings.

Strengths and limitations

The strengths of this study lie with the use of an extensive search criteria and inclusion of both quantitative and qualitative research studies. To further improve the validity and reliability of the study, two reviewers were also used to assess articles for inclusion and quality.

Limitations of the study are due to subjectivity bias which may occur when extracting qualitative data. However, as reoccurring themes were identified in multiple papers this will have improved the validity of the findings.

Other limitations are due to potential underrepresentation of women with difficult social circumstances, substance misuse, or uncertain immigration status, as these women may not wish to participate in studies due to time constraints or fear of repercussions. Women with learning difficulties or language barriers may also not be fully represented, with several studies failing to mention if translators/translated material was used.

Due to the different methodologies used by each of the reviewed articles it was not possible to collate and combine detailed demographics, such as ethnicity/BMI, in order to provide the overall number of women falling into each category. If this had been possible it would have improved the validity of the results.

Recommendations for future research

Further research to study the interrelationship between ethnicity, country of birth and English language ability, would be recommended to help guide future initiatives aimed at improving early booking times, as would studies focusing upon those women experiencing difficult social circumstances.

Conclusion

This study aimed to highlight the potential barriers to accessing antenatal care in the UK and, through the systematic review of available literature, was able to identify the main reasons as to why care was accessed late. The factors leading to late booking were complex, with many of the themes being intrinsically linked. Difficult social circumstances, lack of support, judgement by care providers and language barriers were strongly associated with women not being able to, or not choosing to, engage early with care. Improved accessibility to services, provision of childcare, the use of interpreters and community engagement projects are recommended to tackle this complex and challenging issue.

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Conflicts of interest

None

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Appendix 1. Search terms and Boolean operators used as part of the systematic review.

	Search terms (including Boolean operators)
Population	**‘Pregnancy care’** *OR* **Pregnant** *OR* **Pregnancy** *OR* **‘Prenatal care’** *OR* **‘Pre-natal care’** *OR* **‘Care prenatally’** *OR* **‘Antenatal care’** *OR* **‘Care Antenatally’** *OR* **‘Ante-natal care’** *OR* **‘Maternal care’** *OR* **‘Maternity care’**
AND	
Intervention	**‘Late booking’** *OR* **‘Late access’** *OR* **‘Delayed access’** *OR* **‘Delay accessing’** *OR* **‘Book late’** *OR* **‘Booked late’** *OR* **‘Booking late’** *OR* **‘Delayed initiation’** *OR* **‘Late initiation’** *OR* **‘Delay seeking’** *OR* **‘Delay in seeking’** *OR* **‘Late presentation’** *OR* **‘Present late’** *OR* **‘Delayed presentation’** *OR* **‘Delay in presenting’** *OR* **‘Late engagement’** *OR* **‘Delayed engagement’** *OR* **‘Delay engaging’** *OR* **‘Delay engagement’**
AND	
Outcome	**Barrier** *OR* **Barriers** *OR* **Barrier*** *OR* **Determine** *OR* **Determines** *OR* **Determinants** *OR* **Determin*** *OR* **Challenge** *OR* **Challenging** *OR* **Challenges** *OR* **Challenged** *OR* **Challeng*** *OR* **Difficult** *OR* **Difficulties** *OR* **Difficulty** *OR* **Difficult*** *OR* **Obstacle** *OR* **Obstacles** *OR* **Issue** *OR* **Issues** *OR* **Reason** *OR* **Reasons** *OR* **Reasoning** *OR* **Reason*** *OR* **Factor** *OR* **Factors** *OR* **Factor***
AND	
Country	**UK** *OR* **‘United Kingdom’** *OR* **England** *OR* **Britain** *OR* **‘Great Britain’**

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