Efficacy of Antenatal Education on childbirth in last decade – A Systematic Review

Type of Article: Review Article

Shivaranjani Balamurugan[1], Dr Preethi Rajesh[2], Poongodi Chellapandian[3], Thirulogachandar Gunasekar[4], Bernard Ebenezer Cyrus[5], Murali Ravi[6], Mageshwari G S[7], Dr Anuradha M[8],

[1]PhD Scholar, Department of Physiotherapy, School of Health science, Garden City University, Bangalore and Senior Physiotherapist, Panimalar Medical College Hospital and Research Institute, Chennai.Email.ID: shivasapphire8195@gmail.com
[2]Professor,Department of Life sciences, School of Life science, Garden City University, Bangalore
[3]Professor and Vice-principal, Panimalar College of Nursing, Chennai
[4]Assistant Professor, Faculty of Physiotherapy, Dr. MGR Educational and Research Institute, Chennai.
[5]Assistant Professor, Faculty of Physiotherapy, Dr. MGR Educational and Research Institute, Chennai.
[6]Assistant Professor, Meenakshi Faculty of Physiotherapy, Meenakshi Academy of Higher Educational and Research, Chennai.
[7]Assistant Professor, Meenakshi Faculty of Physiotherapy, Meenakshi Academy of Higher Educational and Research, Chennai.
[8]Department of Obstetrics and Gynecology, SRM Medical College Hospital and Research Center, Kattankuluthur.

Corresponding Author:

1. Shivaranjani B, PhD Scholar, Department of Physiotherapy, School of Health science, Garden City University, Bangalore and Senior Physiotherapist, Panimalar Medical College Hospital and Research Institute, Chennai.
   Email.ID: shivasapphire8195@gmail.com

KEYWORDS
Antenatal Education, Childbirth, Systematic Review

ABSTRACT

Background: Antenatal education classes are intended to improve health behaviors and deliver comprehensive information about the psychological and physical changes that occur during pregnancy. These classes have long been a vital element of antenatal care services. Antenatal education should be standardized to clearly define its actual impact on both mental and physical health. The implementation of structured antenatal education programs is essential for gaining a better understanding of the relationship between prenatal care and maternal and infant health outcomes.

Aim: To summarize the various antenatal education or classes in different country practices and its impact on childbirth outcomes in the last decade.

Methods: We conducted a search for relevant literature published in English from 2013 to 2024 related to antenatal education. This systematic review included articles involving pregnant women willing to participate in antenatal or childbirth education, as well as studies on antenatal education guidelines published within the specified timeframe. Our search strategy yielded approximately 93 articles. The reviewers screened these articles based on eligibility criteria, excluding 67 due to irrelevant data, conclusions, or failure to meet our study's criteria. Ultimately, 26articles were included in this systematic review.

Conclusion: This systematic review concludes that the existing evidence base for antenatal education is inconclusive. However, emerging evidence from future well-conducted and well-reported trials may help establish definitive conclusions.

Introduction:

Antenatal education consists of a series of sessions designed to assist expectant mothers and their partners in preparing for childbirth and parenthood. The primary objective is to offer reliable, practical, and realistic information regarding pregnancy, labor, and parenting. The advantages of antenatal education include fostering confidence, enriching the childbirth experience, enhancing maternal skills, and equipping individuals for a positive birth outcome [1]. The history of antenatal education highlights it because contemporary class attendees primarily represent a specific segment of the childbearing population. Since the Victorian era, the lack of informal women's networks among middle-class women has compelled them to seek knowledge about their bodies, confidence in their childbearing abilities, and support from other women through formal education. Research indicates that antenatal classes often fail to provide a realistic portrayal of childbirth and parenting, which once stemmed from lived experiences, and may not be structured in a way that fosters the support networks participants urgently require. Furthermore, teaching methods frequently encourage dependence rather than cultivating the decision-making skills necessary for navigating a consumer-driven maternity system [2]. Antenatal education classes are designed to enhance health behaviors and provide information on the psychological and physical changes that occur during pregnancy. These classes have been an essential component of antenatal care services for many years and integrated into the National Institute of Health and Care Excellence (NICE) guidelines, which empower pregnant women to make informed decisions before and during childbirth, utilizing the skills acquired to manage labor pain, care for their infants, and breastfeed effectively [3]. Empowering women and pregnant individuals to engage in this process through high-quality Antenatal education has been shown to positively impact childbirth satisfaction. It can take the form of traditional information-provision classes or focus on self-directed coping strategies; some pregnancy exercise classes also incorporate educational and preparatory elements for pregnant women towards childbirth [4].

Antenatal classes encompass a wide range of topics designed to prepare expectant mothers and their partners for childbirth and parenthood. These topics include Pregnancy health: Guidance on maintaining a healthy diet and exercises to promote physical activity. Labor and birth: Information on the stages of labor, available pain relief options, and coping strategies during labor. Partner support: The role of partners and support persons during labor and birth. Parenting preparation: Planning for the initial moments with the baby, infant care, and breastfeeding management. Social support: Building social support networks. Emotional and psychological needs: Understanding personal social, emotional, psychological, and physical requirements [5].

Childbirth and parenting education (CBPE) can significantly impact labor and birth experiences by reducing maternal stress, enhancing self-efficacy, and lowering the rates of medical interventions during childbirth and shown to reduce healthcare costs and improve outcomes for health services. Fear of childbirth is often associated with prolonged labor, a more intense experience of pain, a negative impact on the overall birth experience, and an increased number of requests for elective cesarean delivery. Anxiety and self-efficacy in childbirth are inversely related; low self-efficacy in pregnant women heightens their perception of childbirth pain, which, in turn, escalates their anxiety levels [6].

The World Health Organization (WHO) has emphasized the importance of birth preparation as a crucial element of prenatal care [7]. Women seek to attend antenatal education classes to obtain reliable information, build confidence, and feel better prepared for labor, particularly in understanding pain relief and common interventions. They also value the opportunity to connect with other women at the same stage of pregnancy, which helps normalize

their anxieties. However, the overwhelming amount of information available can heighten their concerns about labor, underscoring the importance of addressing these anxieties through comprehensive antenatal education. Parents have expressed a desire for antenatal educational programs to be more inclusive and tailored to meet their individual, cultural, and community-specific needs [8].

Research indicates that approximately 75% of expecting mothers lack sufficient pregnancy-related information (Anya et al., 2008). For many parents, the first year of parenthood is characterized by feelings of unpreparedness and psychological distress (Daley-McCoy et al., 2015). Antenatal classes, prenatal education, and childbirth educational programs—collectively referred to as antenatal educational programs—are essential in addressing these challenges [9].

Maternal mortality has long been recognized as a significant global healthcare challenge, with data consistently revealing that preventable deaths and injuries occur during pregnancy and childbirth. In 2017, for example, the World Health Organization (WHO), UNICEF, the United Nations Population Fund, the World Bank Group, and the United Nations Population Division reported that approximately 295,000 women worldwide died during pregnancy or childbirth. These deaths are largely attributed to preventable complications, many of which could be avoided if women had access to basic maternal health education services, enabling them to identify danger signs and take appropriate action. Several studies indicate that low awareness of these danger signs during pregnancy and delivery is a major contributing factor to the persistently high maternal mortality rates observed globally. [10] Antenatal education should be standardized to clarify its actual impact on mental and physical health. Implementing structured antenatal education programs is crucial for better understanding the relationship between prenatal care and maternal and infant health outcomes [11]. There is currently insufficient evidence to confirm the effectiveness of a particular type of antenatal parenting education on maternal confidence, depressive symptoms, and parenting stress among expectant primiparous women in Asia. Theory-oriented antenatal parenting education may hold potential benefits for pregnant women. Further high-quality research is needed to better understand and evaluate antenatal parenting education for expectant primiparous women, particularly in the Asian context [12].

Therefore, the objective of this study is to summarize the various antenatal education or classes in different country practices and its impact on childbirth outcomes in the last decade.

Methods:

The study design was a systematic review performed in accordance with the Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA) statement of antenatal education on childbirth outcomes published from the year of 2013 to 2024 from professional organizations through different databases including PubMed, Web of Science, Science direct, manual search in google scholar, Cochrane Library. The Key Search Terms and Phrases are "Antenatal education", "Childbirth outcomes", "Prenatal classes", "Pregnancy education", "Maternal health education", "Labor preparation", "Partner support during childbirth", "Pregnancy health education". The

Boolean Operators Used are "Antenatal education **AND** childbirth outcomes": This search focuses on the relationship between antenatal education and its impact on childbirth outcomes. "Prenatal classes **OR** labor preparation": This query broadens the search to include results related to either prenatal classes or labor preparation, covering both terms.

Eligibility Criteria and study selection:

- **Time Frame**: Studies published within the last 10 years, except for foundational or seminal works that significantly contributed to the understanding of antenatal education.
- **Language**: Studies published in English.
- **Study Type**: Literature Review type of study included systematic reviews, meta-analysis, randomized controlled trials (RCTs), observational studies, cohort studies, and reviews that evaluated the effectiveness or content of antenatal education programs.
- **Population**: Studies involving pregnant women, and where relevant, their partners, who participated in antenatal education programs.
- **Outcome Measures**: Studies focusing on outcomes such as:

    - Pain management strategies during childbirth
    - Reduction in anxiety levels
    - Labor experiences and satisfaction
    - Neonatal health and well-being

Exclusion Criteria:

- **Non-peer-reviewed articles**: Opinion pieces, editorials, and other non-scholarly articles.
- **Unrelated focus**: Studies that concentrated on aspects of pregnancy not directly related to antenatal education (e.g., specific nutrition or unrelated medical conditions).
- **Unavailable full texts**: Articles where access to the complete text was restricted.

Data Extraction Process:

- Study design – this is systematic review study in which systematic reviews, meta-analysis, randomized controlled trials (RCTs), observational studies, cohort studies related to antenatal education were extracted for the study review.
- Larger Sample size studies were preferred for review
- Educational program type including group sessions, online, hospital-based, face to face session were included for review
- Outcome measures (e.g., reduced anxiety, better labor outcomes, increased breastfeeding)

Bias Considerations: Two review authors independently evaluated the included trials using a predefined risk of bias scoring system to determine the likely presence or absence of biases that could affect the internal validity of the trials. Any disagreements between the authors were resolved through discussion. The scoring system covered the following areas:

- **Selection bias**: Assessed based on randomization sequence generation and allocation concealment.
- **Performance bias**: Focused on evaluating the blinding of participants, educators, and outcome assessors. For trials with both subjective and objective outcomes, blinding of outcome assessors was assessed separately for each type of outcome.
- **Incomplete outcome data**: Considered any systematic differences in participant withdrawal between the compared groups. In trials with both subjective and objective outcomes, reporting bias was assessed separately for each type.

Each trial was first assessed for risk of bias in the aforementioned domains and classified as 'low', 'unclear', or 'high risk of bias'. Trials were then rated for overall risk of bias: those assessed as 'low risk of bias' across all domains were deemed 'overall low risk of bias', while all others were categorized as 'overall high risk of bias'. Given the nature of the intervention, a high level of bias was anticipated in the domain of participant and educator blinding, as it is often challenging to blind these groups. Trials with all domains rated as 'low risk of bias' except for the blinding domain were classified as having an 'overall moderate risk of bias'.

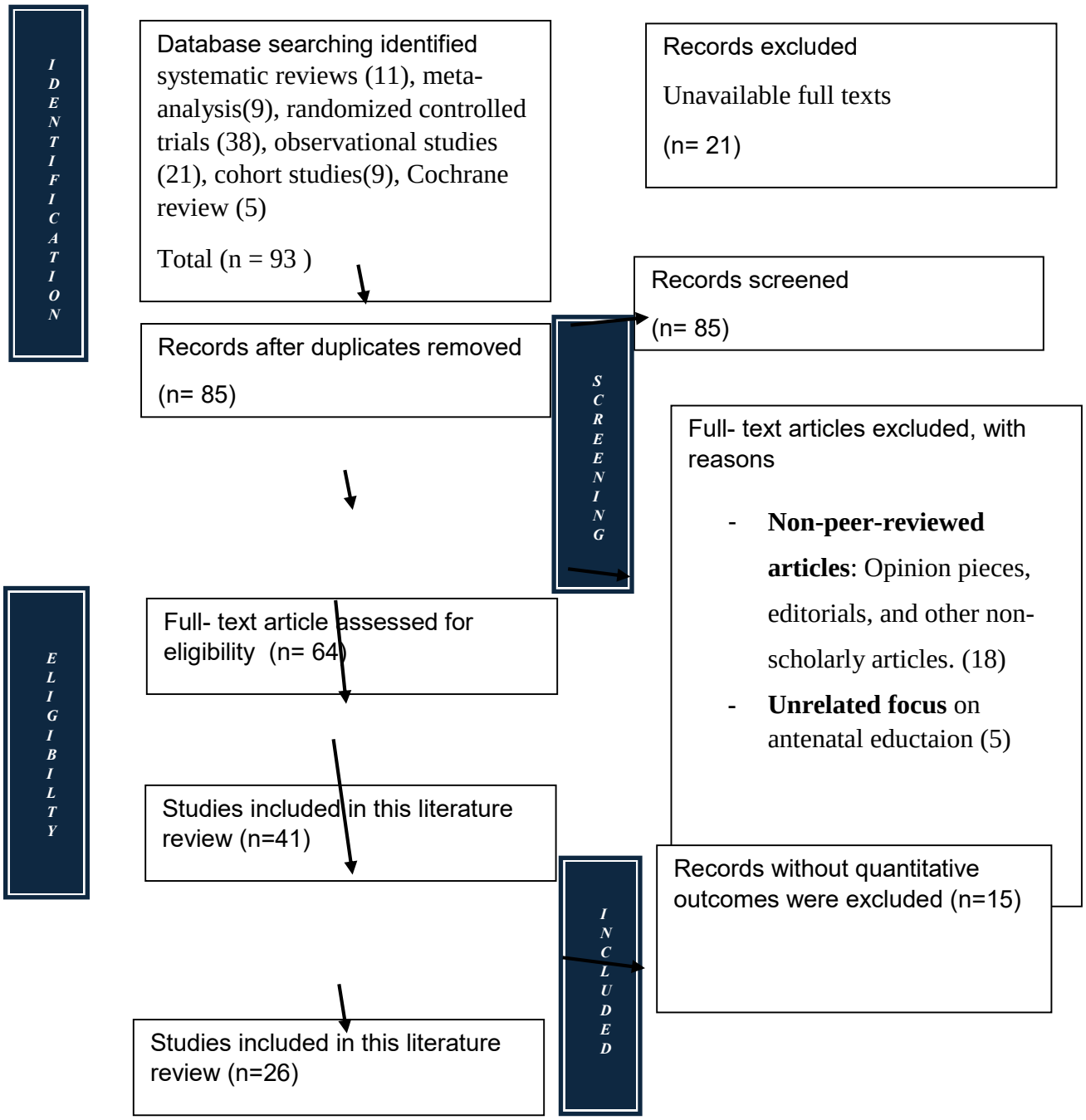

Fig. 1 PRISMA (Preferred Reporting Items for Systematic Review and Meta-analyses) flow diagram of studies included in the Systematic Review.

Findings and Discussion:

Overview of Selected Studies:

From the search strategy, a total of 26 studies were reviewed, encompassing randomized controlled trials (RCTs), cohort studies, observational studies, and reviews. These studies investigated the impact of antenatal education on various outcomes associated with childbirth and maternal health. The studies were geographically diverse, originating from countries such as Australia, USA,UK, Oman, China, Iran, Italy, India, Egypt, Asia and reflected a broad spectrum of healthcare systems and cultural perspectives on antenatal education.

Childbirth is one of the most significant events in a parent's life, with the potential to be either an exhilarating and fulfilling experience for some or a frightening and anxiety-provoking one for others. Structured antenatal classes have developed globally as traditional methods of information sharing have declined, prompting expectant parents to seek strategies to prepare for childbirth and parenthood. Historically, antenatal education classes have been offered to support new parents in their transition to parenthood. We identified several challenges in the provision of antenatal education, as well as the partial utilization of a new resource, highlighting the need for enhanced approaches to dissemination [13,14].

Effectiveness of Antenatal Education on Maternal Outcomes

- **Maternal Confidence and Anxiety Reduction**: Most studies demonstrated a positive association between antenatal education and increased maternal confidence during childbirth. Several randomized controlled trials (RCTs) specifically reported that participants who attended structured antenatal classes experienced significantly lower levels of anxiety during labor compared to those who did not receive formal education [3,5,7,8,9,15].
- **Informed Decision-Making**: The research also highlighted that mothers who participated in antenatal programs were more likely to make informed decisions regarding labor interventions, such as choosing between natural and assisted birth. These mothers expressed higher levels of satisfaction with their childbirth experiences [4,6,10,11,12,15].
- **Pain Management and Coping Mechanisms**: Studies revealed that women who were educated about labor pain management techniques, including breathing exercises, relaxation methods, and epidurals, reported reduced pain perception during childbirth [13,14,15,18].

Antenatal Education Formats and Approaches

- **Group Classes vs. Online Courses**: Studies comparing group-based antenatal classes with online or self-paced courses indicated that group classes provided stronger social support and interaction among pregnant women. However, online education was noted for its convenience and was found to be equally effective for women with scheduling conflicts [8,22,23,27].
- **Partner Involvement**: Several studies underscored the significance of partner involvement in antenatal education. Couples who attended the classes together reported enhanced emotional preparation and improved communication during labor [6,9,12,25,27].

Antenatal Education as a Tool for Empowering Women

- The findings from this review strongly suggest that antenatal education serves as a vital tool for empowering expectant mothers. It enhances their confidence, reduces anxiety, and

improves preparedness for childbirth. Women who participate in these programs feel more in control and make more informed decisions during labor. Additionally, the emotional benefits extend beyond childbirth, facilitating smoother postpartum adjustments. Research indicates that approximately 75% of expectant mothers lack sufficient pregnancy-related information. For many parents, the first year of parenthood is marked by feelings of unpreparedness and psychological distress. While modern antenatal educational programs typically cover topics such as pregnancy care, labor preparation, and maternal and newborn care, there remains a need for greater specificity in these programs' content, particularly when evaluating their effectiveness in studies [7,9].

Influence on Childbirth Outcomes

- The studies reviewed consistently indicated that antenatal education has a positive impact on childbirth outcomes. Women who participate in these programs are less likely to require medical interventions and more likely to experience normal deliveries. This suggests that antenatal education helps close the knowledge gap and fosters a sense of agency, enabling mothers to trust their bodies and the natural birthing process. While the reduction in medical interventions is a favorable outcome, it is important to note that the type of program (natural childbirth-focused vs. general prenatal classes) can influence these results. Programs that emphasize natural childbirth may downplay the necessity of medical interventions when appropriate, which poses a challenge for delivering balanced education. antenatal education can reduce maternal stress, enhance self-efficacy, lower the cesarean birth rate, and decrease the use of epidural anesthesia. However, there is limited evidence regarding its effects on maternal or fetal physical outcomes. Therefore, the study suggests that antenatal education should be standardized to clarify its actual impact on mental and physical health. Implementing structured antenatal education programs is crucial to better understanding the association between prenatal care and maternal and infant health outcomes [11,12].

Role of Partners and Social Support

- The review found that antenatal education is more effective when partners are involved. Partner participation provides additional emotional support to mothers, reducing stress during labor and improving postpartum recovery. Involving fathers and partners in the educational process not only prepares them for childbirth but also strengthens family bonds and fosters co-parenting. Another key aim of antenatal classes is to facilitate social networking by allowing participants to meet others in similar situations. Antenatal education has evolved significantly over time, adapting to changing opinions and trends. In smaller classes, a supportive environment is fostered, enabling expecting parents to openly discuss their feelings and concerns. While small classes may incur higher immediate costs compared to larger lectures, they have the potential to enhance parenting resources, leading to long-term healthcare cost savings [22,23].

Diverse Approaches to Antenatal Education

- Different formats of antenatal education—group classes, online modules, and individual sessions—offer distinct advantages. Group classes promote social support and interaction, helping to alleviate feelings of isolation. Meanwhile, online programs are gaining popularity due to their flexibility and accessibility, particularly for individuals in rural or underserved areas. However, some studies indicated that online education lacks the interpersonal connection offered by in-person classes, which can affect emotional preparedness [8,22,23].

Challenges in Accessibility and Equity

- Despite the proven benefits of antenatal education, the review highlights significant accessibility challenges for certain populations. Rural communities, low-income families, and non-English speakers often face limited access to quality prenatal education. Future initiatives should prioritize expanding access through community-based programs, multilingual resources, and cost-free online modules to ensure equity in maternal healthcare [6,7,8].

The Gaps in various established Guidelines:

- UK (NICE Guidelines): There is a noted lack of evidence-based recommendations specific to CBPE.
- Canada (Public Health Agency of Canada Guidelines): While there are structured, evidence-based recommendations for antenatal care, the explicit link between CBPE content and the evidence remains insufficient.
- US (ACOG Guidelines): There is a lack of guidance on the timing of CBPE, except in cases involving screening for abnormalities.

Research Limitations:

A Cochrane review highlighted the lack of high-quality evidence for individual or group CBPE, with existing research often focusing on more educated participants rather than medically or socially disadvantaged women. This summary underscores the importance of further research and the development of more robust, evidence-based guidelines for CBPE, especially to better serve diverse populations. Some studies had small sample sizes, limiting the generalizability of their findings. Additionally, more research is needed to compare the long-term outcomes of antenatal education, such as postpartum depression rates and infant health at one-year post-birth. Furthermore, the lack of consistency in outcome measures across studies complicates the quantitative synthesis of results. Future research should prioritize the use of standardized methods for evaluating the effectiveness of antenatal education programs.

Conclusion:

Antenatal education plays a crucial role in improving maternal and childbirth outcomes by reducing anxiety, fostering informed decision-making, and decreasing the reliance on medical interventions. Despite these benefits, challenges persist in terms of accessibility and equitable resource distribution. Future research should focus on the long-term effects of antenatal education, with an emphasis on developing more inclusive and accessible programs. This systematic review concludes that current evidence regarding antenatal education is inconclusive. However, emerging data from well-conducted and thoroughly reported trials may help establish clearer conclusions. To bridge this gap, high-quality studies with sufficient sample sizes are essential.

Future Directions:

Further research should investigate the impact of antenatal education on childbirth outcomes, initially focusing on comparing the relative effectiveness of different educational approaches, as the overall impact remains largely unclear. Given the positive outcomes observed, there is potential to expand antenatal education beyond childbirth preparation to encompass broader topics, including mental health, breastfeeding support, and early parenting skills.

Conflicts of Interest: Authors have declared that no competing interests exist.
Author's Contribution: This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.
Consent: It is not applicable.

Ethical approval: Since this is a review of existing literature, ethical approval is generally not required. All included studies adhered to ethical standards in their original research.

References:

1. Aida-SyahirahH. Aji, Faezah Awg-Manan, Yura Rahayu Abdullah, Ramlah Kisut, Hanif AbdulRahman, KhadizahH. Abdul-Mumin. Antenatal education for pregnant women attending maternal and child health clinics in Brunei Darussalam. Women and Birth Volume 32, Issue 6, December 2019, Pages 564-569.
2. M L Nolan. Antenatal education--where next? J Adv Nurs. 1997 Jun;25(6):1198-204. doi: 10.1046/j.1365-2648.1997.19970251198.x.
3. Anwar Nader Alkhunaizi, Sami Abdulrahman Alhamidi, Areej Ghalib Al-Otaibi, Amany Anwar Alabdullah, Kawther Saleh Alosaif, Meral Jehad Al Zayer. Exploring Healthcare Providers' Perspectives of Childbirth Education Classes for Quality of Care and Positive Childbirth Experience: An Interpretative Phenomenological Analysis Study. Research Square, June 25th, 2024. DOI: https://doi.org/10.21203/rs.3.rs-4530594/v1.
4. Abi Merriel, Miriam Toolan, Mary Lynch, Gemma Clayton, Andrew Demetri, Lucy Willis, Narendra Mampitiya, Alice Clarke, Katherine Birchenall, Chloe de Souza, Emma Harvey, Tamarind Russell-Webster, Eva Larkai, Mariusz Grzeda, Kate Rawling, Sonia Barnfield, Margaret Smith, Rachel Plachcinski, Christy Burden, Abigail Fraser, Michael Larkin, Anna Davies. Codesign and refinement of an optimised antenatal education session to better inform women and prepare them for labour and birth. BMJ Open Quality 2024;13:e002731. doi:10.1136/bmjoq-2023-002731.
5. M Barimani [1], K Forslund Frykedal [2], M Rosander [2], A Berlin. Childbirth and parenting preparation in antenatal classes. Midwifery 2018 Feb:57:1-7. doi: 10.1016/j.midw.2017.10.021. Epub 2017 Oct 31.
6. Alessia Ferria, Kerry L. Sutcliffe a , Christine Catling b , Elizabeth Newnham d , Kate M. Levett. Antenatal education – Putting research into practice: A guideline review. Midwifery Volume 132, May 2024, 103960. https://doi.org/10.1016/j.midw.2024.103960.
7. Zohreh Alizadeh-Dibazari1 , Somayeh Abdolalipour1 and Mojgan Mirghafourvand. The effect of prenatal education on fear of childbirth, pain intensity during labour and childbirth experience: a scoping review using systematic approach and meta-analysis. BMC Pregnancy and Childbirth (2023) 23:541 https://doi.org/10.1186/s12884-023-05867-0.
8. Helen Spiby , Jane Stewart , Kim Watts , Anita J Hughes , Pauline Slade. The importance of face to face, group antenatal education classes for first time mothers: A qualitative study. Midwifery Volume 109, June 2022, 103295. https://doi.org/10.1016/j.midw.2022.103295.
9. Shefaly Shorey, Doris Ngiuk Lan Loh , Valerie Chan , Crystal Chua , Mahesh A Choolani. Parents' perceptions of antenatal educational programs: A meta-synthesis. Oct:113:103432. doi: 10.1016/j.midw.2022.103432. Epub 2022 Jul 14.
10. Maha Y.K. AlDughaishi, Vidya Seshan, Gerald A. Matua. Challenges and Strategies of Providing Effective Antenatal Education Services in Oman's Public Healthcare System. Sultan Qaboos University Med J, November 2023, Vol. 23, Iss. 4, pp. 510–518, Epub. 30 Nov 23.

11. Kwan Hong, Hari Hwang, Helin Han, Jaeeun Chae, Jimi Choi, Yujin Jeong, Juneyoung Lee, Kyung Ju Lee. Perspectives on antenatal education associated with pregnancy outcomes: Systematic review and meta-analysis. Women Birth 2021 May;34(3):219-230. doi: 10.1016/j.wombi.2020.04.002. Epub 2020 Apr 28.
12. Iwata, Hiroko; Mori, Emi; Maehara, Kunie; Harada, Nami; Saito, Asuka. Effectiveness of parenting education for expectant primiparous women in Asia: a systematic review. JBI Evidence Synthesis 19(3):p 523-555, March 2021. DOI: 10.11124/JBISRIR-D-19-00327.
13. Spiby, Helen; Stewart, Jane; Watts, Kim; Hughes, Anita; Slade, Pauline (2021). Antenatal national surveys of heads of midwifery and facilitators of antenatal education. Evidence Based Midwifery, 19(2), 13-20.
14. Lisa Cutajar, Michelle Miu, Julie-Anne Fleet, Allan M. Cyna, Mary Steen. Antenatal education for childbirth: Labour and birth. Eur J Midwifery 2020;4(April):11 https://doi.org/10.18332/ejm/120002.
15. Colleen G. Mueller, Pamela J. Webb, and Stephanie Morgan. The Effects of Childbirth Education on Maternity Outcomes and Maternal Satisfaction. J Perinat Educ. 2020 Jan 1; 29(1): 16–22. doi: 10.1891/1058-1243.29.1.16.
16. Downer, Terri McMurray, Anne Young, Jeanine. The Role of Antenatal Education in Promoting Maternal and Family Health Literacy. International Journal of Childbirth Vol 10 Issue 1, Sep 2020, DOI: 10.1891/IJCBIRTH-D-20-00012.
17. Matilde Fernandez. Childbirth Education: Comparative Analysis. Research Gate 13 November 2019. DOI: 10.5772/intechopen.88021.
18. Rania El-Kurdy, Samia I Hassan , Nahed Fikry Hassan, Amina El-Nemer. Antenatal Education on Childbirth Self-Efficacy for Egyptian Primiparous Women: A Randomized Control Trial. IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 6, Issue 4 Ver. II (Jul. - Aug. 2017), PP 15-23.
19. Melissa Buultjens, Gregory Murphy, Priscilla Robinson, Jeannette Milgrom, Melissa Monfries. Women's experiences of, and attitudes to, maternity education across the perinatal period in Victoria, Australia: A mixed-methods approach. Women Birth 2017 Oct;30(5):406-414. doi: 10.1016/j.wombi.2017.03.005. Epub 2017 Apr 25.
20. Daniela Cantone 1, Concetta Paola Pelullo 2, Mariagrazia Cancellieri 2, Francesco Attena. Can antenatal classes reduce the rate of cesarean section in southern Italy? Women Birth 2017 Apr;30(2):e83-e88. doi: 10.1016/j.wombi.2016.09.004. Epub 2016 Sep 28.
21. Judith Lothian, Does Childbirth Education Make a Difference? J Perinat Educ. 2016; 25(3): 139–141.doi: 10.1891/1058-1243.25.3.139
22. Carina S Brixval , Solveig F Axelsen , Lau C Thygesen , Pernille Due , Vibeke Koushede. Antenatal education in small classes may increase childbirth self-efficacy: Results from a Danish randomised trial. Sex Reprod Healthc 2016 Dec:10:32-34. doi: 10.1016/j.srhc.2016.03.003. Epub 2016 Mar 21.
23. Carina Sjöberg Brixval,corresponding author Solveig Forberg Axelsen, Stine Glenstrup Lauemøller, Stig Krøger Andersen, Pernille Due, and Vibeke Koushede. The effect of antenatal education in small classes on obstetric and psycho-social outcomes - a systematic review. Syst Rev. 2015; 4: 20.doi: 10.1186/s13643-015-0010-x.
24. Ö Karabulut, D Coşkuner Potur, Y Doğan Merih, S Cebeci Mutlu, N Demirci. Does antenatal education reduce fear of childbirth? Int Nurs Rev 2016 Mar;63(1):60-7. doi: 10.1111/inr.12223. Epub 2015 Nov 27.

25. Solveig Forberg Axelsen, Carina Sjöberg Brixval, Pernille Due, Vibeke Koushede. Integrating couple relationship education in antenatal education - a study of perceived relevance among expectant Danish parents. Sex Reprod Healthc 2014 Dec;5(4):174-5. doi: 10.1016/j.srhc.2014.06.006. Epub 2014 Jun 19.
26. Sally Ferguson , Deborah Davis, Jenny Browne. Does antenatal education affect labour and birth? A structured review of the literature. Women Birth 2013 Mar;26(1):e 5-8. doi: 10.1016/j.wombi.2012.09.003. Epub 2012 Oct 12.
27. Vibeke Koushede, Carina Sjöberg Brixval, Solveig Forberg Axelsen, Jane Lindschou, Per Winkel, Rikke Damkjær Maimburg, Pernille Due. Group-based antenatal birth and parent preparation for improving birth outcomes and parenting resources: study protocol for a randomised trial. Sex Reprod Healthc 2013 Oct;4(3):121-6. doi: 10.1016/j.srhc.2013.08.003. Epub 2013 Sep 3.

Table. 1 Characteristics of few reviewed studies

Author/ Year	Study design	Methodology	Outcomes	Results
Anwar Nader AlKhunaizi (2024)	interpretative phenomenological qualitative approach	The study was conducted across three government hospitals in the Eastern Province of Saudi Arabia. Data collection was carried out through semi-structured interviews with 15 participants, comprising physicians, nurses, and educators. This diverse sample ensured the inclusion	Mother's Experience, Obstacles, and Struggles of Healthcare Providers, and Solutions & Suggestions	The study findings indicate that childbirth education programs boost maternal health and facilitate a more positive delivery experience.

		of a broad range of perspectives.		
Abi Merriel (2024)	The methods are presented in the four phases: codesign (2019), trial implementation (2021–2022), evaluation and refinement (2021–2022)	The study was conducted in a single maternity unit that handles approximately 5,500 births annually. Participants included both postnatal and antenatal women/birthing individuals, as well as their birth partners, who were invited to participate in the intervention. Midwives were invited to facilitate the delivery of the intervention.	The optimized session is designed to be deliverable, acceptable, and tailored to meet the needs of women/birthing individuals and their partners. The refinement of the intervention was informed by input from parents, clinicians, and researchers, ensuring that it effectively addresses the concerns and preferences of all stakeholders involved.	Engaging stakeholders, including women and staff, in the co-design of an evidence-informed curriculum led to the development of an antenatal class aimed at enhancing birth preparedness, including for assisted births. The class was deemed acceptable by women and their birthing partners and was refined based on feedback to ensure it is deliverable within National Health Service (NHS) resource constraints. A nationally mandated antenatal education curriculum is essential to ensure that parents receive high-quality education focused on birth preparedness.
Alessia Ferri (2024)	A guideline review	Publicly available Australian antenatal care guidelines were identified through local health district websites and professional organizations related to maternity care. The guidelines were independently reviewed, and their quality was evaluated using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) tool.	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	Within the guidelines reviewed there was a lack of evidence-based recommendations provided for educators or consumers regarding childbirth and parenting education.

			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.	
Zohreh Alizadeh-Dibazari (2023)	a scoping review using systematic approach and meta-analysis	Study utilized Google Scholar and systematically reviewed databases such as PubMed, Web of Science, Cochrane, Scopus, and the Scientific Information Database (SID). The review focused on randomized controlled and quasi-experimental trials comparing the effects of structured antenatal education alongside routine prenatal care versus routine prenatal care alone. Participants included pregnant women who preferred a normal vaginal delivery and had no history of maternal or fetal complications.	The outcomes assessed in this study included fear of childbirth, pain intensity during labor, and overall childbirth experience as primary outcomes, while postpartum psychological health was considered a secondary outcome. The quality of evidence was evaluated using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach.	In total, 3,242 studies were reviewed, of which 18 met the criteria for the final analysis. The meta-analysis revealed that providing prenatal education alongside routine care, compared to routine care alone, may reduce fear of childbirth, postpartum depression, and pain intensity during labor. However, no studies were found that specifically examined the outcome of childbirth experience.
Helen Spiby (2022)	qualitative study	Women expecting their first child from one of three groups: Women from the general population aged 20 years or more, women from	Three substantive themes are reported: the search for information, the	Access to a vast amount of information can heighten women's anxieties about labor, which they seek to

		ethnic minority groups and young women aged 16 to 19 years. Eighty-two pregnant women participated.	functions of antenatal classes, and the specific information desired.	alleviate through antenatal education. However, antenatal classes serve purposes beyond simply providing information; women expect these classes to address both their own needs and those of their partners.
Shefaly Shorey(2022)	meta-synthesis	Six databases were searched from each database. Included studies were appraised using the Critical Appraisal Skills Program tool. Qualitative data were meta-summarized and meta-synthesized.	Seventeen studies were included, and three themes were developed: (1) Contradicting views on antenatal educational programs, (2) Feeling 'well prepared' after attending the antenatal educational programs, and (3) Parents' expectations and way forward for the antenatal educational programs.	result consolidated the experiences and needs of parents who have participated in antenatal educational programs. These findings can inform policy refinements in antenatal care, aiming to enhance pregnancy, birth, and parenthood experiences for both mothers and fathers..
Kwan Hong (2021)	Systematic review and meta-analysis	Bibliographic databases (Cochrane, PubMed, EMBASE, CINAHL, Korean Studies Information Service System) were searched up to November 2018, following the PICO criteria	outcome (maternal and foetal outcome including physical or mental health components).	Antenatal education has been shown to reduce maternal stress, improve self-efficacy, lower the rate of caesarean births, and decrease the use of epidural anesthesia. However, evidence on its impact on maternal or fetal physical outcomes remains limited. Therefore, standardizing antenatal education is essential to better clarify its actual effects

				on both mental and physical health.
Lisa Cutajar (2020)	cross-sectional study	conducted at a single tertiary referral centre for Maternity Care in Western Sydney, Australia. All childbirth educators (n=3) were recorded whilst providing information to parents during antenatal classes.	During the labour and birth class, information statements were the predominant language structure that was spoken with 241 of 655 statements; negative statements were the next most frequent at 119 while there were 79 positive statements. The second stage of labour had a greater proportion of negative statements for two educators, followed by information and positive statements combined.	The findings further emphasise the need to examine the language used by health professionals when educating parents. Negative statements during antenatal education are still common despite research in other contexts suggesting that these are potentially unhelpful. Further research into the language and suggestions used during antenatal education is required to determine whether improved outcomes seen in other contexts are confirmed in the childbirth setting.