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 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 upon 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, 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% 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 6 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) recommends 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%. With many maternity providers not being able to meet the 75% 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 articles, which focus upon delayed access to maternity care, have been undertaken in the United States of America (USA) or 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 healthcare 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 those women living in the USA. It is therefore not always possible to apply the findings from one country to those of 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 these women change the country in which they reside (Chinouya & Madziva 2017). 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 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, and also due to reliance of healthcare 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 healthcare professionals.

Studies reviewing the issues faced by women booking for maternity care in the UK are few, and range in date from 1980's 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 utilization. The search terms were then reviewed by the second author and reviewed by a colleague independent of the review.

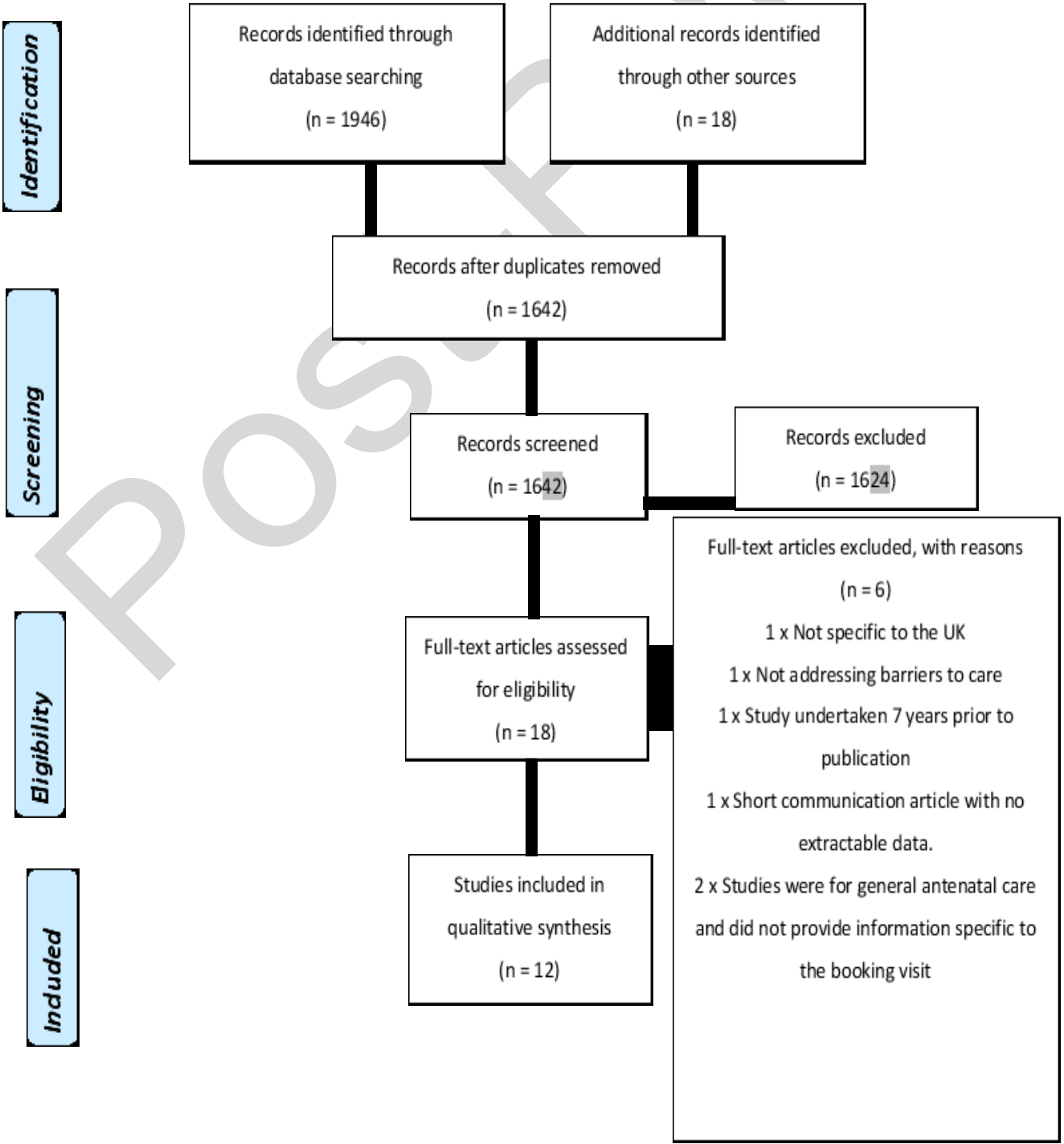
Search databases were selected to include both subject specific and general databases. These included PubMed, CINAHL Plus, Cochrane, NICE, internurse, Google Scholar, Scopus and ScienceDirect. OpenGrey was also used to obtain any grey literature which may be relevant to the review. The specific search 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 of the articles, while the second author independently screened the titles and abstracts of 10% 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: Moher et al 2009.

Data extraction and analysis

Quality and validity of articles was undertaken using 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 (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 was 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 was extracted and assigned to the most appropriate category.

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, 6 did not meet the specifications, leaving 12 articles for final synthesis (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 (Figure 2 and Table 2)

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	122275 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	619502 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 (2017)	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	21 individual interviews and six focus groups (4 groups of women and 2 groups of health professionals).	Identify issues which result in late booking	• Early booking not seen as important • Previous expericence 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.	59487 records of pregnant women identified via a trust database. 158 pregnant women completed questionnaire.		• 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	20135 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 amongst women with HIV.	• HIV postive 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	26325 women.	To explore the social and ethnic inequalities of maternity care experiences.	• Women from minority ethnicities • Single women • Those completing education aged ≤ 16

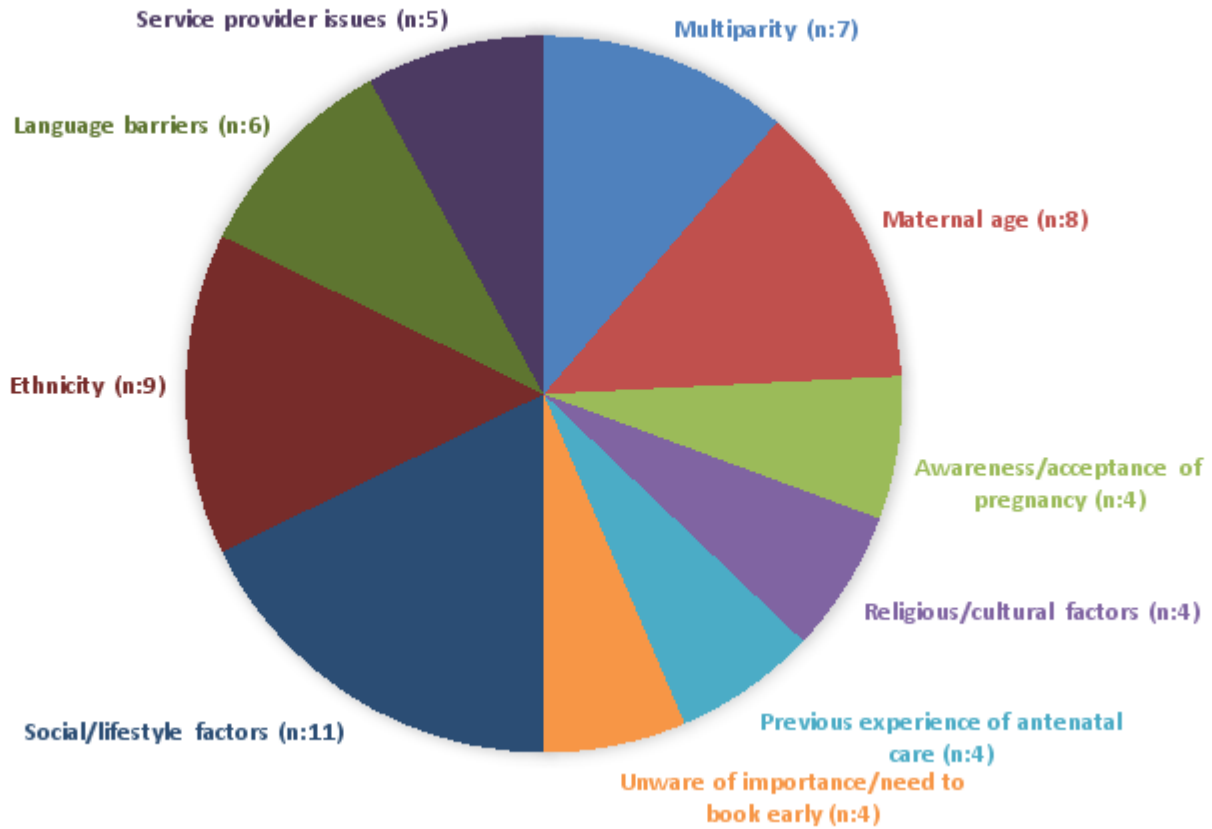
Rowe et al (2008)	Postal survey questionnaire	839 women	To identify social or ethnic differences in access to antenatal care	• Born outside of the UK • No husband or partner • Ethnicity

Table 2. Re-occurring 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 (2017)										
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)



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 (Barber et al 2017, Kapaya et al 2015), with highest levels of significance amongst 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, Barber et al 2017, Cresswell et al 2013, Kapaya et al 2015, McDonald et al 2020).

Awareness/acceptance of pregnancy

Needing time to come to terms with pregnancy, especially if unexpected/unplanned (Hatherall et al 2016, Haddrill et al 2014), or consideration of ending the pregnancy (Callaghan et al 2011, Chinouya & Madziva 2017, Haddrill et al 2014), 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 of 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 amongst 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 inadequate provision of interpretation services (Hatherall et al 2016).

Religious/cultural factors

Concerns that care providers were judgemental, did not understand, or were dismissive of cultural beliefs; beliefs that a woman should not be unmarried and pregnant; and beliefs that pregnancy should not be disclosed during the first 3 months due to negative comments increasing the chance of pregnancy loss (Chinouya & Madziva 2017), 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 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 2017). 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 to the importance of booking early for maternity care was evident, with some women stating they were not aware of this advice (Chinouya & Madziva 2017). 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 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 (Heaman et al 2014, Downe et al 2009), 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 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 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 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 of the UK, simply making appointments, or having an awareness of the antenatal care system may prove significantly challenging. Inadequate use of interpretation services by healthcare 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 regards 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 amongst healthcare 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 healthcare 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 etc., 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 healthcare

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 a 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.

- Information on how to book for care and the importance of antenatal screening/early booking should be provided on local trust and GP websites. Consideration should also be given to the use of text/email communication in addition to postal appointments; these should 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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Supplementary information:

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'**