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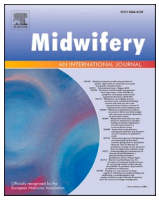

Factors affecting take up of community based antenatal programmes in high income countries: a rapid realist review

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ABSTRACT

Problem: Take up of antenatal programmes based in the community was lower than expected in a deprived UK case study area, despite targeted support. More understanding was required regarding why, to make effective changes.
Background: Different models of antenatal programme can be delivered in community settings, to help improve the health of children from deprived areas.
Objective: To identify theories associated with how, why and in what contexts parents-to-be access community based antenatal programmes in high income countries, to increase service use.
Review Methods: Rapid Realist Review, incorporating initial review of national policy documents, reports, observations of antenatal pathway meetings, development of review programme theories with Reference Group support.
Results: Forty eight papers met the Review criteria and were included: 11 systematic reviews, meta-syntheses; realist reviews, protocols; 34 single studies; two dissertations, one grey literature article. Evidence identified gaps in knowledge to optimise attendance and highlighted the importance of health practitioners but details on impact were lacking. Several factors appeared to impact on access to antenatal support, specifically marketing and inclusivity, perceived candidacy for care, needs prioritisation, practitioner promotion of programmes, stereotypes of fathers' roles, site accessibility, timings, transport, negativity with venues.
Discussion: Mechanisms were not easily identified within the literature reviewed. Many papers and reports focussed on background and context. There was an absence of information on how programmes had been advertised, contact and referral processes.
Conclusions: This review found several factors that may encourage engagement with antenatal programmes. Further research is required to uncover mechanisms regarding access, or how practitioners can support these. Voices of those not engaging should be included, including those from White, Eastern European backgrounds and fathers/partners.

Introduction

In England, statutory antenatal provision includes regular health monitoring with a midwife, two pregnancy ultrasound scans and screening tests for certain conditions. Parents may also be offered parent education classes, usually held at a local hospital (NHS 2020). Provision is generally well-received in the UK, though take-up is influenced by socio economic groups, with the most deprived women being 60% less likely to have received any antenatal care, when compared to more affluent women (H Rayment-Jones et al., 2019). There have also been differences in take up by ethnic group (Raleigh et al., 2010), where parents from Black and Asian backgrounds have a poorer journey through this aspect of their pregnancies. 'Late initiation' of antenatal services in the UK is also more prevalent for women born outside of the

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UK (Rowe et al., 2008).

It has been previously noted that there is limited impact of engagement in antenatal care on maternal and child outcomes. This may be partly because services have not been adequately developed to meet the needs of certain groups, considering differences in what is 'acceptable and appropriate for, and accessible to, the women it is intended for' (Finlayson et al., 2016). Accessibility to healthcare is considered as a key issue that can impact on use of relevant services that can improve health outcomes (Gulliford et al., 2002). Specific components of access include: availability; adequacy of care; accessibility; appropriateness; affordability (NHS 2016); timings of access (Azam and Moy, 2018; Dawkins et al., 2021).

Antenatal programmes based in community settings rather than hospitals are usually referred to as 'community-based antenatal programmes' (Owens et al., 2016; Rayment-Jones et al., 2021). They include interventions such as emotional and physical health support aimed at specific populations, e.g.: vulnerable women, indigenous communities. Locally-delivered initiatives can aim to improve outcomes by reducing inequities and improving access to good levels of care for everyone including those from different ethnic backgrounds and low-income families. Some programmes focus on covering different areas of health improvement for specific local areas such as breastfeeding and have specific funding. These can be designed and run with people from the local community providing peer support (Turan and Say, 2003; Bertilone and McEvoy, 2015). An increase in the use of these services may improve maternal and infant outcomes such as a reduction in preterm birth (Rayment-Jones et al., 2021) for some women with social risk factors and also health-seeking behaviours in the future (e.g.: attending infant check ups) (Turan and Say, 2003).

Aim

To identify theories associated with how, why and in what contexts parents-to-be access community based antenatal programmes in high income countries, to increase service use.

This Rapid Realist Review (RRR) aimed to highlight how a community antenatal programme 'ought' to work, including the original ideas and intentions behind it, producing initial programme theories. Referred to here as review programme theories, these are described by Brown et al. (2018) (Brown et al., 2018) as the 'explanatory framework' (Brown et al., 2018). The review aimed to test these theories by capturing what was already known about access to community antenatal services, advancing understanding of how each 'component' of provision was working in reality (Wong et al., 2013). It also sought to identify what might be preventing take up and advancing understanding of where elements may be 'generating causal impact' (J. Jagosh, 2021). This is in contrast to a scoping study (Arksey and O'Malley, 2005), which would help to 'describe the architecture of interventions (and their outcomes generally)'.

The review sought to:

- Identify in what circumstances programmes work best in encouraging engagement from women and partners.
- Identify the key resources, reactions and responses (mechanisms) that influence take up of community based antenatal programmes.
- Identify contextual factors that have the most impact (positive or negative) on take up.

It was not intended to capture every available paper or report linked with access to programmes, but to collect detail relating to existing theories or generate new ones.

Methods

Design

A realist approach was adopted for this evidence synthesis. Rather than being positivist or constructivist, the approach is that the problem in question can be seen as 'between reality and our construction of reality' (Jagosh, 2019; Sayer, 2000). It operates on the suggestion that intended and unintended outcomes of an intervention result from resources, reactions and responses (mechanisms) that have been sparked by the locally specific context (Handley et al., 2020). This was appropriate because of the defined need to identify what is working in engaging people in programmes, when, why and how, to provide lessons learned.

The Better Start Bradford (BSB) programme (https://www.betterstartbradford.org.uk/) was selected as a case study providing detailed contextual information for the review. BSB is a National Lottery funded £49m multi-layered programme aimed at boosting developmental outcomes for children aged 0–4. It covers areas within the 'most deprived 10% of areas in England' (Dickerson et al., 2016) and experiences complex needs, a migrant and transient population, high levels of infant mortality, obesity and poor oral health (Dickerson et al., 2016). The programme covers 20 projects: exercise; feeding and healthy eating; mental health and wellbeing; speech and language development; parenting. Its delivery is dependent on engagement with families and partners. BSB's participation data indicates that many projects do not reach all intended families. As noted in research on engagement in deprived areas, promotion of interventions may be substantial, but take up can be low (Small et al., 2019).

The decision about whether to undertake a full realist synthesis or RRR was influenced by the function of the review and length of time available (see supplementary information for a detailed comparison (supplementary material Table 1)). A RRR is an evidence synthesis that applies realist philosophy. It was selected as the most appropriate method because it is designed to directly connect with context-specific interventions delivered in a specific area (Willis et al., 2014), providing theory and recommendations quickly, rather than considering the transfer of theory to other contexts. Stakeholders involved in the intervention inputted into the review, to help ensure identification of key literature and further develop theory (Willis et al., 2014; Saul et al., 2013). We wanted to establish key theories from a focussed search, supported by the Reference Group, rather than allocate a longer time frame for iterative theory testing to reach 'theory saturation' (Saul et al., 2013). The review process and findings were conducted using Realist And Meta-narrative Evidence Syntheses methods (RAMESES) (Wong et al., 2013).

This study was overseen by a Reference Group which aimed to agree and validate the review's focus and the accuracy and relevance of draft theories. The Group included representation from key stakeholders including: BSB programme staff/stakeholders; practitioners (midwives); and academics, as well as the lead author's supervisory team. As according to review guidance (Willis et al., 2014; Saul et al., 2013) it provided stakeholder and expert input into its scope (aims, objectives, definitions) and highlighted key papers and publications relevant to effectiveness and contexts for delivery of programmes.

In line with recommended ways of building a realist approach, the review looked at descriptions of programmes and categorising expected outcomes to explore how this type of antenatal provision can be designed, as outlined in Fig. 1.

Review of national policy documents and reports

The Reference Group, were asked to identify key UK policy documents and reports that discuss expectations of programmes for example, including why and how women and their partners might be involved.

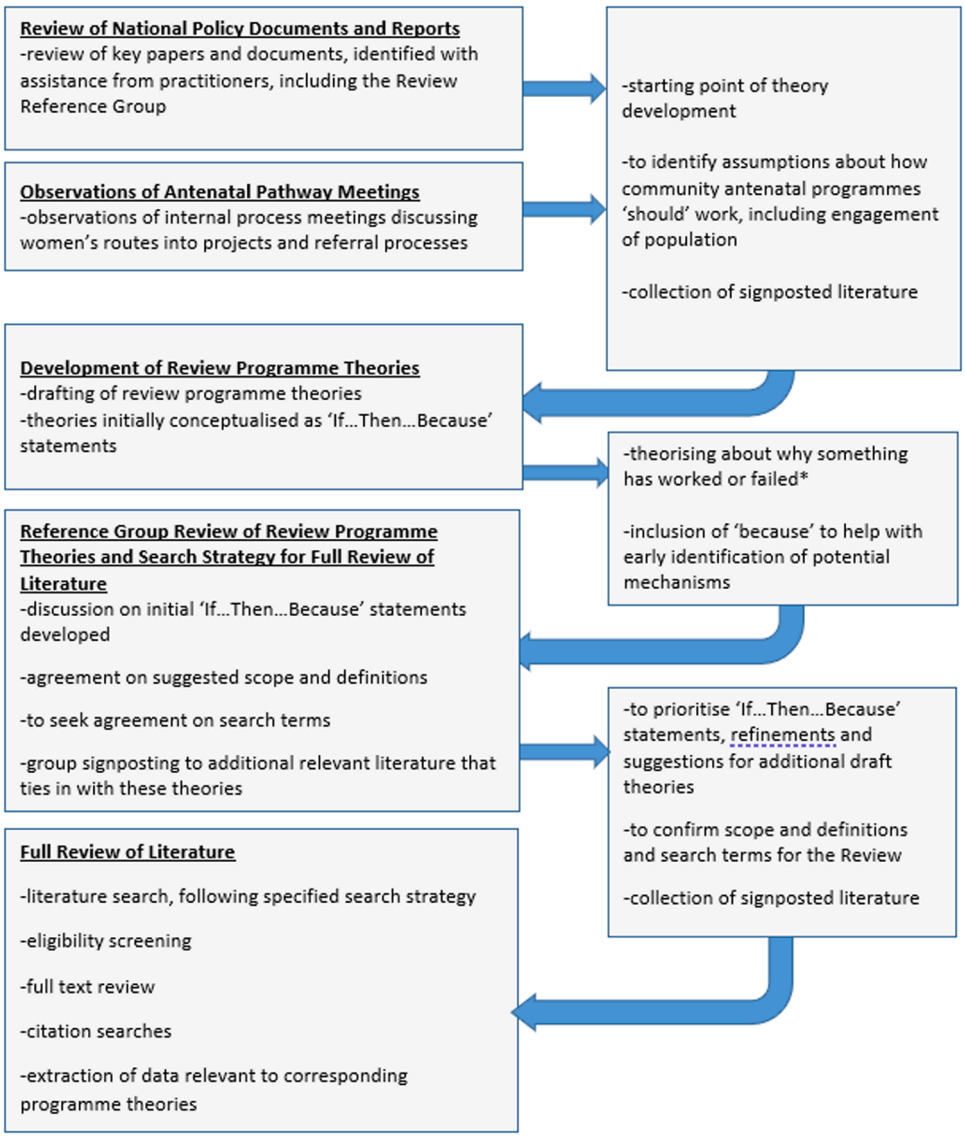

Fig. 1. Flowchart of Rapid Realist Review Process.

Observations of antenatal pathway meetings

The team also sought to observe process meetings, working with BSB as an example, where design and practicalities of the interventions were discussed. These observations were intended to clarify how delivery was intended to happen in a local area and issues faced in encouraging take up.

Development of review programme theories

It was expected that these data would inform a set of review programme theories (Brown et al., 2018) to explore what may impact take up of antenatal programmes. These theories were associated with how, why and in what contexts parents-to-be access community based antenatal programmes in high income countries, based on existing evidence. We planned to draft theories as 'If…Then…Because' statements, which allow specific description of what might be happening, how and why. These were drawn from interpretation of how access to antenatal programmes can be affected, including 'because' to provide detail on potential mechanisms (Jagosh, 2019). These theories could be tested and refined through a fuller review of literature (papers, grey literature) and guided development of the search strategy.

Reference group review of review programme theories and search strategy for full review of literature

The Reference Group discussed the focus of the RRR (Willis et al., 2014; Saul et al., 2013) and the definition of "community antenatal" being used. The Group was also asked to comment on the review programme theories and recommendations regarding key reports, policy documents, papers of relevance to the study focus. Eligibility criteria and appropriate search terms were discussed.

Full review of literature

Inclusion criteria. The inclusion criteria were women and their partners expecting a baby or who had a baby in the previous 24 months. Types of studies eligible for the review covered access to antenatal programmes in high income countries (defined using Gross National Income per capita (New World Bank country classifications by income level: 2020–2021 2021). We extended this definition to provision that is 'over and above' a standard appointment or hospital-based parent education class.

Eligible literature included:

- Review papers, opinion pieces, discussion papers, editorials, letters, systematic reviews, evaluations, qualitative studies and protocols
- Conference abstracts and presentations, publicly available policy strategies, implementation plans, evaluations and qualitative case study reports
- Newspapers, magazine articles, websites, blogs, commentary on social media.

See supplementary information for a detailed list of criteria (supplementary material Table 2)

Although our case study area was within the UK, we included papers covering other high-income countries. While we acknowledged there would be contextual differences, we anticipated there may be similarities relevant to UK context e.g.: use of language support.

Search strategy

Indexed databases were searched from 1990 to April 2020. A previous review by Schrader MacMillan et al. (2009) constructed its searches from 1990 and included evidence of antenatal education (Schrader McMillan et al., 2009) which had informed development of new UK policy agendas such as 'Preparation for Birth and Beyond' (Department of Health 2012). It discussed the changing context of parent education and shift in focus towards transitions to parenthood instead of preparing for birth and labour. It was important that the Review incorporated these timings, to include changes in interest regarding relationships and bonding. A search strategy was developed for concepts and synonyms using the population, intervention, comparison, outcomes (PICO) search strategy (Sayers, 2008; Booth et al., 2018): for population (e.g.: family; antenatal) AND engagement strategies (e.g.: what works; best practice) as part of the intervention AND evaluation (e.g.: programme evaluation) as comparison between evaluation approaches AND outcome (e.g.: access), combining MESH and key words with OR, within each category. These are summarised in a table in the supplementary information (supplementary material Table 3). The following steps were taken:

Step 1: An initial run of searches was trialled on Ovid Medline (1946-current database), to explore the relevance of papers. The Booth & Carroll theory search filter was applied to assist with 'systematic identification of theory' (Booth and Carroll, 2015). Searches incorporated the DeJean qualitative 'hybrid' filter to enhance sensitivity to qualitative studies within medical databases (DeJean et al., 2016). The final search strategy followed the same 'cascade' process. Each type of research design was first linked to categories of Family AND Antenatal; followed by outcome terms (health equity, socioeconomic factors, culturally competent care (MESH), access, inequity, equity, inequality, equality (key words)); and the two search filters. Engagement terms (take up, service utilisation, improved parental engagement, improved engagement, father involvement, effective delivery, impact service users (key words)) were added where there was scope. Database subject headings were used for study design (using Medline as an exemplar). Searches were conducted for each design type, until all had been included (e.g.: observation; ethnography; focus group).

Step 2: Once established, the strategy was adapted for other databases selected for their inclusion of existing research in biomedicine and healthcare, nursing practice and midwifery: Ovid Embase; Ovid PsycINFO; EBSCO CINAHL; PubMed; Web of Science; and Cochrane Database of Systematic Reviews. An exemplar of the search and full list of design terms is included in supplementary material Fig. 1.

Step 3: Searches were conducted in Google Scholar and Google to identify literature that may not have been picked up by databases, especially grey literature including reports, website articles, training material, practitioner guidance. Searches included: family + antenatal + qualitative; family + antenatal + theory; "community antenatal"; access + community antenatal; take up + community antenatal. The first ten pages of results for each search were screened for relevance.

Step 4: After removal of duplicates, titles, abstracts and key words were reviewed. A second reviewer scrutinized 10% of papers to independently check studies that had been included. Only a small proportion of the literature reported findings for community interventions. Many others were about access to standard provision. The decision was made to include studies from both categories as they may share reported factors that influenced access.

Step 5: Potentially eligible full texts were reviewed using web-based literature review software (https://app.covidence.org). All text that appeared to be a programme theory in terms of context, mechanism or outcome was highlighted. A random sample of 10% of these literature were checked by the same second reviewer to assess composition and similarity of programme theories.

Step 6: The Review followed Saul et al's (2013) approach of focussing citation searches on key documents identified, as indicated by Realist And Meta-narrative Evidence Syntheses guidelines (Saul et al., 2013). It also used Citations; Lead authors; Unpublished material; Scholar searches; Theories; Early examples; Related projects (CLUSTER) searches as these are considered useful methods for Realist Review, identifying literature 'with a shared context' as well as additional theory searches (Booth et al., 2018). Forwards citation searches were conducted using the 'cited by' function in Google Scholar, to identify recent literature referencing these studies. Backwards searches were carried out via Scopus reference lists. Papers repeating information already collected were excluded.

Extraction of data for corresponding review programme theories

Text were extracted using a study-specific data extraction form (supplementary material Fig. 2) collecting data on review programme theories, as well as iterative capture of new theory. It captured suggested theories relating to "community antenatal" within descriptions of what is working, how, for whom, in what circumstances, covering narratives of the context and issues faced by specific groups. Updated review programme theories were shared with the Reference Group 'to ensure validity and consistency in the inferences made' (Brown et al., 2018).

Results

Part 1: results from review of national policy documents and observation of antenatal pathway meetings: collation of data to inform and develop review programme theories for full review of literature

The Reference Group identified three national policy documents and reports. Combined with the information gathered during observations of antenatal pathway meetings, this evidence expressed the benefits of community programmes. These included continued contact with the same practitioner and benefits of adequate time for practitioners to introduce provision. Draft review programme theories were developed regarding: marketing of programmes; contact with practitioners; and accessibility of sites.

a) Review of National Policy Documents and Reports

Literature identified as being important to the review discussed expectations of programmes and plans for engagement. Documents were scanned for content related to suggested resources and expected outcomes.

- The Department of Health (2012) (Department of Health 2012) report on 'Preparation for Birth and Beyond' a resource pack for leaders of community groups and activities' was partly based on Schrader McMillan et al's 2009 (Schrader McMillan et al., 2009) review of evidence on antenatal education as well as discussions with stakeholders, including parents. It provided guidance for community groups to deliver antenatal support for local populations.
- Policy document, NHS England's (2016) (NHS England 2016) national maternity review on 'Better Births' outlined the 'Continuity of Carer' agenda (NHS England 2017), with the aim to provide more

personalised care in midwifery and deeper relationships with pregnant women. This made recommendations informed by consultations with families, clinicians and commissioners, reflecting expectations of how antenatal programmes should be designed and introduced.

- The Early Intervention Foundation's (2019) (Pote et al., 2019) evidence review of Engaging Disadvantaged and Vulnerable Parents (including rapid evidence assessment and qualitative evidence synthesis involving stakeholders) suggested parents face a number of difficulties, including accepting that support may help them, access to venues, costs.

The architecture of access to community antenatal programmes appeared to include contact with the same practitioner (especially the midwife) to nurture relationships and feelings of trust. Parents are reportedly attracted to content relating to Dads and suggests cultural sensitivity, allowing parents to explore how information relates to 'cultural and faith attitudes and beliefs' (Department of Health 2012).

b) Observation of Antenatal Pathway Meetings

A range of 6–8 staff from the BSB programme and health practitioners attended each of the three observed antenatal pathway meetings. These meetings indicated practical barriers to facilitating referrals. Time to discuss provision during midwife appointments appeared to be an issue, including time to mention projects on offer. Discussions also focussed on the value of clear language in introducing projects to women and updates to what was available. The reasons pregnant women had provided for why they had not engaged were discussed as well as changes in eligibility and how to convey this to practitioners.

c) Development of Review Programme Theories

Review programme theories were produced as a set of draft statements ('if, then, because' statements) relating to the emerging themes. Each statement was checked for whether the outcome had been fully identified, by re-reading it and making a judgment as to whether it was a resulting 'effect' (Jagosh, 2019) related to take up within the case study programme. We then worked 'backwards to what causes the outcome, then backwards from that to the circumstances in which that cause works (or doesn't)' (Westhorp, 2019). Statements were written out and redrafted several times, reflecting on the review of national policy documents and reports and considering construction of programme theory. Draft review programme theories detailed in Table 1 below related to: *Marketing of programmes*, how programmes are explained in material, references to content, accessibility of printed or online information; *Contact with practitioners*, how women are contacted about available programmes, when in their pregnancy, information provided about programmes, including referrals, attributes of practitioners in encouraging take up; and *Accessibility of programme sites*, incorporating logistical considerations.

d) Reference Group Review of Review Programme Theories and Search Strategy for Full Review of Literature

Once developed, draft theories were reviewed and validated by the Reference Group, providing feedback regarding which appeared in line with their perspectives and experiences, changes required and whether anything was missing.

The Group suggested the review should be positioned on access rather than whether individuals had 'failed' to be engaged, as there could be many reasons why a pregnant woman might not attend. Academic and community experts in the group advised that cultures in the BSB area may have different attitudes towards antenatal programmes and their value and that different contact points about interventions could identify mechanisms impacting on take up. Searches for literature regarding Westernised countries, with high incomes was recommended, to allow relevance to the UK.

Table 1
Draft review programme Theories ('If, Then, Because' Statements).

Key
Context – background, environment
Resource – opportunity to do something, Response (falls within these three categories): *Response (cognitive/practical); Reasoning (judgement); Reaction (emotional)*
Outcome – the resulting effect (Jagosh, 2019)

Draft Statements		Source
Marketing of programmes		
1. Marketing to Dads		
*'**If** the text of the marketing materials explicitly invites fathers to join the project and outlines project content and activities focusing on/ including Dads (resource)*	*…**then** Dads may feel more willing to engage (reasoning), or more likely to attend (outcome)… **because** they expect more Dads will be present and will be more willing to share their experiences and learn from each other (reaction)'.*	Preparation for Birth and Beyond: a resource pack for leaders of community groups and activities (2016), Schrader McMillan et al. review of evidence on antenatal education (2009)
2. Marketing to Include Specific Ethnic Groups		
a) 'If the text of the marketing materials (is in a specific language or) explicitly states that different languages can be understood and that conversations are possible using these languages (resource)	*…**then** parents with English as a Second Language may feel that their needs will be understood (reasoning)… **because** the programme facilitator and other parents in the programme will be fully aware of their experiences and/or concerns and may be able to offer their own response and reassurances (outcome)'.*	Preparation for Birth and Beyond (2016), EIF engaging disadvantaged and vulnerable parents: an evidence review (2019)
b) 'If the text of the marketing materials explicitly states that project content will be inclusive/sensitive to the needs of specific faiths and cultures (resource)	*…**then** people in these cultures may feel more willing to engage (reasoning), or more likely to attend (outcome)… **because** they expect more parents from these faiths and cultures will attend (reasoning)'.*	Preparation for Birth and Beyond (2016)
Contact with practitioners		
3. Contact Process		
*a)'**If** expectant mothers are contacted via telephone (resource)*	*…**then** this allows for an initial discussion of their needs and their family's needs (resource) and an opportunity for them to consider why an antenatal programme may be helpful (reasoning) and make them more likely to try a session of a programme (outcome) **because** it gives them knowledge about what is available and how provision may meet these needs (resource)'.*	Observations of antenatal pathway meetings
b) 'If expectant mothers are contacted by telephone or face-to-face discussion to be offered information on the different programmes available to them (resource)	*…**then** this provides an opportunity to discuss their needs and their family's needs (resource) and they may be more aware of what is on offer (outcome) and more likely to agree to try a programme session (outcome) **because** there is 'space' to introduce the focus of programmes and the impact these could have (resource) and they can consider what may be*	Observations of antenatal pathway meetings

(*continued on next page*)

Table 1 (*continued*)

Draft Statements		Source
	helpful for them (reasoning)'.	
4. Signposting and Referrals		
*a)'**If** midwives have information available to them on the range of community antenatal programmes available for expectant parents and how they are focussed (resource)*	*…**then** appropriate signposting will take place and referrals will be made that are in line with the priority needs of those parents/families (outcome), **because** midwives are able to recognise what action or support would be most beneficial in these instances (response)'.*	Observations of antenatal pathway meetings
*b)'**If** midwives have received training on the importance of covering each of these programmes where relevant to the parents' needs (resource), AND they have the time within an antenatal appointment to do this (context)*	*…**then** appropriate signposting will take place and referrals will be made that are in line with the priority needs of those parents/families (outcome), **because** midwives are able to recognise what action or support would be most beneficial in these instances (response)'.*	Observations of antenatal pathway meetings
*c) **'If** midwives are unable to recognise what action or support would be most beneficial for expectant parents (context), [reverse programme theory to above]*	*…**then** appropriate signposting and referrals would not take place or may not be appropriate for that individual or families' needs (outcome), **because** midwives do not have a full range of information or the training to understand what is on offer to support different needs (resource)'.*	Observations of antenatal pathway meetings
d) '*If certain programmes are aimed at women within a specific stage of pregnancy, covering a certain gestational window (resource),*	*…**then** midwives and programme practitioners can check women's eligibility and signpost or refer them to this programme if appropriate and the gestational timings fit (response), **because** they are aware of whether they are eligible for this (reasoning)'.*	Observations of antenatal pathway meetings
*e) **'If** certain programmes are aimed at women within a specific stage of pregnancy, covering a certain gestational window (resource) and practitioners are not aware of these restrictions (context),*	*…**then** women can be signposted or referred when they are not eligible (response), causing lower levels of uptake (outcome) **because** women are not included in the intervention (outcome - unintended)'.*	Observations of antenatal pathway meetings
f) *' **If** women are eligible for a range of community antenatal programmes at specific stages in their pregnancy (resource), [negative programme theory]*	*…**then** the midwife, practitioner or woman is required to prioritise which would be most advantageous for the woman and her family (reasoning) **because** enrolling onto one programme may use up all available time to attend activities (response)'.*	Observations of antenatal pathway meetings
*g) **'If** a longer period of time is available for individual-practitioner communication when compared to standard antenatal appointments*	*…**then** parents may feel more valued (reaction) and be more likely to attend a recommended programme (outcome), **because** they have had a longer time*	Better Births; continuity of carer agenda (2017)

Table 1 (*continued*)

Draft Statements		Source
in hospital/GP settings (resource)	*window to discuss their individual circumstances (resource) and therefore feel the practitioner has recommended something beneficial to them, considering their individual needs (reasoning)'.*	
5. Role of/Attributes of Practitioner		
*a) **'If** compassion and respect are employed by the practitioner (resource),*	*…**then** this can create a feeling of trust on behalf of the parent (reaction), leading to clear individual-practitioner communication, improved satisfaction with the process and increased likelihood to attend a programme (outcome), **because** they feel their needs and concerns have been listened to (reaction)'.*	EIF: engaging disadvantaged and vulnerable parents: an evidence review (2019)
*b) **'If** practitioners with similar experiences to the target population, such as speaking the same language and same gender are recruited to programmes (resource),*	*…**then** this can help parents feel their queries and concerns will be heard (reaction), **because** they feel they will be able to communicate their own needs (outcome as well as reaction). They may also feel 'safer', as they feel these needs will be listened to (outcome as well as a reaction)'. In response, they may be more open with their feelings and more likely ask for help (outcome)'.*	EIF: engaging disadvantaged and vulnerable parents: an evidence review (2019)
Accessibility of programme sites		
6. Project Logistics		
*a) '**If** the programme is delivered at a venue that is easily accessible by public transport (context),*	*…**then** parents may feel that it would be easy to get there (reasoning) and be likely to attend (outcome), **because** they can get there and back home quickly and efficiently (response, reasoning)'.*	Observations of antenatal pathway meetings
*b) **'If** the project session is offered at times of day outside of school 'drop off' and 'pick up' times for older children (resource),*	*…**then** parents may feel less concerned about meeting the needs of other family members (reaction) and be more likely to attend the session (outcome), **because** they are more 'free' to think about this (outcome)'.*	Observations of antenatal pathway meetings
c) 'If childcare is offered 'on site' for the duration of programme sessions (resource),	*…**then** parents may feel less concerned about meeting the needs of other family members (reaction) and be more likely to attend the session (outcome), **because** other children's needs are being met (reasoning) and they are more 'free' to think about this (outcome)'.*	Observations of antenatal pathway meetings

Part 2: results from the full review of literature

After removal of duplicates, 2195 papers and reports were included in abstract screening. A total of 101 papers and grey literature

considered potentially relevant were obtained in full. 41 papers and 1 grey literature report were selected for data extraction. Eight of these were selected for citation searches as most relevant to draft review programme theories and most recently published, going back to 2017. These resulted in 81 additional studies and reports identified for full text review. 6 additional papers were included from these searches, resulting in 48 total papers included in total, outlined in Fig. 2 below.

The review suggested several factors can impact on whether women access antenatal provision. These relate to how community antenatal programmes are described and communicated and whether individuals feel these are needed. The level of understanding of midwives and time to discuss programmes is important. This can be combined with practitioner qualities including compassion, reassurances around cultural safety, language support and consideration of fathers' views. This includes wider factors about availability of accessible venues (low cost, available different times, without connections to other agencies).

Table 2 below summarises all included literature. Most of the literature outlined why and when women attended antenatal sessions. Some of the texts extracted for review incorporated theoretical and conceptual frameworks related to how healthcare is regarded or pregnant women's use of antenatal services. These included how people's beliefs about their own health and whether they need or 'qualify' for care can affect their actions: Azjen's (1991) theory of planned behaviour (Ajzen, 1991); Janz & Becker's (1984) review of the health belief model (Janz and Becker, 1984); Bluestein & Rutledge's (1993) theoretical framework for determinants of late prenatal care, using this health belief model (Bluestein and Rutledge, 1993); and Dixon-Wood's (2006) candidacy concept, outlining that access is not a fixed idea, but affected by evolving ideas of what they should seek care for and changes in health provision (Dixon-Woods et al., 2006). Others considered accessing healthcare more broadly, including: Gulliford et al's (2002) theory of access to care relevant to the supply and demand of services (Gulliford et al., 2002); Cooper et al's (2002) barriers to equitable healthcare care for racial and ethnic groups model (Cooper et al., 2002); Andersen's (1995) model of healthcare use, considering environment, characteristics of the population, as well as behaviour as influences on outcomes (Andersen, 1995); and Thaddeus & Maine's (1994) three delays to care theoretical framework, highlighting what impacts decisions to find out what support is available (Thaddeus and Maine, 1994).

Results by review programme theory

Table 3 summarises the findings by review programme theory, which are then described in detail below.

Marketing of programmes

Theory around marketing of programmes relates to how they are communicated and described and how processing and acceptance of information may be influenced by its perceived importance.

Inclusion of fathers in programme communication and marketing that different languages can be understood, stated inclusivity of programme content incorporating different faiths, cultures

The benefits of actively aiming to engage with fathers and expressing that antenatal sessions consider their needs was only reported by a small number of studies. In these examples, future fathers appeared to be receptive to suggestions of father-only provision and felt that delivery and/or the environment could facilitate useful links with other men and may have encouraged them to raise thoughts and questions about preparing for fatherhood (Nash, 2018; Bennett et al., 2017). The marketing or availability of information in different languages may also help to encourage interest (Filby et al., 2020; Higginbottom et al., 2019). The literature did not provide details of the content or languages included in any pamphlets created (apart from Douglas et al., 2012 (Douglas, 2012), letters were sent in Bengali, Urdu) or if marketing improved take up. The reviewed literature did not discuss value in suggesting antenatal appointments or interventions could incorporate different languages and

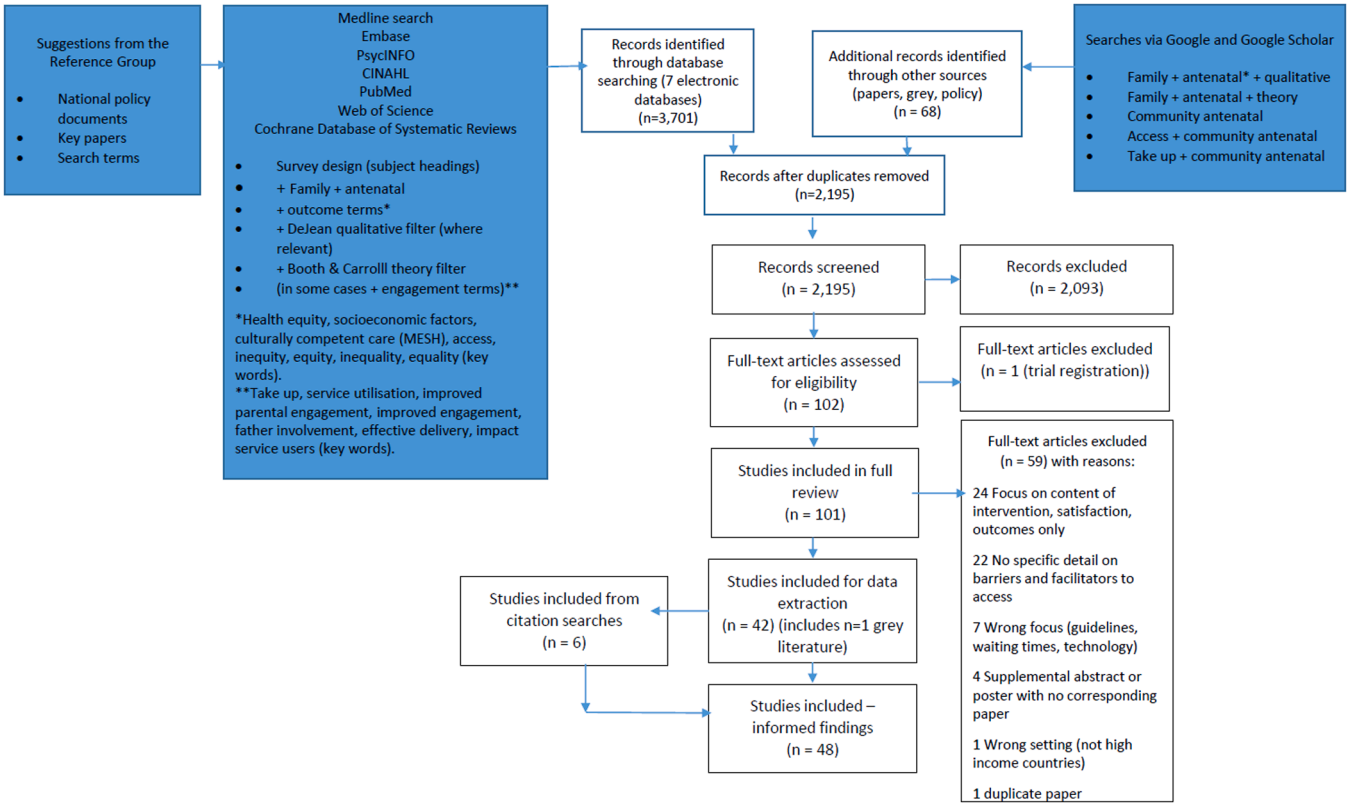

Fig. 2. Search flow chart.

Table 2
Summary of all included literature[1,2].

Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
Systematic, literature and realist reviews and meta-syntheses						
Balaam et al. (2013) (Balaam et al., 2013)	Qualitative systematic review	16 studies	Migrant women's perceptions of their needs and experiences *Range of settings*	-Refugees and asylum seekers require childcare and travel support and some accommodation is restrictive (e.g.: fixed mealtimes) -A lack of cultural appreciation and a sufficient interpretation service is a barrier to access	UK	5b) Practitioners with similar experiences and background to target population
Bennett et al. (2017) (Bennett et al., 2017)	Realist synthesis	27 studies	Social connectivity interventions during transition to parenthood *Community (includes online)*	-Fathers respond positively to the opportunity to link with other Dads, including programmes they can engage with alongside their children -Assumption that antenatal activity will be focussed on the mother and not them	CAN[3]	1.Marketing to Dads
Chin et al. (2011) (Chin et al., 2011)	Meta-synthesis	6 studies	Fathers' experiences of their transition to fatherhood *Range of settings*	-Men sometimes were excluded from antenatal sessions because they had to be in work -A choice of different times would provide more options for attending and increase the likelihood of both parents being there	UK	6b) Project sessions offered at different times of day
Downe et al. (2019) (Downe et al., 2019)	Evidence synthesis (Cochrane)	85 studies 41 countries, 8 high income	Provision and uptake of routine antenatal services *Range of settings*	-Women want to feel they have the time available to talk about 'various aspects of their pregnancy without feeling rushed' (p.7) -Group model of antenatal care allows for a larger amount of contact time	UK	4 g) Longer time period available for individual-practitioner communication
Downe et al. (2009) (Downe et al., 2009)	Meta-synthesis	8 studies	Barriers to antenatal care for marginalised women in high income countries *Range of settings*	-Costs of providing 'interpreters, translators or advocates' may not be sustainable - It can be difficult for families to locate information in a 'relevant and understandable format' (p.524)	UK	2a) Marketing states different languages can be understood Add. (prioritisation of other needs above mother and baby)[4]
Higginbottom et al. (2019) (Higginbottom et al., 2019)	Narrative synthesis systematic review	40 studies	Experience of and access to maternity care in UK by immigrant women *Range of settings*	-Lack of availability of information in different languages, leads to lack of understanding of what is available -Low levels of language comprehension could impact on amount of agency established in a practitioner-woman contact	UK	2a) Marketing states different languages can be understood 5b) Practitioners with similar experiences and background to target population
Hollowell et al. (2012) (Hollowell et al., 2012)[5] Report, National Perinatal Epidemiology Unit	Systematic review and mixed methods synthesis	21 studies met minimum quality criteria	Women's views on early initiation of antenatal care by Black and Minority Ethnic Women *Range of settings*	-Practitioners not always allowing women time to ask questions or assisting them in doing this -Women are not always provided with the opportunities to have an interpreter, over-reliance on family members	UK	2a) Marketing states different languages can be understood
McKnight et al. (2019) (McKnight et al., 2019)	Systematic review and thematic synthesis - qualitative	6 studies	Asylum-seeking women's views and experiences of UK maternity care *Range of settings*	-Asylum-seeking women can struggle to pay to travel to a venue, due to receiving 'cashless benefits' (p.21) -Women would benefit from support from bilingual support workers and interpreters to help address confusion over language and role of practitioners	UK	6a) venue easily accessible 5b) Practitioners with similar experiences and background to target population

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Table 2 (*continued*)

Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
Oakley et al. (2009) (Oakley et al., 2009) Report, National Perinatal Epidemiology Unit	Systematic review	16 studies	Effectiveness of interventions to increase early initiation of antenatal care in socially disadvantaged and vulnerable women *Range of settings*	-Use of 'lay women' to help encourage women to use programmes, while reassuring that these can reflect cultural beliefs and practices (p.30) -Through attending a session, women could also be losing earnings, while also having to pay for childcare and travel	UK	5b) Practitioners with similar experiences and background to target population 6a) venue easily accessible
Rayment-Jones et al. (2019) (H Rayment-Jones et al., 2019)	Realist synthesis	22 papers	Women with social risk factors and their experiences of UK maternity care *Range of settings*	-stereotypes are sometimes reinforced by practitioners, this requires more time to be spent in local communities to understand local cultures (p.466) -Antenatal care is sometimes seen as a way to be controlled or checked on	UK	5b) Practitioners with similar experiences and background to target population Add. (considered candidacy for antenatal care)
Protocols						
Finlayson et al. (2016) (Finlayson et al., 2016) **(protocol for Downe et al. 2019)**	Protocol for qualitative evidence synthesis	(see Downe et al., 2019)	Factors that influence the uptake of routine antenatal services by pregnant women *Range of settings*	-Lack of available transport can prevent women attending, this can include cultural backgrounds 'where women do not have the autonomy to decide to attend, or to pay for transportation, or both' (p.2) -Prioritisation of attending an antenatal session may depend on perceptions of what contributions these would make to women's lives	UK	6a) venue easily accessible Add. (considered candidacy for antenatal care)
Single Studies (eg: qualitative, mixed methods, RCT)						
Aquino et al. (2015) (Aquino et al., 2015)	Qualitative	20 midwives, semi-structured interviews	Pregnancy as an ideal time for intervention to address the complex needs of black and minority ethnic women *Hospital, Community*	-Difficulty in understanding the woman due to poor English can impact on quality of care received and women may have different expectations of maternity care from different countries -'Cultural training' needs to be further researched and improved and should be expanded to all midwives (p.377) -Complexity of lives of women from ethnic minorities include housing, immigration, mental health need to be addressed	UK	5a) Compassion and respect help to facilitate individual-practitioner communication Add. (prioritisation of other needs above mother and baby
Atkinson et al. (2017) (Atkinson et al., 2017)*	Qualitative	23 midwives, focus groups and interviews	Midwives' experiences of referring obese women to a weight management service *Community*	-Participants had limited information about the programme and different interpretations of what it was aiming to achieve -Some midwives felt there were too many other things to cover in an appointment and 'were other areas to discuss that had a higher priority' (p.105)	UK	4a) Information available to midwives on potential programmes and time to introduce these
Bradbury-Jones et al. (2015) (Bradbury-Jones et al., 2015)	Qualitative	5 women, interviews	Disabled women's experiences of accessing and utilising maternity services *Community*	-Women expected to be judged by practitioners and 'approached services tentatively' as a result (p.6)	UK	5a) Compassion and respect help to facilitate individual-practitioner communication
Breustedt & Puckering (2013) (Breustedt and Puckering, 2013)*	Qualitative	4 women, programme participants, unstructured interviews	Women's experiences of the Mellow Bumps antenatal intervention *Community*	-Venues in some settings causes concern of being judged (seen as 'stigmatising') -Need for 'greater promotion of and referral to the Mellow Bumps groups among health professionals' (p.187)	UK	Add.(negative connotations of venue)

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Table 2 (*continued*)

Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
				midwives not always aware it exists		
Bulman & McCourt(2002) (Bulman and McCourt, 2002)	Qualitative case study	12 women, interviews and focus groups, health professionals	Somali refugee women's experiences of maternity care *Hospital, Community*	-Midwives had different perspectives of what constituted a need for a professional interpreter -Need to use family members to interpret during appointments as language support was not available -Only full language support can help to ensure equal access	UK	2a) Marketing states different languages can be understood
deMontigny et al. (2020) (de Montigny et al., 2020)*	Qualitative	36 health professionals, semi-structured	Impact of an interdisciplinary programme supporting father involvement *Community*	-Fathers sometimes feel like 'second class parents' (p.1007) -Practitioner environments can feel very gendered and skewed towards women's needs -The programme helped practitioners be more aware of fathers' perspectives	CAN	Add. (stereotypes about fathers' roles)
Douglas (2012) (Douglas, 2012)*	Pilot intervention (no control group)	Women and staff (numbers not given), Pre and post questionnaires (women) End interviews (women, staff)	Breastfeeding home-based antenatal pilot for South Asian families *Community*	-'Intensive' contact from health visitors and children's centre staff created a feeling of trust amongst women (p.30) -Availability of the intervention at times to suit the family can help, otherwise expectations of the intervention to fit within certain times can impact on attendance	UK	4 g) Longer time period available for individual-practitioner communication 6b) Project sessions offered at different times of day
Filby et al. (2020) (Filby et al., 2020)*	Qualitative	10 women, semi-structured interviews	User's perspectives of specialist migrant maternity service, *Community*	-Women would not necessarily expect the midwife to be able to help with issues outside of clinical monitoring -leaflets in their own language would be useful, otherwise English worded documents are 'of limited use or ignored altogether' (p.656)	UK	2a) Marketing states different languages can be understood
Goodwin et al. (2018) (Goodwin et al., 2018)	Qualitative (ethno)	9 women, 11 midwives, semi-structured interviews, observations	The midwife-woman relationship in a South Wales community *Community*	-Women sometimes feel antenatal provision is 'unnecessary as they were not unwell' (p.353). -Differences in beliefs about what is acceptable in terms of cultural practices in pregnancy and with a newborn, can cause tension in the midwife-woman relationship	UK	Add. (capacity/candidacy of women) 5a) Compassion and respect help to facilitate individual-practitioner communication
Haddrill et al. (2014) (Haddrill et al., 2014)	Qualitative	27 women, attending booking 'late', semi-structured	Understanding delayed access to antenatal care *Hospital, Community*	-Number of factors influence 'late' bookings -Beliefs that antenatal care was only needed if there was a problem -Need to feel 'safe' and settled in a local area first (p.7) -Antenatal care seen as a socially acceptable thing to do, rather than because women need it	UK	Add. (capacity/candidacy of women)
Hatherall et al. (2016) (Hatherall et al., 2016)	Qualitative	21 women, interviews, 32 women from four different communities, 26 health service staff members, focus groups	Timing of the initiation of antenatal care *Hospital, Community*	-Attendance at a booking appointment can be delayed because of 'competing demands and responsibilities', including 'housing, education, employment and caring responsibilities' (p.5) -Previous pregnancies may	UK	Add. (prioritisation of other needs above mother and baby) Add. (capacity/candidacy of women)

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Table 2 (*continued*)

Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
				have been straightforward and women may not have accessed antenatal care in a home country, influencing whether women in some communities feel there is anything useful in UK antenatal care		
Hesselink & Harting (2011) (Hesselink and Harting, 2011)*	Mixed methods (ethno, interviews, surveys)	119 women, semi-structured interviews, focus groups, observations, questionnaire	Multiple risk factor perinatal programme for a hard to reach minority group *Community*	-Use of a Turkish community worker helped to overcome 'cultural and language barriers' (p.2026) -These staff were more effective in recruiting women to the intervention as they could explain this 'in their own language' (p.2031)	NET[6]	5b) Practitioners with similar experiences and background to target population
Humbert et al. (2009) (Humbert and Roberts, 2009)	Qualitative	143 women, focus groups	The value of a learner's stance, lessons learned from pregnant and parenting women *Hospital, Community*	-Importance of the role played by all staff in influencing the perception of how effective a service is in displaying 'cultural competence' (p.594) -Understand that cultural beliefs are based on a wish to do a good job in being a parent	U.S.A	5b) Practitioners with similar experiences and background to target population
Laws et al. (2016) (RA Laws et al., 2016)*	Quasi-experimental (control group)	37 practitioners, survey, including 4 interviews	Recruitment methods for an mHealth intervention targeting mothers *Hospital, Digital*	-Practitioners cited lack of time as the main barrier to referring women to the intervention, as there are were a number of other tasks that had to be achieved first -Recommendations to further promote the programme through leaflets in information packs given out to parents	AUST[7]	4a) Information available to midwives on potential programmes and time to introduce
Levy (2006) (Levy, 2006)	Qualitative	12 midwives, observations, interviews	Processes by which midwives facilitate informed choices during pregnancy *Hospital, Community*	-Midwives were time pressured and this impacted on the range of topics covered during booking appointments -The likelihood of a subject being introduced by the midwife was affected by how important the midwife considered it to be and the time available (p.119)	UK	4a) Information available to midwives on potential programmes and time to introduce
Luyben et al. (2005) (Luyben and Fleming, 2005)	Qualitative	23 women, interviews	Women's needs from antenatal care in three European countries *Hospital, Community*	-Women felt responsible for becoming a mother and wanted to build their confidence by finding out new information	SWIT[8]	Add. (capacity/candidacy of women)
McCalman et al. (2015) (J McCalman et al., 2015)*	Qualitative	7 women, 3 family members, 18 healthcare workers, focus groups	Implementation of the Cape York Baby Basket programme *Community*	-Indigenous health workers can help create a feeling of safety, through referring to 'Murri way' (way of talking about health issues, p.7) and using specific language terms -Can help to demonstrate respect for valued cultural practices	AUST	2b) Marketing states that content will be inclusive of faiths and cultures 5b) Practitioners with similar experiences and background to target population
McLeish (2005) (McLeish, 2005)	Qualitative	33 women, semi-structured interviews	Maternity experiences of asylum seekers, *Community*	-Midwives provided 'unhelpful or even undermining advice' as they did not fully understand poor quality living conditions and financial circumstances (p.783)	UK	5a) Compassion and respect help to facilitate individual-practitioner communication
Meyer et al. (2016) (Meyer et al., 2016)	Qualitative	24 women, shortage and non-shortage obstetric care service areas, semi-structured	Prenatal care for women in rural and peri-urban areas of Georgia *Hospital, Community*	-Women felt like 'passive recipients of care' (p.1364) and had low self-worth, combined with poor communication and a lack of continuity of contact with a provider	U.S.A.	Add. (capacity/candidacy of women)

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Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
Mkandawire-Valhmu et al. (2018) (Mkandawire-Valhmu et al., 2018)*	Qualitative (ethno, interviews)	13 women, 4 older women (peer support), interviews, observations	Creating supportive spaces for pregnant African American women living in Milwaukee *Community*	-Role of older African American women in providing peer support, enabled pregnant women to feel a 'sense of belonging' and reduced concerns about how they would be treated (p.1801) -This format also allowed the sharing of similar life experiences	U.S.A.	5b) Practitioners with similar experiences and background to target population
Moreau et al. (2015) (Moreau et al., 2015)	Mixed methods (surveys, interviews)	97 women, 91 men, questionnaires, semi-structured interviews	Perception of Franco-Ontarian parental couples in the Ottawa region *Hospital, Community*	-Parents find it difficult to attend sessions if timings clash with work commitments -'Time, duration and place of meetings' are often barriers to the involvement of fathers (p.39)	CAN	6b) Project sessions offered at different times of day
Nash (2018) (Nash, 2018)*	Qualitative	25 men about to become fathers, semi-structured	Father-only antenatal preparation classes *Hospital Community*	-Programme marketed as a space to discuss their concerns as a man, 'away from women' (p.303) -Programme participants valued the opportunity to meet other fathers and to have their questions answered by a male facilitator	AUST	1.Marketing to Dads
Nypaver & Shambley-Ebron (CF Nypaver and Shambley-Ebron, 2016) **(2016)**	Qualitative (participatory research)	11 women, community-based participatory research using photovoice	Meaningful prenatal care among African American women *Hospital*	-Even use of the bus can be a barrier to getting to venues to access provision, because it is too expensive -Provision of an 'adequate' amount of time in appointments with practitioners is important to allow sharing of information and the building of relationships 'where information exchange is trustworthy' (p.562)	U.S.A.	6a) venue easily accessible 4 g) Longer time period available for individual-practitioner communication
Olander & Atkinson (2013) (Olander and Atkinson, 2013)*	Qualitative	16 women (obese), semi-structured phone interviews	Women's reasons for not attending a weight management service, *Community*	-Time of day can impact on availability to attend, evening or weekend sessions would avoid difficult discussions with employers about taking time off work each week (p.1229) -Complex health issues may mean additional clinical appointments which also require time away from work	UK	6b) Project sessions offered at different times of day
Parry et al. (2019) (Parry et al., 2019)*	Qualitative	16 fathers, 6 service provider staff, interviews, focus groups	Fathers' and programme facilitator's experiences of a community-based programme (Antenatal Dads and First Year Families) *Community*	-Dads tend not to be aware of what antenatal services are available to them or how to get involved with these -Connections were made with other fathers 'that, without attendance at the program, would not have occurred' (p.6) -Having their own meetings with other Dads allowed for expression of feelings and emotions	AUST	Add. (considered candidacy for antenatal care) 5b) Practitioners with similar experiences and background to target population
Phillimore (2016) (Phillimore, 2016)	Qualitative	82 women, semi-structured questionnaire, interviews	'New' migrant women's perspectives on access to antenatal care *Community*	-Practitioners have not been given details about the issues and barriers faced by migrant women, to help enable them to 'develop their own health cultural capital' (p.158) -Women were focused on tackling 'immediate crises' or talking with their solicitor and this took priority over	UK	5a) Compassion and respect help to facilitate individual-practitioner communication Add. (prioritisation of other needs above mother and baby)

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Table 2 (*continued*)

Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
				attending appointments (p.157)		
Quintanilha et al. (2018) (Quintanilha et al., 2018)*	Qualitative (ethnography)	28 women, focus groups, 8 programme providers, observations	Community-based perinatal programme while facing difficult life circumstances *Community*	-Issues of accessibility are significant in rural areas, especially cost to travel to attend prenatal appointments while also not being able to be at work -'Women tried to be agents of their own health but coped with structures posted by difficult life circumstances' (p.7)	CAN	6a) venue easily accessible Add. (considered candidacy for antenatal care)
Randall (2019) (Randall, 2019)*	Pilot intervention (no control group)	Sample and method not stated	SAPlings project, alternative antenatal care pathway *Community*	-Concern that women will find some venues 'off-putting', due to some of these including social work departments (p.734)	UK	Add.(negative connotations of venue)
Riggs et al. (2017) (Riggs et al., 2017)*	Qualitative	19 women, focus groups	Refugee women attending group pregnancy care *Community*	-Programme was designed to be 'culturally appropriate' (p.146) -Included content delivered in relevant languages by a bicultural worker -Geographic location of sessions worked well as located near-by and easy to walk to, also familiar to women and partners	AUST	5b) Practitioners with similar experiences and background to target population 6a) venue easily accessible
Teate et al. (2011) (Teate et al., 2011)	Mixed methods descriptive study	33 women, clinical information, antenatal and postnatal questionnaires	Women's experiences of group antenatal care, *Hospital*	-Midwives were not clear on why group care would be useful for women, which contributed to a lack of promotion of the model (p.144) -Women prefer to have their partners present during antenatal sessions, absence of partners can be a negative for them	AUST	4a) Information available to midwives on potential programmes and time to introduce these 4b) Midwives unable to recognise what action or support would be most beneficial. Add. (stereotypes about fathers' roles)
Thomson et al. (2013) (Thomson et al., 2013)	Qualitative	92 women (18 focus groups, 6 semi-structured interviews)	Women's experiences of antenatal care *Hospital Community*	-families ('wider family networks') can influence whether or not antenatal care is seen as necessary (p.214) -local community venues provided 'easy access to services and the opportunities to develop relationships with health professionals'	UK	Add. (capacity/candidacy of women) 6a) venue easily accessible
Utne et al. (2020) (Utne et al., 2020)	Qualitative	8 women, semi-structured interviews	Somali women's experiences of antenatal care, *Community*	-Women felt unsure of asking questions in appointments if practitioners made assumptions about their background (p.3)	NOR[9]	5b) Practitioners with similar experiences and background to target population
Widarsson et al. (2012) (Widarsson et al., 2012)	Qualitative	22 women, 10 men, focus groups, interviews	Support needs of expectant mothers and fathers *Hospital Community*	-Fathers need the opportunity to be with other fathers and some had attended specific groups, which allowed them to 'share their needs and experiences' (p.42)	SWE[10]	5b) Practitioners with similar experiences and background to target population
Winn et al. (2018) (Winn et al., 2018)	Qualitative	10 practitioners, interviews	Pregnant refugee women in a turbulent policy landscape *Hospital*	-Practitioners experience difficulties in ensuring refugee women understand content of information sufficiently to act on it.	CAN	5a) Compassion and respect help to facilitate individual-practitioner communication
Dissertations						
Begum (2011) (Begum, 2011)	Mixed methods (literature review, interviews)	10 women, interviews	Pregnancy related experiences of Bangladeshi immigrant women Hospital	-Lack of a private vehicle meant that women struggled to get to appointments and could take an hour to get there on public transport -Other difficulties included 'uncertainty over unemployment, underemployment,	U.S.A	6a) venue easily accessible Add. (capacity/candidacy of women)

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Table 2 (*continued*)

Citation	Study design	Sample	Focus, Setting	Summary of findings	Country	Informed findings (IPT number)
				unfavorable living condition' (p.157)		
Zachary (2016) (Zachary, 2016)*	Mixed methods (literature review, surveys)	9 studies, 7 women	Designing, implementing and evaluating a community-based antenatal education programme *Community*	-Design of a community antenatal programme needs to include a venue that is in the middle of the local community and 'on or near the bus route' (p.56) -Inclusion of paid for private transport (taxis) can increase attendance	U.S.A	6a) venue easily accessible
Grey literature						
The Department of Health Parents' views on the maternity journey and early parenthood (2009) (Department of Health 2009)	Qualitative report	3 qualitative studies, 10 women, 4 men (for one project), journey mapping, interviews, focus groups	Perceptions of the maternity journey *Hospital Community*	-Repeated contact with the same practitioner contributes to satisfaction in women and professionals -It is difficult for midwives to make time to answer queries during short appointment slots -Some are unsure about group sessions, including partner and groups for women from ethnic minorities and 'need to be reassured that they will 'fit in' and that there will be other people like them there' (p.14)	UK (England)	4 g) Longer time period available for individual-practitioner communication

[1] Format inspired by (Gilmer et al., 2016). Gilmer C, Buchan JL, Letourneau N, et al. Parent education interventions designed to support the transition to parenthood: A realist review. *International Journal of Nursing Studies* 2016; 59: 118–33.
[2] Literature marked with * in this table represents studies based on, or reviewing specific models of antenatal programme, including pilot programmes.
[3] Canada.
[4] Some additional Review Programme Theories were developed in the light of the literature reviewed, these are labelled with 'Add.'.
[5] Public report, rather than a published paper, as with Oakley et al. (2009) (not clear if these were peer reviewed).
[6] The Netherlands.
[7] Australia.
[8] Switzerland.
[9] Norway.
[10] Sweden.

that these would be understood. However, it did discuss how other routes such as word of mouth in a relevant language, worked well in encouraging engagement e.g.: bicultural staff at a refugee settlement for Karen women in Australia, in Riggs et al., 2017 (Riggs et al., 2017); and Turkish community workers recruiting Turkish women to a multiple risk factor programme in The Netherlands, in Hesselink & Harting, 2011 (Hesselink and Harting, 2011). Studies on specific interventions aimed at ethnic minorities (e.g. Somali refugee; migrant Pakistani; African American) and indigenous groups did explore how these were described to prospective parents but focussed on design, perceptions of impact.

Perceived candidacy to receive antenatal care (additional programme theory)

Individuals may not consider themselves as experiencing relevant 'illnesses and conditions' and therefore a candidate for a service (Mackenzie et al., 2013). Goodwin et al's (2018) ethnographic study reported midwives' frustrations with migrant Pakistani women missing appointments, as they did not consider themselves to be 'unwell' and in need of support (Goodwin et al., 2018). Such understanding of what is required could impact on whether information resonates. Acceptance of the pregnancy, including by families, can affect engagement according to Haddrill et al's (2014) (Haddrill et al., 2014) qualitative study on understanding delayed access to antenatal care. Beliefs and practices of the wider family can influence what is perceived as appropriate or needed (Thomson et al., 2013). Women can feel disengaged and unworthy of the process, because of limited detail on available support and lack of continuity from different providers according to Meyer et al's (2016) study of women's access to prenatal care in Georgia (Meyer et al., 2016). Review of these literature resulted in a new Review Programme Theory. *'If women are not clear on whether a pregnancy warrants clinical care and why (context) …then they may feel that any provision offered to them is not necessary (reasoning)…because they feel there are no identified needs to be met (reasoning)'.*

Prioritisation of other needs above mother and baby (additional programme theory)

The complexities of daily living can create a variety of demands on expectant women and partners. This is especially the case for those classed as vulnerable or marginalised as outlined by a few of the studies included. Issues connected with housing, immigration, caring responsibilities and physical and mental health can all take priority. These issues were often apparent during midwifery appointments as outlined in Aquino et al's (2015) research on complex needs faced by women from ethnic minorities (Aquino et al., 2015) and were considered by women to be valid reasons for delaying access (usually defined in literature as attendance at 'booking' appointment with a midwife beyond first 12 weeks of pregnancy) to standard antenatal care (Hatherall et al., 2016). Downe et al's (2009) meta-synthesis of barriers to antenatal care for marginalised women in high-income countries also reported this issue (Downe et al., 2009). The new Review Programme theory reflects these findings. *'If women are overwhelmed with specific needs related to the safety or survival of their family (context) …then they may not consider the provision of antenatal care as being of priority (reasoning, reaction)…because they are focussed on addressing immediate*

Table 3
Summary of results by review programme theory.

Review Programme Theory	Findings from the Literature Reviewed
Marketing of programmes	
1. Marketing to Dads	Literature reporting on the value of expressing Dads-focussed content suggested this helped future fathers to feel the environment will allow connection with other men.
2a. Marketing to Specific Ethnic Groups: Marketing that different languages can be understood	Word of mouth via community workers from the community itself or with an understanding of the culture can encourage take up.
2b. Marketing to Specific Ethnic Groups: Inclusivity of programme content incorporating different faiths, cultures	Studies on specific interventions aimed at ethnic minorities and indigenous groups, focused on design and perceptions of impact, rather than how they were described to families.
Additional programme theory: Perceived candidacy to receive antenatal care	Attendance at programmes can depend on whether women feel they are candidates for this type of care, including acceptance of the pregnancy and perceived value of the provision.
Additional programme theory: Prioritisation of other needs above mother and baby	Other specific needs such as housing and responsibilities for other family members can be seen as needing more immediate attention over attending antenatal programmes.
Contact with practitioners	
4a, 4b, 4 g. Signposting and referrals: Information available to midwives on potential programmes and time to introduce these and allowances of time for individual-practitioner communication	Time can be constrained, leaving little time to discuss antenatal programmes, for example in a midwifery appointment where clinical monitoring is prioritised. Time is also limited to discuss potential benefits of these programmes and to answer questions about them. Practitioners also need enough detail about the intervention to explain this clearly to families.
5a. Role of/attributes of practitioner: Attributes of the practitioner - compassion, sensitivity and the asking of questions	Compassion and respect can help to encourage access to health information. Reassurances to women that their views are respected helps to enhance a sense of cultural safety.
5b Role of/attributes of practitioner: Enhancing cultural safety via use of practitioners from same backgrounds; availability of language support.	Women expressed concerns that cultural beliefs and practices will be assumed or judged by practitioners. Practitioners from the same background can provide a feeling of cultural safety. A lack of language support or poor-quality support can lead to negative experiences in asking questions and trying to understand clinical discussions.
Additional theory: Stereotypes about fathers' roles	Practitioners can assume the needs and interests of fathers in pregnancy. There is a lack of information on how to include other 'birth partners' in provision (e.g.: same sex partners; other family members).
Accessibility of programme sites	
6a. Project logistics: Venue that is easily accessible on foot or via low-cost transport	The cost of travel by bus or taxi to venues can be a barrier to people attending antenatal programmes. It is important to situate provision near public transport routes to reduce costs as much as possible.
6b Project logistics: Scheduling programmes at different times of day	Flexibility of the timings of sessions is important to fit with parents' work commitments, with options of sessions at different times over different days.
Additional theory: Negativity with venue	The use of certain community venues that also incorporate other family services can be linked with negativity e.g.: concerns about parenting skills being connected with social services.

needs instead of this (outcome) '.

Contact with practitioners in different settings (hospital and community)

Information available to midwives on potential programmes and time to introduce these and allowances of time for individual-practitioner communication

Time allocated to midwifery appointments can be restrictive and prioritised for clinical monitoring and can leave little time for women to ask questions (Downe et al., 2019) and for midwives to answer any that had been asked (Department of Health 2009; Levy, 2006) work observed the discussions taking place within booking appointments and midwives were interviewed. The findings highlighted beliefs and expectations regarding what information should be given out, alongside a sense of limited time.

As indicated by Downe et al. (2019), a greater understanding of the context of the woman's life, including her needs, can be achieved through allowing time to ask relevant questions (Downe et al., 2019). A Department of Health (2009) report on the views of parents-to-be on maternity care in England (Department of Health 2009), linked more time with a midwife to a good experience. Time restrictions create a need to prioritise clinical needs, discussion of interventions and referrals can be left out (Atkinson et al., 2017). Time can be a block in promoting attendance, as with reports from midwives regarding a pregnancy and early years trial for a mobile phone intervention (Laws et al., 2016; RA Laws et al., 2016). Practitioners should be made aware of the design and content of the provision as limited knowledge can prevent descriptions of its value. This could reduce the likelihood of women agreeing to be referred (Atkinson et al., 2017). Teate et al's (2011) study reported that midwives cannot encourage interest in provision without an understanding of its intended purpose (Teate et al., 2011).

Attributes of the practitioner - compassion, sensitivity and the asking of questions

Several papers and policy reports outlined how women can become better engaged in details of what is available if health practitioners demonstrated kindness and respect (Winn et al., 2018). A lack of appreciation of a woman's requirements could result in the opposite effect. Limited engagement and confidence in asking questions can also stem from negative experiences with maternity services and expectations of disappointing interactions, as reported by disabled women (Bradbury-Jones et al., 2015). Another example of lack of sensitivity to the context of people's lives included asylum seekers being given condescending advice (McLeish, 2005). Papers reflecting on the development of outcomes for marginalised groups discussed the value of referencing cultural beliefs and practices, and how viewpoints are understood and respected, to develop trust within communities. Women may feel more secure in discussing these beliefs if this is in place (Withers et al., 2018; Humbert and Roberts, 2009).

Enhancing cultural safety via use of practitioners from the same backgrounds

Late attendance at booking appointments and limited engagement by women, particularly those from ethnic minorities, those seeking asylum and refugees originates in part from fears of judgement and that practices pre and post pregnancy would not be accepted (Goodwin et al., 2018) or had been pre-determined (Utne et al., 2020). Three papers reflected on successes of antenatal programmes in integrating cultural beliefs and practices by working with practitioners from the same background to the target population. These included an Australian intervention which offered Aboriginal community practitioners who understood practices in preparing for baby, while attending to clinical targets (J McCalman et al., 2015). The 'Little Sisters' in the Milwaukee Birthing Project in Wisconsin, was supported by 'Sister Friends' from the same African American communities, to provide peer support (Mkandawire-Valhmu et al., 2018). A Netherlands-based intervention recruited Turkish health workers to work alongside midwives to

promote cultural sensitivity (Hesselink and Harting, 2011).

Availability of language support

Two meta-syntheses of reported views from women outlined the power imbalance in antenatal appointments if women did not comprehend what was being discussed or have the chance to ask questions. Lack of availability of good quality interpreters or translators may have contributed to this issue. Some women did not identify or engage with provision due to a lack of understanding of English (Hollowell et al., 2012; Downe et al., 2009). A study with Somali women suggested differences in availability of language support and in opinion on what is an inadequate level of English to trigger these resources (Bulman and McCourt, 2002). This can be partly addressed by working with community workers who speak that specific language (Hesselink and Harting, 2011).

Stereotypes about fathers' roles (additional programme theory)

The literature reviewed suggested women benefit from the involvement of partners within antenatal sessions (Teate et al., 2011) although mixed sessions are not always relevant, such as for observant Muslims (Higginbottom et al., 2019). Practitioners should be aware of their assumptions about what provision is appropriate for fathers and the potentially negative effect of focusing on the woman only during standard appointments (de Montigny et al., 2020). Because partners tend to avoid asking questions during appointments (Masculinity, 2018), the role of fathers only provision with a male facilitator is valued, providing a safe space for talking about issues, including mental health (Parry et al., 2019). There was limited information on effectively including 'birth partners' as a wider definition, beyond fathers (e.g.: same sex partner; other family member; friend). This resulted in a new Theory: *'If fathers/Dads are not included in discussions with the midwife about their partner's care (resource) …then they may be less willing to attend any additional provision (outcome)…because they may feel excluded and of less importance to the pregnancy (reaction)'.*

Accessibility of programme sites

Venue that is easily accessible on foot or via low-cost transport, scheduling programmes at different times of day

Venues need to be within walking distance and feel 'local' to the community the programmes intend to reach. Even where healthcare is perceived to be 'free' as in the UK, specific hidden costs remain. The cost of travel, by bus or taxi has been highlighted as a well-known practical barrier (e.g. Finlayson et al., 2016; CF Nypaver and Shambley-Ebron, 2016). Public transport routes can provide a relatively cheap journey and venues can be planned around these (as outlined in (Zachary, 2016)). Working patterns of parents and childcare requirements implies that timings and length of sessions need to be flexible, as outlined by (Moreau et al., 2015) to encourage perceived benefits of classes (also Douglas, 2012; Chin et al., 2011) meta synthesis on fathers' experiences of their transition to fatherhood also outlined the importance of a range of different times and days (Chin et al., 2011).

Negative connotations of venue (additional programme theory)

Community-based programmes in this review provided tailored content and delivery in different environments, to instil feelings of reassurance (e.g.: pregnancy group centred care model in community to appear less clinical; meetings with fathers in pubs). Literature also highlighted that sessions can bring about negativity if specific venues are not initially discussed with the community. Breustedt & Puckering's (2013) (Breustedt and Puckering, 2013) qualitative evaluation of women's experiences of the *Mellow Bumps* intervention experienced negativity when asking women to attend sessions at family hubs if social services were also located there. This was due to an assumption that their skills would be judged. Randall (2019) reported on the same issue for the *SAPlings project*. This resulted in a new Theory: *'If families have had previous negative experiences with a venue or see this as connected to statutory services (such as social services) (resource) …then they may be fearful of attending sessions at this venue (outcome)…because they see a possibility that they could be judged (reasoning)'.*

Discussion

The aim of this review was to identify evidence in the literature that supported the review programme theories constructed. These theories related to what, how, why and in what contexts parents-to-be access community based antenatal programmes in high income countries. Only 16 of the 48 papers and reports identified focused on community interventions, rather than reporting data for access to standard antenatal care. Some of the theories were absent in the literature reviewed, suggesting the need for additional data collection before refinement and that existing research in those theory areas may be limited. Detail of responses and reasoning connected with take up was also in short supply as content focussed on background and context to the area under study.

Mechanisms were highlighted in three key areas: availability of time in practitioner appointments with women; the importance of providing a sense of cultural safety; and the potential of group sessions to offer feelings of belonging with others from the same backgrounds, including Dads. The review suggests adequate time is needed for practitioners to get to know women at the outset, which can set experiences throughout the pregnancy (Douglas, 2012; CF Nypaver and Shambley-Ebron, 2016; Department of Health 2009). Cultural safety was a main theme emerging during the review and helps women make links with peers and others (Phillimore, 2016; Humbert and Roberts, 2009; Aquino et al., 2015). The potential value of interventions for groups (e.g.: father, partners or birth partners; refugees; indigenous populations) connects with a desire to be with others 'like them' and implies requirements would be recognised and not judged (Oakley et al., 2009; Hesselink and Harting, 2011; J McCalman et al., 2015; Mkandawire-Valhmu et al., 2018; Parry et al., 2019; Riggs et al., 2017). The literature discussed content of programmes, rather than how they had been advertised and the process of contacting a woman. This information would progress understanding of to what extent limited engagement is due to structure and access, rather than behaviour. Much of the research focused on barriers faced by ethnic minorities, indigenous groups, vulnerable people, including refugees, those seeking asylum and evidenced links with maternal and infant mortality. There was little information on general issues faced by the whole population, including white backgrounds and Eastern European populations. Many studies were based on discussions with women who had attended antenatal provision. There were noticeably less evidence-based recommendations sourced from those who had not engaged.

Strengths and limitations

Rather than describing barriers and facilitators, the review has provided draft theories regarding different factors that impact on whether a parent-to-be accesses these programmes and sought to test these to provide practical information about how, why and in what contexts parents-to-be access this provision. The review followed the RAMESES (Wong et al., 2013) principles. Unlike a Realist Review, there was no plan to carry out iterative searches of linked literature and related material until theory saturation. The aim was to identify literature most relevant to the topic and to establish key theories. The Reference Group provided knowledge and expertise to help identify key literature and guide development of these theories. It also contributed stakeholder perspectives and confirmed issues influencing engagement. A wide range of sources were accessed for the review, including grey literature. Abstract screening and the full text review were checked by a second reviewer. Widening of the focus to include standard appointments allowed a richer evidence base, relating to the initial 'booking' appointment with a midwife and the importance of that relationship.

Many of the qualitative papers looked at the views of health practitioners and this helped deepen understanding of any disconnect about what provision was appropriate for women and why. Although some papers discussed ways to increase attendance, few reported value or effectiveness of these. Quantitative data could identify where a particular programme may have provided a measure of effectiveness, linked to a specific outcome for theory. However, it would have been missing key descriptive data regarding why. Discussions of what worked well as engagement approaches for trials also tended to be qualitative, indicating access problems and population behaviour. Understanding of the influence of contexts and mechanisms may have been further supported by quantitative information. However, the focus of the review was on narrative within papers and reports and not frequency or significance. It is designed to discover quality information relating to programme theory rather than cover all literature and it is possible that some papers have been missed. Another researcher working to the same objectives may have identified other literature and different theory (J. Jagosh, 2021).

Implications for practice and future research

Many of the published studies focussed on inequalities brought about by late bookings amongst ethnic minorities and marginalised communities. Women are reportedly not sure whether they will be understood or listened to. The literature reviewed suggests that the presence of staff from similar cultural heritage or trained in their beliefs and practices may help women and their partners feel more comfortable. Design of programmes will need to incorporate adequate contact time and assurances for cultural safety as well as choice in timings and location. This Review has been shared with the BSB programme to help inform future design of their provision. Further research is needed on the engagement of pregnant women from White and Eastern European backgrounds in the UK. Literature on the needs of other birth partners (e.g.: same sex couples; grandparents; peer support) and specific barriers to their engagement would also contribute to the field.

Conclusions

Several factors were identified through this Review that appear to impact take up of community antenatal programmes including: understanding and support displayed by health practitioners and community workers; cultural safety in sessions; and accessibility of venue. There was less evidence around facilitators such as marketing; referral pathways and how these could be improved; and issues faced by those not attending sessions or standard antenatal appointments. The role of practitioners, especially midwives, appeared to be key in reassuring women and enabling them to feel able to participate in activities. There was a clear gap in the literature around how this could be harnessed to encourage the giving out of information about programmes or encouraging people to attend.

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CRediT authorship contribution statement

Laura McLarty: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing, Project administration. **Susanne Coleman:** Conceptualization, Methodology, Validation, Supervision, Formal analysis, Writing – review & editing. **Maria Bryant:** Conceptualization, Methodology, Supervision, Writing – review & editing. **Gill Thornton:** Conceptualization, Methodology, Supervision, Writing – review & editing. **Rosemary R.C. McEachan:** Conceptualization, Methodology, Supervision, Writing – review & editing. **Rebecca Hawkins:** Conceptualization, Methodology, Supervision, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

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