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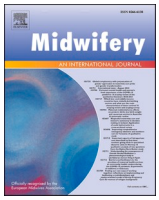

Antenatal education – Putting research into practice: A guideline review

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ABSTRACT

Problem: Antenatal care guidelines used in Australia are inconsistent in their recommendations for childbirth and parenting education (CBPE) classes for preparation of women and parents for pregnancy, childbirth, and early parenting.
Background: Clinical practice guidelines in maternity care are developed to assist healthcare practitioners and consumers to make decisions about appropriate care. The benefit of such guidelines relies on the translation and quality of the evidence contained within them. In the context of antenatal care guidelines, there is a potential evidence-practice gap with regard to CBPE.
Aims: This review aims to appraise the quality of Australian antenatal care guidelines in their recommendations for CBPE for women and partners.
Methods: Publicly available Australian antenatal care guidelines were identified including local health district websites and professional organisations pertaining to maternity care. Guidelines were reviewed independently, and the quality was assessed using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) tool.
Findings: Five guidelines were included in the review and appraised using AGREE II. With the exception of the Department of Health Pregnancy Care Guidelines, guidelines scored poorly across all six domains. When appraised according to specific CBPE recommendations for rigour of development, presentation, and applicability; all guidelines received low scores.
Discussion: Prenatal services remain largely unregulated across the board, with no systematic approach to make recommendations for CBPE and guidelines lacking in rigour with regard to CBPE.
Conclusion: Within the guidelines reviewed there was a lack of evidence-based recommendations provided for educators or consumers regarding childbirth and parenting education.

Introduction

Women in Australia and internationally are experiencing rising rates of medical interventions during childbirth, and the associated rates of morbidity and mortality are considered critically high (Dahlen et al., 2014). In 2021, more than one in three women gave birth by caesarean section, rising from 32 % in 2011 to 38 % in 2021, as reported in 2023 (Australian Institute of Health and Welfare 2023). International reviews of maternity services are calling for a reduction in these interventions to prevent associated morbidities (Dahlen et al., 2014,; Souza et al., 2010). Recommendations include the need for clear information about pregnancy, labour, birth, and early parenting to be provided for women and their families, and the promotion of informed decision making. However, it is not clear what evidence-based information and recommendations are included in practice guidelines, and what should be provided to educators, women, and partners.

The aims of childbirth and parent education (CBPE) are not only to influence health behaviours, but also to develop a support network for young families, prepare women and partners for childbirth, and to help prospective parents understand the social, emotional, psychological, and physical needs during pregnancy, labour, and parenthood (Gagnon and Sandall, 2007). Women sought to build relationships during their antenatal period to cope with anticipated isolation and loneliness after birth, however organisational factors often prohibited this opportunity

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for human connection (Brady and Lalor).

CBPE can influence labour and birth experiences by reducing maternal stress, improving self-efficacy, and lowering the rates of medical interventions during childbirth (Hong et al., 2021,; Levett et al., 2016), as well as reduce health care costs and outcomes for health services (Levett et al., 2016,; Levett et al., 2018). CBPE delivered in a systematic method can positively affect the mother's perception of their childbirth experience and their reported breastfeeding self-efficacy (Bilgin, 2020). Education has not, however, been identified to affect obstetric outcomes including the type of birth or reduce obstetric interventions (Bilgin, 2020). There are few widely adopted guidelines regarding content and delivery of CBPE programs, including for women from diverse backgrounds and with complex needs. Indeed, women in marginalized social groups were less likely to report shared decision making during birth (Attanasio et al., 2018) and Vanderlaan and colleagues identified lower odds of utilization of childbirth education for those with lower socioeconomic status. Hence, such demographics that reduce access to maternal health care also reduce access to childbirth education. This has important implications in working towards reducing disparities in maternal or newborn outcomes (Vanderlaan et al., 2022).

Clinical practice guidelines are developed to assist healthcare practitioners and parents to make decisions about appropriate maternity healthcare. The benefit of such guidelines relies on the quality of the evidence contained within them; however, the provision of CBPE by healthcare services remains largely unevaluated (Levett and Dahlen, 2019). In Australia, as in other countries, there are no requirements for formal qualifications for antenatal educators. Despite this, without regulation or a research agenda to confirm that current CBPE models are evidence-based, practice remains ambiguous (Downer et al., 2020). In Australia, antenatal education programs are predominantly designed by health professionals however, research has challenged the efficacy of this approach with significant differences existing between the clients' interests and the health care providers' perceptions of the clients' interests (Svensson et al., 2008). Similarly, a 2007 Cochrane review found that CBPE programs tended to be based on what educators believed to be important rather than on participant needs (Gagnon and Sandall, 2007). As reported by Hanson and colleagues, women have reportedly valued counselling, education services and support groups throughout their antenatal period, but identified that these were not always readily available to them (Hanson et al., 2009). Women also voiced wanting to learn about physiological and emotional changes, common discomforts during pregnancy, labour and birth planning, and infant care, and authors reported these forms of guidance to be largely missing from American antenatal guidelines (Hanson et al., 2009). These needs expressed by women were similarly identified in Australian studies of childbirth education during Covid (Hazel et al., 2023,; Levett et al., 2023). Thus, despite evidence of the benefits for women of having autonomy over decision-making in their own care, fundamental barriers exist which hinder women's' participation in collaborative antenatal care. Shared decision-making is not routine practice in antenatal care in several health jurisdictions in Australia (Todd et al., 2017). CBPE which is grounded in the needs and life experiences of women is needed in order to support women and parents' decision making and understanding of pregnancy, birth and early parenthood (Brady and Lalor).

There is therefore a significant gap between research and practice recommendations within clinical practice guidelines for CBPE, which warrants an examination of the currently available guidelines (Levett and Dahlen, 2019). This review aimed to appraise publicly available antenatal care guidelines across each Australian State and Territory as well as the nationally implemented Pregnancy Care Guidelines (Department of Health 2020), to evaluate the recommendations for CBPE, using the AGREE II tool (AGREE Next Steps Consortium 2017). The purpose of a clinical guideline is to assist health care practitioners to make decisions regarding patient care in specific clinical scenarios. A guideline should be systematically developed, providing recommendations for care based on high quality evidence. The objectives of a guideline should be explicit with a clear target population and intended outcomes. This review will inform recommendations to address research gaps and standardisation of guidelines and future practice, with the aim of improving access and quality of CBPE delivery across health services in Australia.

Method

Search strategy

National, state, and local health district websites were searched including metropolitan and regional/rural health areas. Grey literature was searched within publicly available sites in Australia, including *Google* and *Google Scholar*. Search terms used included "Antenatal Care Guidelines", "Antenatal Education Guidelines", "Childbirth Education", "Antenatal Classes, "Parent education" and "Antenatal education". Guidelines from professional organisations pertaining to maternity care within Australia were also searched.

Inclusion and exclusion criteria

Inclusion Criteria
Guidelines that were publicly available on National, State, and local health district (LHD) websites, professional organisation sites, Google, and Google Scholar.
Childbirth and parenting education were included in some capacity in the guideline.
Hospital specific guidelines were included if they were widely used within the state or territory (e.g., King Edward Memorial Hospital (WA) and the Royal Women's Hospital (VIC)).
Exclusion Criteria
General practitioner shared care guidelines (these often include an antenatal care schedule to follow rather than specific evidence-based recommendations and thus did not align with the research aim).

Data extraction

The guideline selection is summarised in a PRISMA flowchart in Fig. 1. Guidelines were searched for mention of "antenatal education", "childbirth education", "childbirth and parenting education", "parent education" and "education".

Quality assessment

The AGREE II tool was used to assess the quality of guideline recommendations for CBPE. The AGREE II tool is an internationally accepted instrument used to assess the quality and reporting of practice guidelines (Brouwers et al., 2016). Guidelines were also compared to CBPE recommendations within the Childbirth and Parenting Educators of Australia (CAPEA) standards (Childbirth and Parenting Educators Australia 2018).

The AGREE II tool is a 23-item tool comprising of six quality domains: scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability, and editorial independence, using a Likert scale of assessment. This instrument is endorsed by the World Health Organization and is used internationally for the development and evaluation of clinical guidelines (World Health Organization 2015). Guidelines were reviewed independently by two reviewers (AF plus one other of the cited authors) as per the AGREE recommendations (AGREE Next Steps Consortium 2017). Reviewer AF is a medical student who reviewed each of the include guidelines. The remaining reviewers reviewed one to two guidelines each. Where there were any discrepancies of two or more points, this was resolved by group discussion with all reviewers. The six domains were considered independently of each other. With respect to rigour of development, clarity of presentation and applicability, only the CBPE components of each guideline was reviewed in order to tailor this review towards CBPE specifically.

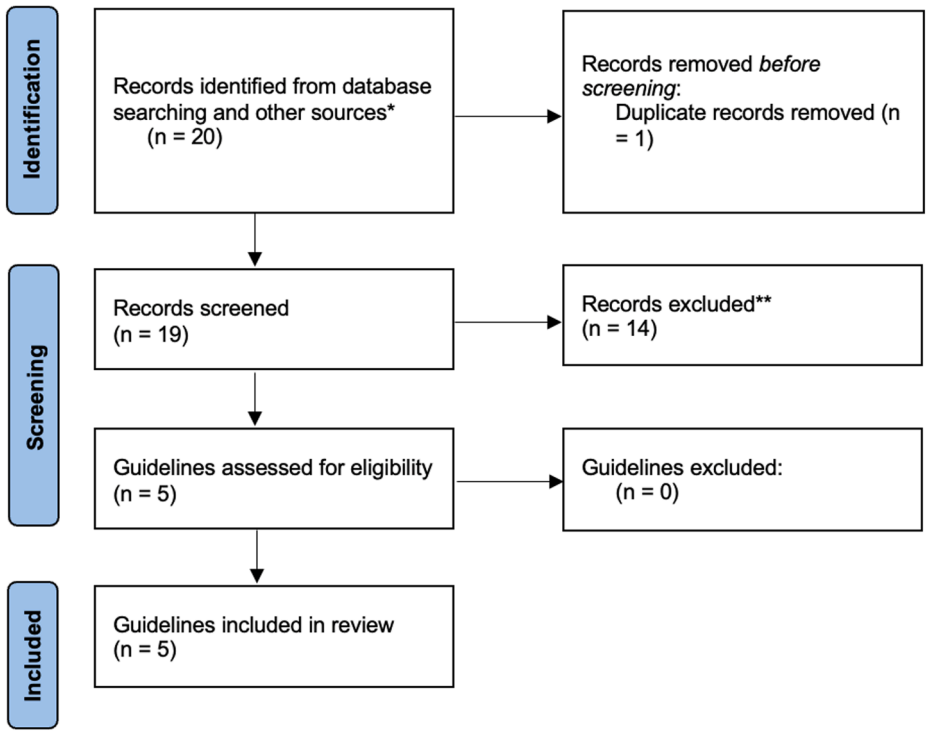

Fig. 1. Identification, screening, and inclusion of guidelines for the review.

Reflexivity statement

The author team consists of a medical student, three midwives, an epidemiologist with expertise in maternal health and two maternal health researchers and childbirth educators, working with pregnant and birthing women as allied health practitioners. The team has extensive experience in conducting maternity health research, with quantitative and qualitative research expertise in clinical trials, cohort studies, and expertise in childbirth education research, conducting quantitative trials and qualitative studies exploring women's experiences. We employed ongoing, recursive data examination, to ensure we arrived at a transparent interpretation involving robust discussions to examine our personal philosophies and any influence on the data. We actively sought to examine discrepancies in the data that challenged the categories we were constructing.

Data analysis

AGREE II scores were collated by reviewer AF. Upon agreement of scores within two points for each domain, the scores were tabled and averaged (Table 1). A score recommending the use of the guidelines in practice was also provided by each reviewer and averaged.

Findings

Five guidelines were included in this review. Two were national health guidelines (Department of Health 2020,; Royal Australian and New Zealand College of Obstetricians and Gynaecologists 2017), one was a state health organisation (South Australia Health 2017), and two were from maternity hospitals (King Edward Memorial Hospital 2016,; The Royal Women's Hospital Victoria 2020), which are in use by the wider health network in the respective states. All guidelines had been updated since 2016.

Table 1
Results of the AGREE II appraisal for each guideline.

Guideline	Domain 1: Scope and practice (%)	Domain 2: Stakeholder involvement (%)	Domain 3: Rigour of development (%)	Domain 4: Clarity and presentation (%)	Domain 5: Applicability (%)	Domain 6: Editorial independence (%)	Overall rating and recommended for use
Department of Health: Pregnancy Care Guidelines	100	100	25	36	25	100	4.5 Yes, with modifications
RANZCOG: Maternity Care in Australia	72	28	0	28	0	0	1.5 No
South Australia: Perinatal Practice Guidelines	67	17	4	19	6	4	2 Yes, with modifications
Royal Women's Hospital: Vic	31	28	1	6	6	0	1 No
Kind Edward Hospital: WA	72	8	2	3	0	0	1 No

Publicly available guidelines from every state and territory were not found, and a number of states have implemented the nationally available guidelines by the Department of Health (Department of Health 2020). Results from the AGREE II assessments are documented in Table 1.

Domain 1 considers the *scope and purpose* of the guideline, taking into account the overall health questions and objectives including health intent such as prevention, screening or treatment, the expected benefit or outcome of the particular test or intervention, as well as the target population and health outcomes to be measured. The Department of Health Pregnancy Care Guidelines (Department of Health 2020) scored 100 % with a clearly written scope and purpose and defined target audience. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) Maternity Care in Australia (Royal Australian and New Zealand College of Obstetricians and Gynaecologists 2017), King Edward memorial hospital (WA) antenatal care schedule (King Edward Memorial Hospital 2016) and the Royal Women's hospital (VIC) antenatal care schedule (The Royal Women's Hospital Victoria 2020) received moderate scores of 72 % and 67 % respectively. It is important to note that although these guidelines are antenatal care schedules, they differ from GP shared care schedules which were excluded from this review in that they also contain CBPE recommendations are used more widely within their respective states. The South Australian Perinatal Practice guideline (South Australia Health 2017) received a low score of 31 % because neither a target population nor health care setting were defined and the purpose of the guideline with regards to intended health outcomes was not discussed.

Domain 2 relates to *stakeholder involvement* and examines the development process involved in the creation of the guidelines along with a representation of the views of the intended guideline users. The Department of Health Pregnancy Care Guidelines again received a score of 100 %, with a clear description of the members of the development group, as well as data gathered on the preferences of the target population. However, each of the remaining four guidelines received scores of 28 % or less. Details of the guideline development group were absent in some cases, or the role and profession of members were omitted. The target users were often only implied, and views or preferences of the target population were not included.

Domain 6 is concerned with *editorial independence*. Apart from the Department of Health Pregnancy Care Guidelines that received a score of 100 %, the remaining guidelines each received exceptionally low scores between 4 % to 0 %. These low scores were given as statement of funding or competing interests were not included.

The remaining three domains were appraised with specific reference to childbirth and parenting education, in keeping with the overall aim of this review. Domain 3 considers the *rigour of development* of the guidelines and examines the methods taken to search the evidence, the criteria used for selecting the evidence, strengths, and limitations, and how recommendations were formulated based on existing evidence. This was considered specifically with regards to evidence for CBPE and recommendations explicitly based on a body of evidence. Scores across each guideline were low for this domain, ranging from a high of 25 % for the Department of Health (Department of Health 2020) to a low of 0 % for RANZCOG (Royal Australian and New Zealand College of Obstetricians and Gynaecologists 2017).

There was little to no mention of structured or systematic searches for CBPE evidence, strengths, and limitations of the existing body of evidence for CBPE, and recommendations for education program inclusions were often not linked to supporting evidence. Only The Royal Women's Hospital (The Royal Women's Hospital Victoria 2020) provided a recommended antenatal care schedule, where suggested education topics were listed based on gestational age, but not specific to the provision of CBPE.

Domain 4 evaluated *clarity and presentation* of the recommendations provided. It considered whether recommendations were presented clearly and were easily identifiable by the guideline's target audience. This was again scored with reference to CBPE recommendations and thus, as these recommendations were often ambiguous, the scores for this domain ranged from 36 % for the Department of Health (Department of Health 2020) to 3 % for King Edward Memorial Hospital (King Edward Memorial Hospital 2016).

Finally, Domain 5, *applicability of the guideline*, considers facilitators and barriers to the application of the guideline, resource implications, advice on implementing recommendations provided, and any auditing criteria. Apart from an auditing process provided by the Department of Health Pregnancy Care Guidelines (Department of Health 2020), receiving a score of 25 %, none of the guidelines met the criteria for this domain with regards to antenatal education, scoring 6 % or less.

Each reviewer also provided an overall score for the quality of each guideline with respect to CBPE and indicated whether or not they would recommend this guideline for use for this specific purpose. The Department of Health Pregnancy Care Guidelines received a moderate overall score, with reviewers indicating that they would recommend this guideline with modifications. The remainder of the guidelines received low scores and reviewers advised that they would not recommend these guidelines in reference to CBPE recommendations, but would instead consider an alternate source of information, with the exception of one reviewer who indicated that they would recommend the South Australian state guideline with modifications.

Discussion

There is evidence that CBPE programs lead to improved outcomes, including lower use of pharmacological pain relief during labour, fewer obstetric interventions including instrumental births and caesarean section, improved partner involvement in labour, improved coping strategies and confidence in birth and postnatally, lower rates of postnatal depression and anxiety, and (Brixval et al., 2015). There is also evidence for improved preparation for breastfeeding (Brixval et al., 2015) and the postpartum period (Koehn, 2002), as well as reduced costs for health services (Levett et al., 2018). A systematic review by Hong et al., (Hong et al., 2021), identified an overall reduction in caesarean section rates and epidural use during childbirth following CBPE in randomised trials. Mental health outcome measures of reported stress, anxiety and self-efficacy were also significantly improved for CBPE groups (Hong et al., 2021). However, due to the heterogeneity of CBPE, research examining its impact on birth outcomes has conflicting and sometimes inconclusive findings (Ferguson et al., 2012), with limited evidence for its effectiveness in improving maternal and fetal birth outcomes such as Apgar scores and birth weight (Hong et al., 2021,; Declercq et al., 2014). Various CBPE programs have taken differing approaches to the content and nature in which information is provided to prospective parents (Hong et al., 2021,; Levett and Dahlen, 2019). Thus, despite this body of evidence, CBPE remains largely unregulated, and there is a lack of consistent recommendations (Levett and Dahlen, 2019) or meaningful integration into maternity services (Sutcliffe et al., 2023).

This review of five guidelines for antenatal care demonstrated a low standard of guideline development regarding recommendations for CBPE in Australia. The Department of Health's national Pregnancy Care Guidelines showed a good systematic search strategy for evidence to formulate recommendations within pregnancy care. However, with respect to CBPE specifically, a systematic approach for gathering evidence, criteria used for selecting such evidence, and an explicit link between supporting evidence and recommendations was lacking. Each of the five guidelines did not demonstrate a systematic search strategy for the evidence to provide recommendations for CBPE, nor did they provide specific advice on how CBPE should be implemented. As a result, recommendations were ambiguous and lacking in supporting evidence.

Guidelines are increasingly being used to direct clinical practice with the objective of improving clinical outcomes and minimising health care expenditure (Foureur et al., 2010), but there is no systematic approach to recommendations for CBPE, making implementation, quality, and equity of access to programs problematic. CBPE is acknowledged as an

important element to pregnancy care however, methods for evaluating the service and evidence-based practices and programs are not incorporated into clinical practice guidelines, leaving a gap in care when clinicians and administrators require up-to-date information to guide policy development. While clinicians would use guidelines and adapt CBPE programs to provide individually tailored care, such guidelines must still reflect the latest available evidence. The educational content of antenatal guidelines differ and guidelines lack specifics, depth and breadth with regard to CBPE content, with no systematic approach to CBPE (Hanson et al., 2009). With guidelines lacking in rigour with regard to CBPE there is a lack of evidence-based practice within this area.

The CAPEA standards recommend that educators have evidence-based knowledge in pregnancy, labour, birth, infant feeding, early parenting, perinatal mental health, and family dynamics (Childbirth and Parenting Educators Australia 2018). CAPEA, as a centralised organisation, are in an ideal position to guide recommendations for guidelines and policy with its competency standards developed by experts in Childbirth and Parenting Education through a rigorous process of developing evidence-based recommendations in consultation with various stakeholders. The purpose of including CBPE recommendations in maternity care guidelines is to assist clinicians and health services to integrate services at each level of care to support women and families.

The National Institute for Health and Care Excellence (NICE) guidelines from the UK demonstrate a robust body of evidence-based guidelines with explicit link to the evidence for each recommendation. Where evidence is lacking, recommendations are based on clinician experience, providing indications where further research is needed, and implications for practice discussed for each recommendation provided (National Institute for Health and Care Excellence 2021). However, these guidelines also show a lack of evidence-based recommendations with specific regard to CBPE, where a similar level of rigour and exploration of the impact of recommendations for CBPE has not been provided (National Institute for Health and Care Excellence 2021).

The Canadian pregnancy care guideline (Public Health Agency of Canada 2022) discuss well-structured evidence based recommendations for the provision of antenatal care, with a lengthy topic list of suggested inclusions for CBPE. The guidelines reference *The delivery of prenatal education in Ontario* (Better Start by Health Nexus 2019), discussing robust recommendations for the structure of providing CBPE, the timing in pregnancy where women are most likely to engage, the benefits of and barriers to CBPE. However, here too there remains a lack of explicit link between CBPE content and the evidence upon which such recommendations are based, ultimately highlighting that such programs are difficult to standardise and reproduce when such evidence is missing (Better Start by Health Nexus 2019).

In the American Guidelines for Perinatal Care, ACOG provides robust evidence based recommendations for the medical management of mothers throughout the antenatal, intrapartum and postnatal period (American Academy of Pediatrics and The American College of Obstetrics and Gynaecologists 2017). However, as we have seen in various other guidelines, there is a gap with regard to evidence-based recommendations for CBPE specifically. ACOG guidelines also did not provide guidance on the timing of CBPE unless it involved screening for abnormalities. The AAFP guidelines appeared to intend for all education topics to be covered in the first antenatal visit. While the ICSI guidelines emphasised the inclusion of education around preterm labour, there were gaps in the topics pertinent to healthy women (Hanson et al., 2009). The Cochrane review conducted by Gagnon and Sandal also concluded that high quality evidence was lacking for individual or group CBPE, with published research also tending to sample educated participants rather than including medically or socially disadvantaged women (Gagnon and Sandall, 2007). The antenatal care schedule in the United States has largely remained unchanged since it was first established despite significant changes in technology, population health and evidence to support alternative prenatal care delivery (Peahl and Howell, 2021). Attendance at formal CBPE classes in America has also declined (Declercq et al., 2014). Walker and Rossie postulated that the decline in childbirth education class attendance can be attributed to more women choosing epidural anaesthesia, elective induction, and elective Caesarean section, and likely due to CBPE not evolving with the changing needs of childbearing women (Walker et al., 2009). Peahl and colleagues highlight how little we still know about appropriate antenatal care delivery and, despite an awareness of what services need to be provided to improve pregnancy and birth outcomes, there is still a lack of key information on how to deliver these services and how best to tailor such services to individual women and families (Peahl and Howell, 2021).

There is a clear gap in evidence-based practice recommendations with regard to CBPE globally, with prenatal services remaining largely unregulated across the board, despite a growing body of evidence for its importance in preparing women and families for childbirth and early parenthood and improving fetal and maternal outcomes. The clear articulation of the evidence-practice gap serves to direct research, policy, and implementation strategies through guideline development here in Australia with regard to service delivery and equitable access of CBPE for all women and families.

Strengths and limitations

This study has highlighted the substantial gap in evidence and clinical practice guidelines for CBPE. The AGREE II tool which was used to assess the quality of the guidelines is an instrument that is endorsed by the World Health Organization and is used internationally for the development and evaluation of clinical guidelines. Each guideline was reviewed separately by two reviewers and when there were discrepancies of two points or more between reviewers all authors were consulted to resolve any differences. The currently publicly available antenatal care guidelines in Australia have not previously been appraised using the AGREE II tool and thus this study is able to fill a gap in current research. It provides evidence for the need to update currently used guidelines and to improve CBPE access for women and partners.

This guideline review, while highlighting the substantial gap in evidence and clinical practice guidelines for CBPE, contains some limitations. As is common for guidelines reviews, only publicly available guidelines were selected for review. Thus, despite an exhaustive search, all relevant guidelines may not have been identified. Guidelines from every Australian state and territory were also not able to be sourced using this search strategy, and we are unaware of guidelines that may be used in some private contexts, however we have used every available search tool and database to source publicly available data. The AGREE II tool, which is used to assess the quality of guideline development, is limited in its scope of review as it does not assess the quality and accuracy of the evidence used to formulate clinical recommendations. It does however assess the method and scope of development of clinical guidelines, highlighting limitations in guideline development for CBPE. While we evaluated the overall quality of the guidelines for some domains, certain domains were appraised in the context of CBPE only. This was done to tailor the review to CBPE, for the purpose of evaluating if guidelines contain specific recommendations for CBPE. It is important to acknowledge the two different methods in which the AGREE II tool was applied to best interpret these results. Despite these limitations, this analysis aims to contribute to ongoing quality improvement within clinical practice and provides useful information to guide policy makers with regards to clinical practice recommendations specific to CBPE, an area which has been largely overlooked and lacks evidence of integration into maternity services.

Conclusion

This review of antenatal care guidelines demonstrates low quality guideline development with regard to recommendations for CBPE. This gap in pregnancy care needs to be addressed through inclusion of systematic and evidence based CBPE recommendations which are integrated into maternity guidelines, as a key component of care. This gap is

not one that is unique to Australia, but rather a global lack in unregulated CBPE recommendations. This study provides an important consideration for future research and practice to improve the access and quality of CBPE across health services in Australia.

Statement of Significance

Problem

It is unknown whether antenatal care clinical practice guidelines contain consistent recommendations for evidence-based CBPE, with an apparent gap between research and practice.

What is already known

Clinical practice guidelines in maternity care assist health practitioners and consumers to make decisions about appropriate care. CBPE programs have been shown to influence labour and birth experiences by reducing maternal stress, improving self-efficacy, and lowering the rates of medical interventions during birth. However, guidelines may not reflect the growing evidence based information and recommendations for CBPE, which should be provided to educators, women, and partners.

What this paper adds

This study demonstrates a lack of inclusion of evidence-based recommendations for the provision of CBPE in Australian antenatal care clinical practice guidelines. Considerations for updates to guidelines are included to improve access for women and partners to high quality, evidence-based CBPE, and service delivery across health districts in Australia.

Ethical statement

No ethical approval was required as this is a review of existing published documents.

CRediT authorship contribution statement

Alessia Ferri: Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. **Kerry L. Sutcliffe:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – review & editing. **Christine Catling:** Data curation, Formal analysis, Methodology, Writing – review & editing. **Elizabeth Newnham:** Data curation, Formal analysis, Methodology, Writing – review & editing. **Kate M. Levett:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, 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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