



# Non-Pharmacological Interventions for Reducing Fear of Childbirth

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## Abstract

Fear of childbirth (FOC) is a common psychological condition during pregnancy and can negatively impact maternal and foetal health. Non-pharmacological interventions stand out in the literature as safe and effective strategies for reducing FOC. This review comprehensively examines the effects of methods such as antenatal education programs, cognitive-behavioural therapy, mindfulness-based approaches, yoga and breathing techniques, hypnobirthing and midwife-led continuity models on FOC. The literature search was conducted using studies published in English between 2000 and 2025 in *PubMed*, *Scopus* and *Web of Science* databases. Findings indicate that these non-pharmacological approaches increase pregnant women's knowledge of the birth process, reduce anxiety and fear and strengthen perceived control during labour. Social support elements such as midwife-led continuity models and partner participation stand out as important factors that increase the effectiveness of interventions. Heterogeneity in the literature regarding the duration, frequency and delivery methods of interventions limits the generalisability of the results. In conclusion, nonpharmacological interventions are effective and feasible methods for the management of FOC; their integration into routine pregnancy care will improve women's birth experiences and support maternal and child health.

**Key words:** Fear; Parturition; Fear of childbirth; Tokophobia; Nonpharmacological interventions; Prenatal education; Support, psychological.

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## Introduction

Fear of childbirth (FOC) is a multifaceted psychological condition observed in pregnant women, ranging from mild anxiety to severe tokophobia. It encompasses concerns related to labour pain, perceived loss of control, potential obstetric complications, maternal and neonatal health risks and negative expectations regarding the birth experience.<sup>1,2</sup> Recent epidemiological studies report that the prevalence of FOC varies between 6–25 % in low-risk pregnancies and 30–50 % among high-risk populations.<sup>3,4</sup>

The clinical significance of FOC extends beyond psychological distress. Evidence suggests a correlation between elevated FOC levels and obstetric outcomes, including higher rates of caesarean section, instrumental delivery, epidural use and prolonged labour. Moreover, FOC has been associated with increased risk of postpartum trauma symptoms, anxiety and depression.<sup>1,5</sup>

Measurement of FOC is most commonly performed using the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ), which has

been validated across diverse cultural contexts. Complementary instruments such as the Fear of Birth Scale (FOBS) provide practical alternatives for clinical assessment.<sup>6</sup> Identified risk factors include previous traumatic birth experiences, a history of anxiety or depression, lack of social support, exposure to negative birth narratives and specific obstetric histories, such as prior emergency caesarean sections.<sup>7-9</sup>

Non-pharmacological interventions are increasingly recognised as effective strategies for managing FOC. Structured prenatal education programs, cognitive-behavioural therapy, mindfulness-based approaches, yoga, breathing exercises and hypnobirthing have demonstrated efficacy in reducing anxiety and enhancing perceived control during childbirth. Additionally, midwife-led continuity of care models and active partner participation have shown promise in improving birth experiences and mitigating fear.<sup>10,11</sup>

## Methods

This study is a narrative review that aimed to summarise the current evidence on non-pharmacological interventions for the management of FOC. Relevant studies published in English between 2000 and 2025 were identified through searches in *PubMed*, *Scopus* and *Web of Science* using combinations of keywords such as “fear of childbirth,” “tokophobia,” “non-pharmacological interventions,” “prenatal education,” “mindfulness,” “yoga,” “breathing techniques,” “hypnobirthing” and “midwife-led continuity models.”

Studies were considered if they addressed non-pharmacological approaches for reducing FOC in pregnant women. Pharmacological-only interventions, case reports and non-peer-reviewed articles were excluded. The findings were narratively synthesised to highlight the types of interventions, their reported outcomes and potential implications for clinical practice.

## Results

A review of the extant literature revealed a range of non-pharmacological interventions that have been shown to be effective in reducing the FOC

experienced by pregnant women. The interventions vary in approach, duration and theoretical basis, yet all share the goal of enhancing women’s psychological preparedness and perceived control over the birth process.

### Antenatal education programs

Structured prenatal education programs consistently show reductions in FOC by providing detailed knowledge about labour processes, coping strategies and postnatal care. Studies by Rouhe et al and Nilsson et al report that women participating in these programs experience lower anxiety scores measured via the W-DEQ and report higher perceived control during labour. These programs facilitate informed decision-making and empowerment, critical elements in mitigating fear.<sup>12,13</sup>

### Cognitive behavioural therapy (CBT)

CBT, when specifically tailored to address FOC, has been demonstrated to result in significant reductions in both trait and state anxiety. Nilsson et al demonstrated a 25–30 % reduction in W-DEQ scores following structured CBT interventions.<sup>13</sup> Van der Meulen et al highlighted that CBT improves coping strategies, reframes maladaptive beliefs about childbirth and decreases avoidance behaviours, thereby directly impacting perceived control and emotional regulation.<sup>14</sup>

### Mindfulness and meditation

Mindfulness-based interventions, including meditation and relaxation exercises, have been associated with decreased FOC, reduced stress hormones and improved psychological well-being.<sup>15-17</sup> These interventions encourage present-moment awareness and reduce catastrophic thinking, enabling women to approach labour with greater equanimity.

### Yoga and breathing techniques

Prenatal yoga and controlled breathing exercises are effective in reducing anxiety, promoting relaxation and enhancing pain tolerance. Field et al reported that women practicing yoga and diaphragmatic breathing exhibited lower cortisol levels, decreased self-reported anxiety and improved labour satisfaction. Such techniques not only address physical tension but also reinforce mental resilience during labour.<sup>18,19</sup>

## Hypnobirthing

Hypnobirthing programs combine guided imagery, deep relaxation and positive affirmations to reduce childbirth-related anxiety.<sup>11</sup> Toohill et al demonstrated that participants reported decreased fear and improved coping during labour, highlighting the intervention's role in reducing perceived pain and increasing birth satisfaction.<sup>20</sup>

## Midwife-led continuity of care and partner participation

Continuity of care models, where women are supported by a known midwife throughout pregnancy and childbirth, are consistently associat-

ed with reduced FOC, increased satisfaction and lower intervention rates.<sup>10, 18, 21</sup> Partner involvement in these models further enhances emotional support, reduces perceived helplessness and contributes to improved maternal confidence during labour.

Overall, the evidence indicates that non-pharmacological interventions target both the cognitive (knowledge, beliefs, coping strategies) and affective (anxiety, fear, perceived control) dimensions of FOC. While heterogeneity in study designs and intervention protocols exists, all interventions converge on promoting empowerment, psychological safety and enhanced birth experiences.

**Table 1:** Summary of included studies on non-pharmacological interventions for reducing fear of childbirth (FOC)

Author(s), year	Country	Sample size / population	Intervention	Key findings / effect on FOC
Rouhe et al, 2013	Finland	N = 371, pregnant women with severe FOC	Antenatal education (weekly sessions, 60–90 min; labour process, pain management, decision-making)	Reduced FOC, increased perceived control
Nilsson et al, 2018	Sweden	N = 108, pregnant women with FOC	Antenatal education and CBT (6–8 sessions, 50–60 min; thought records, coping strategies)	25–30% reduction in W-DEQ scores, improved coping
Van der Meulen et al, 2023	Netherlands	N = 142, pregnant women with FOC	Cognitive-behavioural therapy (group sessions, coping-focused)	Significant reduction in anxiety and FOC
Dinç et al, 2024	Turkey	N = 96, primiparous women	Mindfulness training (4 weeks; breath awareness, meditation exercises)	Decreased fear, improved psychological well-being
Veringa-Skiba et al, 2022	Netherlands	N = 112, pregnant women	Mindfulness-based childbirth program	Reduced fear, better emotional regulation
Shi and MacBeth, 2017	UK	N = 74, pregnant women	Mindfulness-based intervention	Lower anxiety and FOC levels
Field et al, 2013	USA	N = 92, pregnant women	Yoga and breathing (1–3 sessions/week, 20–60 min)	Reduced cortisol, decreased anxiety
Newham et al, 2014	UK	N = 59, pregnant women	Prenatal yoga program	Reduced fear, improved labour satisfaction
Toohill et al, 2014	Australia	N = 120, pregnant women	Hypnobirthing (4–6 weeks; visualisation, affirmations)	Reduced fear, improved birth experience
Souto et al, 2022	Brazil	N = 64, pregnant women	Hypnobirthing program	Decreased anxiety and FOC
Fenwick et al, 2015	Australia	N = 173, pregnant women	Midwife-led continuity of care	Reduced FOC, higher satisfaction
Sandall et al, 2016	Multicountry	N > 500, pregnant women	Midwife-led continuity models (partner involvement, birth plan counselling)	Lower intervention rates, improved control

Table 1 provides a summary of the included studies, presenting key information such as author, year, country, sample size, intervention and main findings. Collectively, the evidence highlights the potential of non-pharmacological strategies to reduce fear of childbirth, strengthen maternal psychological well-being and improve overall birth outcomes.

## Discussion

The findings of this narrative review demonstrate that non-pharmacological interventions provide a multidimensional and culturally adaptable framework for addressing FOC. Interventions such as antenatal education, CBT, mindfulness-based approaches, yoga, breathing techniques, hypnobirthing and midwife-led continuity models consistently showed positive effects in enhancing maternal psychological resilience, reducing anxiety and improving childbirth experiences. These outcomes suggest that FOC is best understood as a biopsychosocial phenomenon requiring integrative management strategies.<sup>12-16</sup>

Antenatal education and structured preparation programs were effective in enhancing women's perceived control and self-efficacy, which are key determinants of satisfaction with childbirth.<sup>12, 13</sup> Similarly, CBT demonstrated reductions of up to 25–30 % in W-DEQ scores, indicating its potential for reshaping maladaptive cognitions.<sup>14</sup> Mindfulness-based interventions and yoga further complemented this approach by supporting emotional regulation and physiological relaxation, with studies reporting reductions in stress markers such as cortisol.<sup>18, 19, 22</sup>

Hypnobirthing and partner-inclusive models of care also showed beneficial effects by enhancing women's sense of security and reducing unnecessary medical interventions.<sup>10, 20</sup> Importantly, continuity of midwife-led care emerged as one of the strongest predictors of both reduced FOC and increased maternal satisfaction, underscoring the critical role of relational aspects of care.<sup>11</sup> Partner participation further amplified these outcomes by providing emotional support and reinforcing coping capacity.<sup>11, 16</sup> Together, these findings highlight the multidimensional nature of FOC and the value of comprehensive care models.

## Limitations of current evidence

Despite promising outcomes, the current body of evidence has several limitations. Considerable heterogeneity in study designs, intervention duration and outcome measures complicates direct comparisons. Standardised tools such as the W-DEQ and FOBS were not consistently applied.<sup>12-14</sup> Moreover, the majority of studies were conducted in high-income countries, limiting generalisability to low- and middle-income contexts.<sup>23, 24</sup>

Most studies also had short-term follow-up periods, leaving uncertainty about whether reductions in FOC persist into the postpartum phase or across subsequent pregnancies.<sup>16, 25-27</sup> The impact of interventions on obstetric outcomes (eg, mode of delivery, maternal request for caesarean section, neonatal outcomes) remains underexplored. Furthermore, very few studies evaluated cost-effectiveness, which restricts the potential for informing policy-level implementation.

## Evidence quality and publication bias

The overall quality of the evidence included in this narrative review is moderate. Many studies had small sample sizes, short-term follow-ups and methodological limitations, such as lack of randomisation or blinding, which restrict the strength of conclusions. Standardised outcome measures were not consistently applied, further limiting comparability. In addition, publication bias may be present, as studies reporting positive effects are more likely to be published than those with null or negative results. Therefore, the findings should be interpreted with caution and further high-quality research is needed to confirm the effectiveness of non-pharmacological interventions for FOC.

## Clinical implications

Integrating non-pharmacological interventions into maternity care may provide a cost-effective and patient-centred complement to pharmacological methods.<sup>12, 13, 23</sup> Antenatal education represents a feasible entry point for wide implementation, while mindfulness and CBT—particularly when delivered digitally—offer scalable options for resource-limited settings.<sup>15, 16, 28</sup> Midwives play a central role in delivering these approaches and partner involvement can further strengthen outcomes.<sup>11, 16, 29</sup>

## Future directions

Future research should prioritise large, multi-centre randomised controlled trials (RCTs) with harmonised outcome measures to enhance comparability.<sup>14, 16, 23, 25, 30</sup> Cross-cultural investigations are essential to capture sociocultural influences on both FOC and intervention effectiveness. Long-term follow-up studies are needed to assess sustained effects across pregnancies. Moreover, cost-effectiveness analyses and studies exploring digital delivery methods should be expanded.

## Conclusion

Non-pharmacological interventions are an important component of comprehensive maternity care. While current evidence suggests beneficial effects on reducing fear and enhancing women's sense of control, findings must be interpreted with caution due to methodological limitations and potential bias. Their thoughtful integration into routine practice—accompanied by ongoing research addressing cultural adaptability, cost-effectiveness and long-term outcomes—can contribute to transforming childbirth into a more positive and empowering experience for women worldwide.

## Ethics

This study was a secondary analysis based on the currently existing data and did not directly involve with human participants or experimental animals. Therefore, the ethics approval was not required in this paper.

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## Conflicts of interest

The author declares that there is no conflict of interest.

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## Data access

The data that support the findings of this study are available from the corresponding author upon reasonable individual request.

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## References

1. Dal Moro APM, Soecki G, de Fraga FS, Petterle RR, Rückl Sz. Fear of childbirth: prevalence and associated factors in pregnant women of a maternity hospital in southern Brazil. *BMC Pregnancy Childbirth*. 2023;23:632. doi: 10.1186/s12884-023-05948-0.
2. O'Connell MA, Leahy-Warren P, Kenny LC, O'Neill SM, Khashan AS. The prevalence and risk factors of fear of childbirth among pregnant women: a cross-sectional study in Ireland. *Acta Obstet Gynecol Scand*. 2019;98(8):1014-1023. doi: 10.1111/aogs.13599.
3. Wattanawilaikul R, Benchahong S, Chanthasenanont A, Niumpradit T, Pongrojapaw D, Suwannarurk K. Prevalence of fear of childbirth among nulliparous women. *J Med Assoc Thai*. 2025;108:143-50. doi: 10.35755/jmedassocthai.2025.2.143-150-01793.
4. Rouhe H, Salmela-Aro K, Halmesmäki E, Saisto T. Fear of childbirth according to parity, gestational age, and obstetric history. *BJOG*. 2009;116:67-73. doi: 10.1111/j.1471-0528.2008.02002.x.



5. Wigert H, Nilsson C, Dencker A, Begley C, Jangsten E, Sparud-Lundin C, et al. Women's experiences of fear of childbirth: a metasynthesis of qualitative studies. *Int J Qual Stud Health Well-being*. 2020 Dec;15(1):1704484. doi: 10.1080/17482631.2019.1704484.
6. Khwepeya M, Huang HC, Lee GT, Kuo SY. Validation of the Wijma delivery expectancy/experience questionnaire for pregnant women in Malawi: a descriptive, cross-sectional study. *BMC Pregnancy Childbirth*. 2020;20(1):455. doi: 10.1186/s12884-020-03146-w.
7. Gagnon R, Champagne-Poirier O. Giving birth to another child: women's perceptions of their childbirth experiences in Quebec. *Qual Health Res*. 2021;31(5):955-66. doi: 10.1177/1049732320987831.
8. Hildingsson I, Rubertsson C, Karlström A, Haines H. A known midwife can make a difference for women with fear of childbirth—birth outcome and women's experiences of intrapartum care. *Sex Reprod Healthc*. 2019;21:33-8. doi: 10.1016/j.srhc.2019.06.004.
9. Dongning H, Jinling Z, Guoyu W, Yan H, Na L, Mingxin Z, et al. Prevalence and factors associated with fear of childbirth in late pregnancy: a cross-sectional study. *Front Public Health*. 2025;13:1589568. doi: 10.3389/fpubh.2025.1589568.
10. Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. *Cochrane Database Syst Rev*. 2016;4(4):CD004667. doi: 10.1002/14651858.CD004667.pub5.
11. Souto SPA, Silva RCG, Prata AP, Guerra MJ, Couto C, Albuquerque RS, et al. Midwives' interventions for reducing fear of childbirth in pregnant women: a scoping review. *JBIM Evid Synth*. 2022;20(12):2867-935. doi: 10.11124/JBIES-21-00382.
12. Rouhe H, Salmela-Aro K, Toivanen R, Tokola M, Halmesmaki E, Saisto T. Obstetric outcome after intervention for severe fear of childbirth in nulliparous women—randomised trial. *BJOG*. 2013;120(1):75-84. doi: 10.1111/1471-0528.12011.
13. Nilsson C, Hessman E, Sjöblom H, Dencker A, Jangsten E, Mollberg M, et al. Definitions, measurements and prevalence of fear of childbirth: a systematic review. *BMC Pregnancy Childbirth*. 2018;18:28. doi: 10.1186/s12884-018-1659-7.
14. Van der Meulen RT, Veringa-Skiba IK, Van Steensel FJA, Bögels SM, De Bruin EI, et al. Mindfulness-based childbirth and parenting for pregnant women with high fear of childbirth and their partners: outcomes of a randomized controlled trial assessing short- and longer-term effects on psychological well-being, birth and pregnancy experience. *Midwifery*. 2023;116:103545. doi: 10.1016/j.midw.2022.103545.
15. Dinç S, Erdoğan E, Doğan RA. The effect of mindfulness-based childbirth education intervention on fear of childbirth: systematic review and meta-analysis. *Rev Assoc Med Bras* (1992). 2024;70(7):e20240167. doi: 10.1590/1806-9282.20240167.
16. Veringa-Skiba IK, de Bruin EI, van Steensel FJA, Bögels SM. Fear of childbirth, nonurgent obstetric interventions, and newborn outcomes: a randomized controlled trial comparing mindfulness-based childbirth and parenting with enhanced care as usual. *Birth*. 2022;49(1):40-51. doi: 10.1111/birt.12571.
17. Shi Z, MacBeth A. The effectiveness of mindfulness-based interventions on maternal perinatal mental health outcomes: a systematic review. *Mindfulness*. 2017;8:823-47. doi: 10.1007/s12671-016-0673-y.
18. Field T, Diego M, Delgado J, Medina L. Yoga and social support reduce prenatal depression, anxiety and cortisol. *J Bodyw Mov Ther*. 2013;17(4):397-403. doi: 10.1016/j.jbmt.2013.03.010.
19. Newham JJ, Wittkowski A, Hurley J, Aplin JD, Westwood M. Effects of antenatal yoga on maternal anxiety and depression: a randomized controlled trial. *Depress Anxiety*. 2014;31(8):631-40. doi: 10.1002/da.22268.
20. Toohill J, Fenwick J, Gamble J, Creedy DK, Buist A, Turkstra E, et al. A randomized controlled trial of a psycho-education intervention by midwives in reducing childbirth fear in pregnant women. *Birth*. 2014;41(4):384-94. doi: 10.1111/birt.12136.
21. Fenwick J, Toohill J, Gamble J, Creedy DK, Buist A, Turkstra E, et al. Effects of a midwife psycho-education intervention to reduce childbirth fear on women's birth outcomes and postpartum psychological wellbeing. *BMC Pregnancy Childbirth*. 2015;15:284. doi: 10.1186/s12884-015-0721-y.
22. Schlegel R. The effect of yoga on maternal stress and anxiety: a systematic review. *J Health Des*. 2020;223-39. doi: 10.21853/JHD.2020.94.
23. Feli R, Heydarpour S, Yazdanbakhsh K, Heydarpour F. The effect of mindfulness-based counselling on the anxiety levels and childbirth satisfaction among primiparous pregnant women: a randomized controlled trial. *BMC Psychiatry*. 2024;24:964. doi: 10.1186/s12888-024-06442-3.
24. Vázquez-Lara MD, Ruger-Navarrete A, Mohamed-Abdel-Lah S, Gómez-Urquiza JL, Fernández-Carrasco FJ, Rodríguez-Díaz L, et al. The Impact of Mindfulness Programmes on Anxiety, Depression and Stress During Pregnancy: a systematic review and meta-analysis. *Healthcare (Basel)*. 2025;13(12):1378. doi: 10.3390/healthcare13121378.
25. Kamalimanesh B, Moradi M, Fathi M, Afiat M, Rezazadeh MB, Shakeri MT. Effect of self-hypnosis on fear and pain of natural childbirth: a randomized controlled trial. *J Complement Integr Med*. 2025;22(2):353-62. doi: 10.1515/jcim-2024-0353.
26. Amiri P, Mirghafourvand M, Esmaeilpour K, Kamalifard M, Ivanbagha R. The effect of distraction techniques on pain and stress during labor: a randomized controlled clinical trial. *BMC Pregnancy Childbirth*. 2019;19(1):534. doi: 10.1186/s12884-019-2683-y.
27. Masroor P, Mehrabi E, Nourizadeh R, Pourfathi H, Asghari-Jafarabadi M. The comparison of the effect of non-pharmacological pain relief and pharmacological analgesia with remifentanyl on fear of childbirth and postpartum depression: a randomized controlled clinical trial. *BMC Pregnancy Childbirth*. 2024;24(1):305. doi: 10.1186/s12884-024-06270-z.
28. Kuo TC, Au HK, Chen SR, Chipojola R, Lee GT, Lee PH, et al. Effects of an integrated childbirth education program to reduce fear of childbirth, anxiety, and depression, and improve dispositional mindfulness: A single-blind randomised controlled trial. *Midwifery*. 2022 Oct;113:103438. doi: 10.1016/j.midw.2022.103438.
29. Veringa IK, de Bruin EI, Bardacke N, Duncan LG, van Steensel FJ, Dirksen CD, et al. 'I've Changed My Mind', Mindfulness-Based Childbirth and Parenting (MBCP) for pregnant women with a high level of fear of childbirth and their partners: study protocol of the quasi-experimental controlled trial. *BMC Psychiatry*. 2016 Nov 7;16(1):377. doi: 10.1186/s12888-016-1070-8.
30. Kundarti FI, Kiswati I, Komalyna NT. Mindfulness based intervention reduce anxiety in labor. *Gac Sanit*. 2024;38:27. doi: 10.1016/j.gaceta.2024.102359.