**Interventions to treat fear of childbirth in pregnancy: a systematic review and meta-analysis**

**Supplementary Information**

**Appendix S1: Search Strategy**

Search terms used for systematic searches

|  |  |  |  |
| --- | --- | --- | --- |
| Population | Fear of Childbirth | Caesarean section by maternal choice | Measurement |
| \*natal | Fear of childbirth | Caesarean section | \*therapy |
| \*partum | Tocophobia | Caesarean\* | Counselling |
| Pregnan\* | Tokophobia | Abdom\* deliver\* | Intervention |
| Birth |  | extraction | Psych\* |
| Labour OR labor |  | C section |   |
| Parent\* |  | c-section |  |
| Mother\* |  | csection |  |
|  |  | AND |  |
|  |  | Patient preference |  |
|  |  | Choice |  |
|  |  | Choose  |  |
|  |  | Request |  |
|  |  | prefer |  |
|  |  | Deci\* |  |
|  |  | Seek |  |
|  |  | Plan |  |
|  |  | Elect\* |  |
|  |  | Schedule\* |  |
|  |  | Prearrange\* |  |
|  |  | Non-emergency |  |
|  |  | Demand |  |

**Databases used for searching:**

MEDLINE, PsycINFO, PsychARTICLES, EMBASE, Cochrane Library, HMIC, Web of Science, PubMed and Scopus databased

**Table S1. PRISMA Checklist**

(Moher et al., 2016)

|  |  |  |  |
| --- | --- | --- | --- |
| **Section/topic**  | **#** | **Checklist item**  | **Reported on page #**  |
| **TITLE**  |  |
| Title  | 1 | Identify the report as a systematic review, meta-analysis, or both.  | 1 |
| **ABSTRACT**  |  |
| Structured summary  | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.  | 2 |
| **INTRODUCTION**  |  |
| Rationale  | 3 | Describe the rationale for the review in the context of what is already known.  | 3-4 |
| Objectives  | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).  | 4 |
| **METHODS**  |  |
| Protocol and registration  | 5 | Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.  | 4 |
| Eligibility criteria  | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.  | 4 |
| Information sources  | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.  | Appendix S1 |
| Search  | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.  | Appendix S1 |
| Study selection  | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).  | 4 |
| Data collection process  | 10 | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.  | 5 |
| Data items  | 11 | List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.  | 5 |
| Risk of bias in individual studies  | 12 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.  | 5 |
| Summary measures  | 13 | State the principal summary measures (e.g., risk ratio, difference in means).  | 5-6 |
| Synthesis of results  | 14 | Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.  | 5-6 |

**Table S2. Studies included in the review**

|  |  |  |
| --- | --- | --- |
|  |  | **Cognitive/cognitive behavioural therapy (k = 11 from 6 studies)** |
| **Paper No** | **Study no** | **Citation****Country****Design** | **Participant characteristics****Number in sample (n)** | **Measure used to determine FOC** | **Intervention** | **Control** | **Randomised?** | **Outcome measure** | **Outcome** | **Risk of bias** |
| 1 | 1 | (K. Nieminen et al., 2015)SwedenQualitative data from pre-post interventional  | Age: M = 29.5100% cohabiting80% university degreeN = 15 | WDEQ-A1 ≥ 100 | **Internet based CBT principle programme:** consisted of psycho-education, cognitive restructuring, exposure both imaginary and in vivo, as well as relapse prevention. The programme used weekly modules and included questions about the information but also tasks to self-train daily. | n/a | n/a | Semi-structured task carried out within the internet-based intervention. Participants were asked open-ended questions about their upcoming labour and delivery. | Prior to intervention participants saw their own role as anxious, uncertain and lonely. Post intervention participants saw their role with more certainty, and as active subjects with coping mechanisms to deal with the birth. | Medium |
| 2 | 1 | (Katri Nieminen, Andersson, Wijma, Ryding, & Wijma, 2016) Pre-post | Age M = 30.5, 96.5% cohabiting, 68% university degreeN = 28 | WDEQ-A1 ≥ 85 |  |  |  | FOC1 | There was a statistically significant decrease of FOC during treatment, with F(3.4, 48.2) = 27.35, p<0.0001. The Bonferroni post hoc correction revealed that the decrease started after module three (difference in W-DEQ sum score from pre-treatment to module four: 16.6± 6.4, p = 0.02), which corresponded with the introduction of exposure tasks. |  |
| 3 | 2 | (T. Saisto, Salmela-Aro, & Nurmi, 2001)FinlandRCT | **Intervention (n = 85):** Age M = 31.2 (SD = 5.1)91% married/cohabiting. 71.4% work full time.**Control (n = 91):**Age M = 31.9 (SD = 4.8)92% married or cohabiting70.8% work full time | Five or more affirmative answers on Areskog questionnaire2 or request for cesarean. | **Intensive therapy:** Intensive therapy was an intensive cognitive therapy delivered by obstetrician with training and cognitive therapy and the psychology of childbirth. The main principles of the therapy are to focus on one target problem involving the active role of the therapist and reformulation of the problem during a limited time.**Intervention details:** M = 3.8 sessions with obstetrician and M = 1 with midwife. | Yes | **Conventional therapy:** M = 2 sessions, standard information about birth and pros and cons of vaginal and caesarean delivery | Birth modeBirth related concerns9FOC2 | **Birth mode:** Caesarean for psychosocial reasons was chosen by 20 women in the intensive therapy group (36% of those originally requesting it) and by 26 women in the conventional therapy group (41%) (p = .05).Labour was shorter in intensive group (M = 6.83 hours) compared to conventional group (M = 8.56 hours) (p = .039)**Birth related concerns:** T1: Before randomization the women in the intensive therapy group mentioned birth related concerns more frequently (M = 0.56) than did those in conventional therapy group (M = 0.39). After therapy birth-related concerns in the intensive therapy group had decreased, but in the conventional therapy group they had increased (P = .022).**FOC**No significant difference in birth related fear between groups, although the intensive group had a tendency for lower levels of fear. Fear of labour pain decreased in intensive therapy group (from M = 4.76 to M = 4.46), compared with the conventional therapy group (increase from M = 4.4 to M = 4.5) (P = .041). | Medium |
| 4 | 3 | (Larsson et al., 2017)SwedenRCT | **Intervention (n = 127)**70.9% aged between 25-3560.6% primiparous95.3% living with partner56.7% completed university or college **Control (n = 131)**73.3% aged between 25-3558.8% primiparous93.1% living with partner50.4% completed university or collegep>.05 | Fear of birth scale3 ≥ 60 | **Internet based CBT (ICBT)**The program uses an educative approach where fear is presented as an experience including cognition, behaviour and physical sensations. The participants are taught to identify different aspects of their emotional experience (fear), how to avoid negative emotions and how to use alternative strategies in terms of acceptance, mindfulness and exposure.There were eight treatment modules. The modules consisted of text material and assignments closely related to the content for each speciﬁc module.When the required assignment was completed for the active module, the psychologist gave the women written feedback via the portal. In addition to this feedback system, women in the intervention group could communicate with their psychologist through the portal at any time for support. | **Counselling from midwives** | **Yes –** Computer based randomisation system | Birth preferenceBirth outcomesSatisfaction with treatmentPerceived effect of treatment | **Birth preference****Intervention:**Pre – Vaginal 66%Post – Vaginal 88%**Control**Pre – Vaginal 76%Post – Vaginal 80%Not sig**Mode of birth****Intervention:**74.1% vaginal birth7.4% instrumental birth3.7% planned caesarean14.8% emergency caesarean**Control**58.8% vaginal birth10% instrumental birth10% planned caesarean17% emergency caesareanp>.05**Satisfaction with treatment****Intervention**61.4% less than satisfied**Control**26% less than satisfiedP<.001**Perceived effect****Intervention**56.8% fear increased/did not affect fear**Control**19.2% fear increased/did not affect fearP<.001 | Low |
| 5\*▲ | 3 | (Rondung et al., 2018) |  |  |  |  |  | Treatment adherenceFOC3 | **Treatment adherence**81% commended treatment. Mean time logged onto portal was 39.96 minutes (SD = 49.88; Range = 1-244 minutes). **FOC****Intervention:**Pre-intervention M = 71.76 (SD = 5.73)Post-intervention: M = 67.15 (SD = 8.62)Follow up: M = 41.03 (SD =22.45)\***Standard care**Pre-intervention M = 69.92 (SD = 7.33)Post-intervention M = 65.73 (SD = 9.65)Follow up: M = 47.87 (SD =24.10)\*\*P = .049 for follow up |  |
| 6 | 3 | (Baylis, Ekdahl, Haines, & Rubertsson, 2019) | Qualitative data from 19 women who received ICBTAge: 25-38; 16 women university education; 14 women first time mothers |  |  |  |  | Qualitative data | Experiences of iCBT: useful, meaningful and helpful, BUT the intervention did not necessarily relate to their own specific fears.Relationship over the internet: some women felt ICBT was positive, supportive and flexible. The majority would have preferred more face to face treatment and found it difficult to work alone. Some women found it time consuming especially if they had other children.Helpful but not enough: Women reported ICBT was not helpful if they have already had negative experience of birth. Women also found maintaining motivation difficult |  |
| 7\*► | 3 | (Hildingsson & Rubertsson, 2019) |  |  |  |  |  | Birth outcomesChildbirth experience | **Birth outcomes****Intervention:**Induction of labour: 22.2%Vaginal birth: 70.7%Positive/very positive birth experience: 54.8%**Control:**Induction of labour: 16.9%Vaginal birth: 60.6%8Positive/very positive birth experience: 50.0%p>.05**Childbirth experience**There was no statistically significant difference in the perceptions of the birth experience, regardless of the treatment method. |  |
| 8 | 3 | (Larsson, Hildingsson, Ternström, Rubertsson, & Karlström, 2019) | 27 women who received midwife counselling as part of RCTMajority aged between 24-38; 18 first time mothers; 16 had unassisted vaginal birth |  |  |  |  | Qualitative data | The majority of women expressed that counselling and the birth experience contributed to a less troublesome level of fear or that they now had the capacity to manage their fear. A few women stated that they had no worries or fears at all after the counselling and birth.Improved attitude towards giving birth: The information that women received by the counselling midwives is described as crucial for feeling ‘safe in the uncertainty’. The preparedness, and in some cases the processing, gave the women an improved attitude toward the approaching birth and several thought that this preparation was an important part of their experiencing a positive birth. The majority of womenwould consider receiving counselling again in a future pregnancy if needed.  |  |
| 9\*▲ | 4 | (Uçar & Golbasi, 2019)TurkeyQuasi-experimental – pre-post | **Intervention (n = 52)**Age: M = 25.3 (SD = 4.0)50% completed high school92.3% not working**Control (n = 59)**Age: M = 25.7 (SD = 4.3)45.8% completed high school96.6% not workingNo significant differences between groups. | WDEQ-A1 | **CBT & Educational programme**The main purpose of the educational program was to enable pregnant women to cope with their childbirth fears using CBT within the scope of childbirth preparation education. The cognitive behavioral approaches used during the educational program were recording non-functional thoughts, questioning automatic thoughts, teaching the ABC model, question and answer, relaxation techniques, homework, demonstration and feedback. All sessions were conducted in groups of five to nine participants. The program was completed in 3 weeks over six sessions that occurred once a week, two sessions per day. Each session took approximately 45 minutes with a 15-minute break before the second. | SMC | No - The pregnant women presenting to the polyclinic between December 2012 and March 2013 constituted the control group and those presenting between April and July 2013 constituted the intervention group. | FOC1Obstetric outcomes | **FOC****Intervention:** Pre: M = 63.9 (SD = 26.8)Post: M = 39.4 (SD = 21.0)T = 8.686, p <.001**Control**Pre: M = 58.4 (SD = 23.5)Post: M = 63.5 (SD = 25.5)T = 3.01, p = .004There was also a significant difference between groups at post-test (t = 8.987, p <.001).**Obstetric outcomes**Pain severity: Intervention M = 6.3 (SD = 1.9); Control: M = 8.3 (SD = 1.4) (t = 6.009, p <.001)Length of stage 2 labour in minutes: Intervention M = 22.4 (SD = 5.5); Control: M = 27.1 (SD = 12.6) (t = 2.182, p =.033).Childbirth satisfaction: Intervention: M = 3.5 (SD = 1.0); Control M = 2.8 (SD = 1.2) (t = -3.404, p = .001). No significant differences in induction of labour, amniotomy, episiotomy, laceration, or foetal distress.  | Medium |
| 10\*▲ | 5 | (Kordi, Bakhshi, Masoudi, & Esmaily, 2017)Iran RCT | **Intervention group (n = 60**)Age M = 23.2 (SD =3.6)41.7% completed high school87.6% housewife**Control (n = 62)**Age M = 24.2 (SD = 4.4)43.5% completed high school80.6% housewifep>.05 | WDEQA1≥66 | **Psychoeducational programme**Session 1: Explaining delivery, emotional changes, dealing with stress, understanding relationship between thoughts, behaviours and feelings, motherhood skills, relaxation.Session 2: Role of thoughts in behaviour, logical and illogical thoughts, ABC model, relaxationSession 3: problem solving, self esteem, relaxation90minutes per session, run by a psychologist. | SMC | Yes – draw bag | FOC1Birth outcomes | **FOC**Pre intervention:Intervention M = 91.4 (SD = 20.4)Control M = 88.0 (SD = 16.1) (P>.05)Post intervention:Intervention: M = 83.5 (SD = 21.7)Control M = 92.6 (SD = 18.4)P = .007Also a significant difference between T1 & T1 for intervention group (p =.003) **Birth outcomes**No significant differences | Low |
| 11\*► | 6 | (Sydsjö et al., 2015)SwedenQuasi-experimental | **Intervention (n = 181)**70.6% aged 25-34; 19.4% had normal BMI; 42.5% low white-collar worker**Control (n = 431)**59.6% were aged 25-34; 26.5% normal BMI; 46% low white collar workerSignificant differences between age, BMI & employment group | DSM-IV4 | **Individualised counselling -**  based on psycho-education e.g. determine the woman’s knowledge on childbirth and carefully educate her in relaxation, explain the physiological features of panic and anxiety; and cognitive behaviour theory e.g. assess thoughts, measure feelings and discuss avoidance and how to alter the reactions on certain thoughts. For most of the women, an individual visit to the delivery ward was part of the treatment as an exposure for the fear situation. The number of sessions attended by each woman was based on each woman’s individual needs. | SMC | No – women didn’t receive therapy because they didn’t have FOC | Obstetric outcomes  | **Treatment outcomes**The FOC women who had participated in counselling/treatment had on the average 1.6 sessions with a midwife, 1 session with a physician and 0.6 sessions with a psychotherapist, thus 3.2 visits per woman (range 1–12 sessions).**Obstetric outcomes****Unassisted vaginal delivery**: Intervention 51.7%; Control 62.9%**Instrumental vaginal delivery**: Intervention: 14.4%; Control: 18.3%**Emergency CS:** Intervention: 14.4%; Control 15.5%**Elective CS:** Intervention: 19.4%; Control: 3.2%P <.001 | Medium  |
|  |  | **Other talking therapies (k = 16 papers from 12 studies)** |
| **Paper no.** | **Study no.** | **Citation****Country****Design** | **Participant characteristics****Number in sample (n)** | **Measure used to determine FOC** | **Intervention** | **Control** | **Randomised?** | **Outcome measure** | **Outcome** | **Risk of bias** |
| 12\*▲ | 7 | (Ahmadi et al., 2018)IranQuasi-experimental | **Control (n = 35)**Age: Women: M = 25.58 (SD = 3.63)Partners: M = 31.42 (SD = 3.21)Education: Women: M = 14.24 years (SD = 2.54)Partners: M = 14.00 years (SD = 2.64)50.00% 5th economic class42.1% 3rd social class**Intervention (n = 36)**Age: Women: M = 25.87 (SD = 3.62)Partners: M = 30.89 (SD = 3.60)Education: Women: M = 13.97 years (SD = 2.83)Partners: M = 13.94 years (SD = 2.83)52.60% 5th economic class52.6% 3rd social class | WDEQ-A1 | **Couples counselling -**  3 weekly counselling sessions based on a problem-solving approach. Covered communication, education on labour and birth, causes of fears, overcoming negative self talk, and problem solving.  | SMC | No | Women’s knowledgeWomen’s FOC1Women’s self-efficacy5Men’s knowledgeBirth mode | **Women’s knowledge**Improvement in both intervention (Pre: M = 5.86; SD = 1.72; Post: M = 9.25; SD = .93, p <.001) and control (Pre: M = 4.48; SD = 1.2; Post: M = 5.51; SD = 1.12, p <.001)**Women’s FOC**Reduction only in intervention group (Pre: M = 87.58; SD = 14.98; Post: M = 63.12; SD = 17.08, p <.001**Women’s self-efficacy**Improvement in both intervention (Pre: M = 79.50 SD = 6.88; Post: M = 135.53; SD = .3.83, p <.001) and control (Pre: M = 71.97; SD = 16.11; Post: M = 76.62; SD = 15.76, p <.001)**Men’s knowledge**Improvement in both intervention (Pre: M = 5.20; SD = 2.04; Post: M = 9.14; SD = .80, p <.001) and control (Pre: M = 4.11; SD = 1.09; Post: M = 5.28; SD = 79, p <.001)**Birth mode**36 women in the control, compared to 14 women in the intervention had a caesarean section (p <.001).24 women in the intervention, compared to 2 in the control had a vaginal delivery (p<.001) | Medium |
| 13\*▲ | 8 | (Andaroon, Kordi, Kimiaei, & Esmaeily, 2017)IranRCT | No significant differences between groups in terms of education, occupation, or socioeconomic statusN = 93 (45 in intervention group) | WDEQ-A1 = 38-84 | **Individual counselling** Individual counselling was done face to face. Covered topics such as expressing emotions, communication feelings, beliefs and expectations, strategies to reduce the fear. 3 sessions lasting 45-60 minutes | SMC | Yes – by draw | FOC | **Intervention:**Pre: M = 62.87; SD = 12.66During: M = 39.73; SD = 17.09After birth: M = 35.89; SD = 12.64**Control**Pre: M = 63.89 (SD = 14.13)During: M = 65.67 (SD = 15.02)After birth: M = 61.69 (SD = 12.55)Significant differences between groups during the intervention and after birth.  | Low |
| 14 | 9 | (Halvorsen, Nerum, Sørlie, & Øian, 2010)NorwayNon-experimental | Two samples of women referred to crisis counselling for their wish to have a CS because of their FOC**Sample 1:** Age M = 31 years (SD = 5.1), 85/86 married/cohabIting56/86 university college educationN = 86**Sample 2:** Age M = 31 years (SD = 6.5) 81/107 married cohabiting, 49/107 university educationN = 107 | Assessment of the following five dichotomous variable for grading fear of birth:(1)sleep problems(worries and nightmares)and difficulty concentrating; (2) physiological manifestations of anxiety, such as trembling, sweating, rapid pulse and respiration (3)little or no insight into what the fear of birth represented; (4)large degree of experienced loss of control and predictability of the impending birth; and(5)fear of dying during pregnancy or birth. If four or five criteria were present, the fear of birth was defined as ‘severe’, and if three were present, it was defined as ‘moderate’. | **Crisis oriented counselling:** conducted by 2 midwives with training in mental health. The counselling was individualised. Included initial thorough examination of current and previous mental health status. | n/a | n/a | Request for a CS | **Sample 1:** 86% didn’t want to have a CS after counselling, 70% had vaginal birth after counselling.In sample 1 a multiple logistic regression showed that vaginal birth was positively associated with counselling by midwife A (OR = 12.44; p<0.001) and negatively associated with severe FOC (OR = 0.169; p<0.010).**Sample 2:** 95% didn’t want a CS after counselling. 80% had vaginal birth after counselling.In sample 2, vaginal birth was negatively associated with severe FOC (OR = 0.121; p < 0.004) and mental health problems (OR = 0.053; p ¼ 0.018). Counselling with a midwife was not a predictor. | Medium |
| 15 | 10 | (Henriksen, Borgen, Risløkken, & Lukasse, 2018)NorwayNon-experimental | Women attending one of five hospitals in Norway, with or without FOC. **Women with FOC (n =258):** 39.1% aged 31-35; 59.2% over 13 years of education; 20.3% with symptoms of depression24.9% received hospital counselling for FOC18.6% wanted CS**Women without FOC (n = 1,887):** 38.5% aged 25-30 74% over 13 years of education5.7% with symptoms of depression6.6% received hospital counselling5.2% wanted a caesarean P<.05 for all listed demographics  | WDEQ-A1 ≥ 85 | **Hospital counselling** - taken from woman’s health record about whether they had received hospital counselling. Differed across hospitals:**Oslo:** Individual consultations with midwives/doctors; no special methods used; goal was to make an individual birth plan; no recorded number of hours; given to 20/63 (88.89%) of women with FOC. **Dranmen**: individual consultations, used empathetic communication; goal to help each woman feel safe, prevent depression and feel that they can cope with motherhood, provided by midwives and obstetricians, 3-4 hours in total, given to 24/39 (61.54%) of women with FOC. **Tromso**: individual consultations, offered cognitive therapy. main goal was to map why woman had FOC, teach them how to cope, help them to feel safe; provided by midwives or obstetricians, 4 hours per woman; given to 4/45 (57.78%) of women. **Alesund**: individual consultations, no special method used, tried to identify women with previous difficult birth, provided by midwives and obstetrician, no record of hours, 16/61 (85.25%) of women received counselling. **Trondheim**: individual consultations, mix of cognitive therapy and empathetic communication, goal for women to achieve personal growth and cope with pregnancy and birth, 1.75hr per woman, 12/51 (50.98%) of women received counselling. | No counselling | No | Birth outcomes | Of the women who had FOC (not did not necessarily receive counselling)**Oslo:** 63.5% vaginal birth; 19% assisted vaginal; 15.9% elective CS; 1.6% emergency CS. **Buskerud:** 71.7% vaginal birth; 10.5% assisted vaginal; 15.8% elective CS; 2.6% emergency CS.Tromso: 68.9% vaginal; 6.7% assisted vaginal; 11.1% elective CS; 13.1% emergency CS.Alesund: Vagina: 75.4%; assisted vaginal 4.9%; elective CS 13.1%; emergency CS: 6.6%. Trondheim: Vaginal birth: 66.7%; assisted vaginal: 5.9%; elective CS: 13.7%; emergency CS: 13.7%Women with FOC who had no counselling were more likely to have a vaginal birth (79.5% vs 58.2%), less likely to have a planned CS (5% vs 22.8%).  | High |
| 16 | 11 | (Larsson, Karlström, Rubertsson, & Hildingsson, 2015)SwedenNon-experimental | 71.4% aged 25-35; 64% multiparous; 95.7% living with partner; 63.2% college/university education; 69.1% FOCN = 70 | The question regarding childbirth fear was: “Worries and fears are common feelings among women when facing childbirth. To what extent do you experience worry and fear at present?” The women answered using a four-point rating scale ranging from “a great deal” to “not at all.” In the analysis the variables were dichotomized into “a great deal/very much” and somewhat/not at all. If answering after birth, the question was framed for future births. | **Counselling -** Participants were asked about any counselling they received 2 months after birth "did you receive counselling due to fear of give birth "yes/no". If answered yes they were asked to provide more information about who provided the counselling and their level of satisfaction. | No counselling | No | Type of counselling reportedFOC one year after counsellingType of birth | **Type of counselling**40/70 women received counselling delivered by a specially trained midwife. 21/70 given counselling by regular midwife**FOC after counselling**Women who received counselling were still more fearful of birth (40.7%) compared to those who didn’t receive counselling (13%).There was no signiﬁcant change in fear from mid-pregnancy to 1 year after birth (p = 0.198). Women who received counselling expressed more negative birth experiences compared with the group without counselling 2 months after giving birth (OR 2.0, 95% CI 1.2–3.3). **Type of birth**Women who received counselling were more likely to plan a CS 2.1 vs 5.8%. No significant differences in vaginal birth rates, instrumental birth rates or emergency section rates 36.2% vs 7.2% would prefer to have a planned c section next time  | Medium |
| 17 | 12 | (Nerum, Halvorsen, Sørlie, & Øian, 2006)NorwayNon-experimental | Women referred to crisis counselling because of their FOCAge M = 31.385% multiparous85% married/cohabiting41% had college education or lessN = 86 | Assessment of the following five dichotomous variable for grading FOC:(1)sleep problems(worries and nightmares)and difficulty concentrating; (2) physiological manifestations of anxiety, such as trembling, sweating, rapid pulse and respiration (3)little or no insight into what the FOC represented; (4)large degree of experienced loss of control and predictability of the impending birth; and(5)fear of dying during pregnancy or birth. If four or five criteria were present, the FOC was defined as ‘severe’, and if three were present, it was defined as ‘moderate’. | **Crisis oriented counselling:** Emphasis on the following things - (a) good contact and alliance; (b) charting birth-related feelings and concerns; (c) charting the life situation, present and previous psychological and somatic health and obstetric risk; (d) formulating and processing anxiety and life events that could be activated by the impending birth; (f) distinguishing between birth as the provoking factor and difficult life themes as the cause of FOC; and (g) helping the woman to see solutions other than giving birth by planned caesarean. | n/a | n/a | Request for CS | After the intervention:86% of women changed their thinking about mode of birth, and prepared themselves for vaginal birth. This was split as following:93% low obstetric risk women changed their mind83% high obstetric risk women changed their minds.100% of women with moderate FOC changed their mind for having a CS after intervention. 79.3% of women with severe FOC changed their mind. | Medium  |
| 18 | 13 | (Ryding, Persson, Onell, & Kvist, 2003)SwedenQuasi-experimental | Median age = 30 years20/53 women requested as CS for their FOCWomen who had contacted the FOC teamN = 53 interventionN = 53 comparison | Not clear, but all women were under the care of a FOC team – a team of midwives who have been trained in counselling.  | **Counselling:** on the ward, run by midwives. Discussion of fears, building confidence, writing a birth plan | n/a | Comparison group that were selected by researchers and matched for parity | Childbirth experience6 | **Childbirth experience:****Intervention:** M = 44.3 (SD = 20.5)**Comparison:** M = 29.7 (SD = 7.4)The mean difference was 14.6 (95% CI 9.4–19.7, p0.0001.)“Those women who had been treated for FOC reported a rather more frightening experience of delivery, and more frequent symptoms of post-traumatic stress related to delivery than did the women in the comparison group” p. 10. | Medium |
| 19\*▲ | 14 | (Klabbers, Wijma, Paarlberg, Emons, & Vingerhoets, 2019)The NetherlandsRCT | **Haptotherapy (n = 51)** 62.7% first time parents; 70.5% high school education; Age M = 32.8 (SD = 4.6); WDEQ-A M = 101.1. **Psychoeducation (n = 39)** 43.6% first time parents; 53.8% high school education level; Age M = 31.8 (SD = 3.9); WDEQ-A M = 104.5**Control (n = 44)**56.8% first time mothers; 61.4% high school education; M = 32.6 (SD = 5.3); WDEQ-A M = 98.6 | WDEQ-A1 ≥ 85 | **Haptotherapy -** Haptotherapy claims to facilitate the development of specific skills changing the cognitive appraisal of giving birth and labeling childbirth as a more normal and positive life event, which may ultimately lower FOC. Consisted of training women in a combination of skills, which are taught in eight 1 h sessions between gestational week 20 and 36.**Psycho-education via the Internet -** consisted of eight modules (and a brief test) during a period of 8 weeks between gestational week 20 and 36, providing information about the normal course ofpregnancy, labor and birth | SMC | Yes | Adherence to intervention | **Adherence to intervention**Eleven assigned to the psychoeducation group switched to the haptotherapy group on their own initiative, as did 14 who had been assigned to the care as usual group.32 participants dropped out (haptotherapy: n = 9; psychoeducation: n = 14, care as usual:n = 9. **FOC**Haptotherapy versus psychoeducation via Internet (mean difference in change = 8.75: p = .250)Haptotherapy versus care as usual (mean difference in change = 11.09, p = .049).  | Medium |
| 20 | 14 | (Klabbers, Paarlberg, & Vingerhoets, 2018) |  |  |  |  |  | Mother-child bonding23 | There were no differences between women in the hapotherapy arm compared to control and psychoeducation (p = .121).However, haptotherapy improved mother-child bonding in women who had low mother-child bonding scores prior to the intervention. | Medium |
| 21\*▲ | 15 | (Soltani, Eskandari, Khodakarami, Parsa, & Roshanaei, 2017)IranRCT | **Intervention (n = 53)**Age M = 25.5 (SD = 3.5)**Control (n =53)**Age M = 25.7 (SD = 4.6) | CAQ8 | **Self-efficacy oriented counselling -**  6 sessions lasting between 60-90 minutes. Covers vaginal delivery, goals, exercising, expressing successful experiences, hearing others experiences, religious prayers, replacing irrational thoughts | SMC | Yes – doesn’t say how | FOC8Self-efficacy8 | **FOC**There was a significant decrease in FOC in the intervention group compared to the control group. **Self-efficacy**Pre interventionIntervention M = 246.43 (SD = 57.7)Control: M = 258.67 (SD = 48.86) p>.05Post-interventionIntervention M = 292.6 (SD = 54.24)Control: M = 2546.75 (SD = 54.22) p<.001 | Medium |
| 22 | 16 | (Sjogren, 1998)TurkeyNon-experimental | **Intervention (n = 72)**Age: Median = 33 (range 22-42)44 women had given birth before**Control (n = 72)**Matched controls, demographics not reported. Authors report that “Marital status, educational level, and types of occupation (medical and health care, service, office, economics, computer work, technicians, child care, teaching and official positions) and involuntary infertility proved to be similar in the groups” | Not clear | **Psychotherapy -** A systematic obstetrical and psychological history was taken by the author (obstetrician/gynecologist, trained in psychotherapy). The ability of the individual womanto benefit from conventional psychotherapy was evaluated. If a woman was very embarrassed by talking about herself, or if she just wanted to discuss her right to decide the model of the impending delivery, it was decided it would be very difficult or impossible to help her by conventional, verbal psychotherapy. As a result of this evaluation, some women in the study group were referred to a psychotherapist. The goals of the treatment were to identify the components of the anxiety, to reduce the anxiety and, if possible, to encourage the women to consider a vaginal delivery. The psychotherapy given by the therapist was eclectic, because this group of women was heterogeneous. | SMC | No – matched controls | 32-item questionnaire covering pregnancy, experience of birth, physical and mental health after delivery and health of infant. | Treatment acceptance According to the assessment, twenty-four women were offered conventional psychotherapy and eighteen women accepted.The mean number of therapeutic meetings of those who had psychotherapy was 8.6 (range 2–14). **Feelings about delivery, well-being and worry during pregnancy**The women in the intervention group regarded the pregnancy as a less positive experience (Intervention n = 28; Control n = 40, p =.017), felt emotionally unprepared for the delivery (Intervention n = 18; Control n = 8, p = .01); felt less feelings of vigor (Intervention: n = 44; Control n = 58, p = .002), poor psychic health (Intervention n = 37; Control n = 17, p = .038); more worry about their own health (Intervention n = 18; Control n = 9, p = .038). experience, and remembered significantly less well-being and more worry**Emotional experience of delivery**Delivery easier than expected (Intervention n = 43; Control n = 24, p = .004)Felt in control of delivery (Intervention n = 46; control n = 29, p =.024)Women in intervention group were slightly more anxious of their own death (12 vs 7) but this was not significant.  | Medium |
| 23 | 17 | (Sydsjö, Sydsjö, Gunnervik, Bladh, & Josefsson, 2012)SwedenQuasi-experimental | **Intervention (n = 353)**67% aged 25-3495.1% married/cohabiting45.2% skilled white collar workers19.3% previous CS17% previous instrumental delivery**Control (n = 579)**54.7% aged 25-3493.9% married/cohabiting44.6% skilled white collar workers8.1% previous CS7.3% previous instrumental deliveryP<.05 for age, previous CS and previous instrumental delivery | DSM-IV4 | **Individual counselling -**  including cognitive-behavioural and psychoeducational strategies. Women most often had one or two consultations at the unit for psychosocial obstetrics and gynecology; 47.3% of them met a specially trained midwife (1–7 sessions), 67.7% had consultations with an obstetrician (1–5 sessions) and 32.4% had consultations with a psychotherapist/psychologist (1–10 sessions). | SMC | No – women didn’t receive therapy because they didn’t have FOC | Obstetric outcomesPain relief | **Obstetric outcomes****Unassisted vaginal delivery**: intervention 50.9%; control: 74.7%**Instrumental delivery**: Intervention: 6.8%; control 10.7%**Emergency CS**: Intervention: 12.8%; control: 10.7%**Elective CS:** intervention: 29.5%; control: 3.8% p<.001**Pain relief****Epidural:** Intervention: 58.3%; control: 26.7%<.001**Pudental block**: Intervention: 3.9%; control: 0.8% P<.004 | Medium  |
| 24\*▲ | 18 | (Jocelyn Toohill et al., 2014)AustraliaRCT | **Intervention (n = 170)**Age M = 29 (SD = 5.9) Education of year 12 or less; 48.5% Nulliparous: 57.4% **Control (n = 169):** Age M = 29.2 (SD = 4.98)Educated year 12 or less: 36.1% Nulliparous: 59.8%  | WDEQ-A1 | **BELIEF Telephone psycho-education counselling:** The intervention aims to review women’s current expectations and feelings around FOC, support the expression of feelings, and provide a framework for women to identify and work through distressing elements of childbirth. | SMC | Yes | FOC1Childbirth self-efficacy8Depressive symptoms15 | **Fear of chidbirth****Intervention**: Mean score change = 19.52 (SD = 18.59Effect size 0.59**Control:**Mean score change = 9.28 (SD = 16.32). A change in 20 points was chosen to indicate a clinically meaningful change. More women in intervention group showed improved childbirth fear scores (n = 48/98, 49%) compared to controls (n = 25/96, 26% p = 0.002). After adjusting for preintervention scores, a signiﬁcant difference resulted between groups on postintervention W-DEQ A scores for FOC, (F(1, 191) = 11.6, p = 0.001, partial eta squared = 0.06) with medium effect. **Childbirth self-efficacy**Mean change difference: 41.40, p = .002. Effect size: .46.**Depressive symptoms**Mean change difference: 5.6 (p =.09). | Low |
| 25\*► | 18 | (J. Toohill, Callander, Gamble, Creedy, & Fenwick, 2017) | N = 184Women who returned 6 week postnatal questionnaire |  |  |  |  | Obstetric outcomesCost-effectiveness | **Obstetric outcomes**A larger proportion of women from the intervention group had a vaginal birth (66%) than women in the control group (58%). Women in the intervention group had 2.34 times the odds of having a vaginal birth than women in the control group (95% CI: 1.16–4.73, p = 0.014).**Cost-effectiveness**The mean ‘treatment’ cost for women receiving the intervention was AUS$72. The mean cost for health service use, excluding the cost of the intervention, was less in the intervention group (AUS$1193) than the control group (AUS$1236), however this difference was not significant (p = 0.78). |  |
| 26\*► | 18 | (Fenwick et al., 2015) | N = 184Women who returned 6 week postnatal questionnaire |  |  |  |  | CS preferenceEPDS15Satisfaction with birthDelivery outcomes | **CS preference**Less women in the intervention group compared to control said they would like a CS for next birth (16 vs 28, p = .04)**EPDS** Intervention: M = 6.2 (SD = 5) vs Control: M = 5.5 (SD = 4.7) (p = .3).**Satisfaction with birth/Delivery outcomes**No differences in assisted delivery, elective CS, emergency CS, induction of labour, narcotics in labour, epidural, preterm birth, breastfeeding at 6 weeks, satisfaction with birth mode. Women in the intervention arm were 8% less likely to have CS. |  |
| 27 | 18 | (Turkstra et al., 2017) |  |  |  |  |  | Health service useEQ-5D-3L20 | The numbers of appointments with healthcare providers during the study period were similar in the intervention and control groups. The cost of healthcare use (excluding birth and special care nursery) during the study period was statistically significantly higher in the intervention group.The probability that the intervention was more effective was 12%, while the probability that the intervention was less costly was 58%. |  |
|  |  | **Antenatal Education (k = 18 papers from 13 studies)** |
| **Paper no.** | **Study no.** | **Citation****Country****Design** | **Participant characteristics****Number in sample (n)** | **Measure used to determine FOC** | **Intervention** | **Control** | **Randomised?** | **Outcome measure** | **Outcome** | **Risk of bias** |
| 28 | 19 | (Bergström, Rudman, Waldenström, & Kieler, 2013)SwedenRCT | **Intervention (n = 39)**Age: M = 32 (SD = 5.4); Married/cohabiting: 100%; Secondary school education or less: 63% \*Planned pregnancy: 74%Partner with from FOC: 33%**Control (n = 44)**Age: M = 33 (SD = 5.1); Married or cohabiting: 98%; Secondary school education or less: 41%\*Planned pregnancy: 75%; Partner with FOC: 28%\*p<.05 | WDEQ-A1 ≥ 60 | **Antenatal education:** Used the psychoprophylaxis model where the focus was on the man’s role as a coach during labour. Massage, breathing, emotional support and relaxation were taught.**Intervention details:**Four 2-hour sessions | SMC | Yes – internet based system | Childbirth experience6 | Men with FOC and in intervention group had lower risk of experiencing the childbirth as frightening (adjusted OR 0.30; 95% CI 0.10–0.95) and feeling unprepared for the birth (adjusted OR 0.20; 95% CI 0.05–0.86) | Low  |
| 29\*▼ | 20 | (El-Malky, El-Homosy, Ashour, & Shehada, 2018)Quasi-experimental, pre-postEgypt | **Intervention (n = 50)**Age: M = 21.68 (SD = .33)50% living in urban area44% received higher education46% housewife**Control (n = 50)**Age: M = 21.68 (SD = .33)?54% living in urban area38% received higher education40% housewife | CAQ8 | **Antenatal education**Class 1: definition of normal labour, preparation for labour, prenatal exercise, overview of phases and stages of labour (90 minutes)Class 2: strategies to cope with fear through counselling and expression of feeling, breathing, relaxation (90 minutes)Class 3: Discussion of issues, practicing of relaxation techniques (90 minutes) | No | SMC | Psychological wellbeing24FOC8Obstetric outcomes | **Psychological wellbeing:** Pre-intervention: Intervention M = 31.46 (SD = 0.45)Control: M = 31.30 (SD = 0.47)Post-interventionIntervention: M = 63.50 (SD = 0.41)Control: M = 31.30 (SD = 0.47) p<.001Difference significant between groups and for T1 & T2 for intervention group**FOC**Pre-intervention: Intervention M = 48.88 (SD = 0.71)Control: M = 49.16 (SD = 0.59)Post-interventionIntervention: M = 25.50 (SD = 0.63)Control: M = 31.30 (SD = 0.47) p<.001Difference significant between groups and for T1 & T2 for intervention group**Obstetric outcomes** No significant differences between type of labour | High |
| 30\*▲ | 21 | (Gökçe İsbir, İnci, Önal, & Yıldız, 2016)TurkeyQuasi-experimental, pre-post | **Control (n = 46):** Age M = 25.3University graduates: 52.2%**Intervention (n = 44):**Age M = 26.8University graduates: 70.5% | WDEQ-A1 | **Antenatal education:** based on Dick Read’s “Natural Labor” and Lamaze’s “Psychoprophylaxis hypnobirthing”**Intervention details:**Groups of 5-8 women16 hours, made up of 4 sessions | No | SMC | FOC1Childbirth self-efficacy10 | **FOC**:T1: M = 66.8 (SD = 23.7)T2: M = 30.4 (SD = 18.07 p <.001**Childbirth self-efficacy:**T1: M = 224.1(54.5)T2: M = 297.9(SD = 17.8)P<.001 | Medium |
| 31\*▲ | 22 | (Karabulut, Coşkuner Potur, Doğan Merih, Cebeci Mutlu, & Demirci, 2016)TurkeyQuasi-experimental, pre-post | **Intervention (n = 69)**: Age M = 28.87 (SD = 4.54)60.9% at university. **Control (n = 123):** Age M = 25.73 (SD = 5.35)20.3% universityEducation p <.05 | WDEQ-A1 | **Education intervention:** 5 weekly sessions covering the following-1. Health in pregnancy
2. Birth and breathing exercises
3. Breastfeeding
4. Baby care
5. Postpartum period

**Intervention details:**2 hour long sessions, groups of 6-10 couples | SMC | No – self volunteered to take part | FOC1 | **Intervention group:** 28 weeksM = 53.25 (SD = 25.75)Median = 54 at 28 weeksPost interventionM = 33.72 (SD = 24.33)Median = 27P<.001**Control group** 28 weeksM = 44.32 (SD = 5.00)Median = 43 at 28 weeksPost interventionM = 41.97 (SD = 24.64)Median = 41 post interventionP = .02 | Medium |
| 32 | 23 | (Khedr & Eldeen, 2017)EgyptPre-post  | **Video group (n = 32)**Age: 46.9% aged 24-2946.9% completed secondary school or university50% employed**Lecture group (n = 32)**Age: 50.0% aged 24-2950.0% completed secondary school or university37.5% employedP<.05 | ‘Feelings of Fear and Security Associated with Pregnancy and Childbirth’7 | **Healthy instructions –** delivered via video or lecture. **Video**: groups of 4-5 women, 30-minute video about normal delivery (definition, advantages, reduction of labour pain, preparation for delivery)**Lecture** groups of 6-8 women who listened to a 30-minute lecture about normal delivery | None | n/a | Preference for mode of deliveryFOC7 | **Preference for mode of delivery**Pre-intervention:50% of women in **video** group wanted a CS; compared to 56.3% of women in **lecture** group (p>.05)Post intervention. 12.5% of women in **video** group wanted a CS compared to 34.4% (p =.04).**FOC**Pre intervention: 27% of women had low fear; 7% had moderate fear; 30% had high fear.Post intervention: 47% had low fear; 6% moderate fear; 11% high fearP<.001 | Medium |
| 33\*▼ | 24 | (Kizilirmak & Başer, 2016)TurkeyQuasi-experimental, pre-post | **Intervention group (n = 50):** Age M = 22.2 (SD = 3.9)38% graduated high school. **Control group (n = 49)** Age M = 22.5 (SD = 3.7) 44.9% graduated high school | WDEQ-A1 ≥ 85 | **Education intervention:** two sessions:1. Labour: signs of labour, what to do, going to hospital
2. Delivery room, breathing, midwifery care, episiotomy
 | SMC | No – women admitted March and May controls, October and December were intervention | FOC1 | **Intervention:** T1: M = 61.1T2: M = 42P <.00160% felt confident during first stage of labour**Control:**Means increased by 2 points42.3% felt confident during first stage of labour | Medium |
| 34 | 25 | (Kulkarni, Wright, & Kingdom, 2014)CanadaNon -experimental | Nulliparous, singleton uncomplicated pregnancy. Majority (n = 40) born in Canada and were Caucasian. Age M = 32.89, 23.3% postgraduate degree, 17.8% university degreeN = 73 | None  | **E-intervention:** educational website. Further information available in paper’s appendix (systematic review author does not have access) | n/a | n/a | FOC11 | There was no significant change from baseline to final survey in the level of fear regarding vaginal delivery (P = 0.19). Thirteen women changed from being either “neutral,” a “little fearful,” or “not fearful at all” regarding CS in the baseline survey to being “fearful” or “very fearful” (P = 0.05). Participants had a significantly higher level of fear regarding CS compared to vaginal delivery in both the baseline survey (P = 0.03) and the final survey (P = 0.04).  | Medium |
| 35 | 26 | (Ozdemir, Cilingir, Ilhan, Yildiz, & Ohanoglu, 2018)Turkey Block RCT | **Intervention (n = 50)**Age M = 29.62 (SD = 4.40)38% college education92% married54% housewife**Control (n = 50)**Age M = 30.12 (SD = 5.59)34% college education98% married64% housewifep>.05 | Request for CS | **Systematic birth preparation program group –** women received an education program which consisted of four 2-h sections. The content of the program included prenatal, postnatal, and neonatal care. Participants were informed about physical, mental changes, and possible emergencies in pregnancy. Nutritional support was provided. Physical exercise program supported by yoga and pilates was applied. Breathing techniques, hydrotherapy, aromatherapy, and reflexology were taught to control birth pain without medication.  | SMC | Yes – block randomisation | Quality of life24Depression15Birth outcomes | **Quality of life**Significant differences between groups in terms of physical, psychological and environmental quality of life.**Depression**No significant differences between groups**Birth outcomes**78% of women in intervention compared to 56% in control had a vaginal delivery (p = .03)8% of women in intervention group requested a CS compared to 14% in control group (p = ,02) | Low |
| 36\*▲ | 27 | (Serçekuş & Başkale, 2016)TurkeyQuasi-experimental, pre-post | **Intervention:**WomenAge M = 28.8 (SD = 2.2)83.9% high school, 71% employedMenAge M = 31.8 (SD = 4.3)83.9% university. N = 31 couples**Control**:WomenAge M = 27.7 (SD = 4.5)University 68.881.2% employed. MenAge M = 29.9 (SD = 3.7)university 75%N = 32 couples | WDEQ-A1 | **Educational groups:** Content: nutrition, physiology and psychological changes and how to cope, mechanisms of labour, discussion of feelings of birth, dealing with FOC, coping with pain, physical and emotional postpartum changing, interaction, breastfeeding, new-born care**Intervention details:** groups of 4-6 couples, once a week (120 minutes) 8 weeks. | SMC | No  | FOC1Childbirth self efficacy10Attachment12 | **FOC****Intervention:** T1: M = 60.7 (SD = 25.1), T2: M = 37.9 (SD = 23.4). **Control**: T1:M = 54 (SD = 18.9), T2:M = 59.9 (SD = 19.1). Significant difference between post-test scores for the groups (p <.0001)**Childbirth self-efficacy****Intervention:**T1: M = 219.3(SD = 25.1)T2: M = 257.6(SD = 44.9).**Control:**T1: M = 222.7(SD = 37.4)T2: M = 224.1(SD=37.8)Significant difference between groups at time 2 (p = .002)**Attachment**No differences between groups | Medium |
| 37\*▼ | 28 | (Taheri, Mazaheri, Khorsandi, Hassanzadeh, & Amiri, 2014)IranQuasi-experimental, pre-post | **Intervention (n = 65):**Age M = 26.72 (SD = 4.61)**Control (n = 65)**Age M = 27.72 (SD = 5.81) | Questionnaire “delivery fear” 14 questions using Likert score.5 | **Educational intervention:** Educational content was developed based on strategies of self-efficacy increase (success in performance, replace experience, verbal persuasion and physiological or emotional states).**Intervention details:** three 60-90 minute sessions, 8-10 people per group | No intervention | Yes- stratified random sampling | FOC5Childbirth self-efficacy10 | **FOC****Intervention:**T1: M = 79.2 (SD = 12.1), T2: M = 48.9 (SD = 5.8) p <.001 **Control:** T1: M = 78.6 (SD = 8.6)T2: M = 78.8 (SD = 8.9) P > .05Significant difference between both groups after intervention p <.001**Childbirth self-efficacy:****Intervention:**T1: M = 12.8 (SD = 5.4)T2: M = 29.5 (SD =3.8)P<.001**Control:** T1: M = 12.9 (SD = 3.8)T2: M = 12.9 (SD = 3.7)Significant difference between both groups after intervention p <.001 | Low |
| 38 | 29 | (H. Rouhe et al., 2013)FinlandRCT | **Intervention:** Age M = 29.3 (SD = 4.6) 38.3% upper white collar workers40.6% university education97.2% cohabiting. **Control** Age M = 29.4 (SD = 4.8)37.1% upper white collar workers40.1% university education91% married cohabitingN = 330 | WDEQ-A1 ≥ 97 | **Psychoeducation and relaxation intervention:** led by a psychologist, every session began with relaxation with mindfulness exercise. Each session had a different focused topic:1. Information about fear and anxiety
2. Information about FOC
3. Hospital routines, birth process, pain relief
4. Becoming a family
5. Becoming a mother, recognising signs of postnatal depression
6. Completing preparation for delivery and birth plan

**Intervention details:** each session was 90 minutes long. Six sessions before birth, and one 2-3 months after birth | Yes – in a proportion of 1:2 | SMC and advised to speak to maternity unit about their FOC:-76 women seen at outpatient maternity clinics for FOC. Here they met an obstetrician M = 1.7 times, and/or a midwife M = 1.3 times. -30 control women attended an advanced preparation class led by a specialised midwife 2–6 times (M = 2.5 times) | Birth experience6Birth modeDelivery satisfaction13 | **Birth experience**Significant difference between the groups**Intervention:** M = 63.0 (SD = 20) **Control:** M = 73.7 (SD =29) F(199) = 1.1, p = 0.016 Cohen d = 0.35, small effect size)**Birth mode:** Mothers in intervention group more likely to have spontaneous vaginal delivery**Delivery satisfaction**Those in intervention group were more likely to have a positive delivery experience (p=.04)**Adherence**131 women were randomised to the intervention, only 90 attended. 76% of women attended all 7 sessions on offer (Rouhe et al 2015b) | Low |
| 39 | 29 | (Salmela-Aro et al., 2012) |  |  |  |  |  | Childbirth preparedness14 | **Childbirth preparedness:** **Intervention:**Baseline: M = 3.67 (SD = 0.90)1 month before birth: M = 4.36, SD = 0.97;**Control:**Baseline: M = 3.70 (SD = 0.92)1 month before birth M = 4.18, (SD = 0.97)The results showed that intervention increased a mother’s preparedness which, in turn, predicted an increase in positive parenting after childbirth among those in the intervention group. |  |
| 40\*▲ | 29 | (Hanna Rouhe, Salmela-Aro, Toivanen, Tokola, Halmesmäki, Ryding, et al., 2015) |  |  |  |  |  | Birth modeDelivery satisfactionWDEQ-BDepressive symtoms15Post-traumatic stress symptoms16 | **Birth mode:** Women who attended group therapy had spontaneous vaginal birth signiﬁcantly more often than did specially treated control women [59 (65.6%) versus 50 (47.2%), P = 0.014]. CS by maternal request (FOC) was performed for 11 women in the intervention (12.2%) versus 24 women in the control group (22.6%) (P = 0.064). **Delivery satisfaction:** More women in the intervention group had a very positive experience (DSS in the highest quartile) 36.1%, than women in the control group 22.8% (P = 0.04). **WDEQ-B:** There was a significant difference between groups. Intervention M = 63 (SD = 32) Control M = 73.7 (SD = 29) indicating childbirth experience less fearful in intervention group.**Postnatal adjustment:** There were significantly less severe postnatal depressive symptoms in the intervention group (EPDS M = 6.4 (SD = 5.4) compared to the control group (M = 8.0, SD= 5.9; p = 0.04, Cohen d = 0.28, small effect size).No differences in terms of postnatal traumatic stress symptoms.  |  |
| 41 | 29 | (Hanna Rouhe, Salmela-Aro, Toivanen, Tokola, Halmesmäki, & Saisto, 2015) |  |  |  |  |  | Satisfaction with life after birth17Service useCost analysis | **Satisfaction with life after birth:** No significant differences were found.**Service use:** **Intervention group:** had a total of 526 visits to the intervention (M = 5.9 visits per woman), 122 visits to outpatient maternity clinics (M = 0.9 visits per woman) and 94 visits to the emergency maternity clinic (M = 0.7 per woman) **Control group:** had 276 visits to outpatient maternity clinic (M = 1.2 per woman) and 150 emergency visits (M = 0.7 per woman). **Cost analysis:**Biggest differences in costs came from the intervention, which cost €34716 in total. However, when comparing the total cost per woman across the perinatal period the differences were minimal:**Intervention: €**3.786 per woman**Control: €**3,830 per woman |  |
| 42 | 29 | (Airo (Toivanen) et al., 2018) |  |  |  |  |  | PANAS18FOC19Personal Goals | **PANAS:** There was a significant decrease in negative emotions from the first session (Wald = 35.43, df = 6, p <.001). The treatment was the most effective regarding the emotions ‘scared’ (d = 0.84), ‘nervous’ (d = 0.66), and ‘jittery’ (d = 0.53).There was an increase in positive emotion after women gave birth (Wald = 64.41, df = 6, p <.001).**FOC:**  Pre: M = 7.60 (SD = 1.72)Post: M = 4.56 (SD = 2.42) Wald = 230.43, df = 6, p < 0.001)**Personal goals:**The achievement of goals about the mother’s themselves x2(1) = 11.172, p < 0.001, and childbirth x2(1) = 20.045, p <.001 changed significantly during the intervention.  |  |
| 43 | 29 | (Ryding et al., 2018) | Partners of women who participated in RCT.**Intervention (n = 93)**Age M = 32.7 (SD = 5.4); 33.3% university degree**Control (n = 157)**Age M = 31.1 (SD = 5.0); 45.2% university education | WDEQ-B6 ≥ 47 |  |  |  | Partners FOC1, symptoms of depression (EPDS)15 and PTSD (TES)16 | **Intervention:****WDEQ-A**M = 34.2 (SD – 18.5)**EPDS**M = 3.5 (SD = 3.0)**TES**M = 18.2 (SD = 1.8)**Control****WDEQ-A**M = 35.2 (SD – 18.8)**EPDS**M = 3.9 (SD = 3.9)**TES**M = 19.5 (SD = 3.8) |  |
| 44\*▲ | 30 | (Haapio, Kaunonen, Arffman, & Åstedt-Kurki, 2017)FinlandRCT | **Intervention:**48% aged 23-29; 57% married; 47% university education.N = 338**Control:** 47% aged 23-29, 58% cohabiting; 43% university degreeN = 321 | Data were collected using two subscales (objects of fears and manifestations of fears) from the questionnaire ‘Feelings of Fear and Security Associated with Pregnancy and Childbirth’7 | **Midwife-led intervention:**Consisted of: information leaflet, a 2 hour childbirth class in the labour room with information about pain relief, push positions and delivery instruments. | SMC | Yes | FOC7Wish to have a caesarean | **FOC**The women’s everyday lives were less affected by fear in the intervention group in comparison with the control group (31% vs. 41%). The situation in the intervention group also improved more often (14% vs. 8%) and worsened less often (12% vs. 18%) than in the control group. The difference between the groups was signiﬁcant [OR 0.64, 95% CL 0.44–0.94].The intervention group had fewer moderate and severe childbirth-related fears than the control group (80% vs. 85%). Especially, severe childbirth-related fears were fewer in the intervention group compared to the control group (3% vs. 10%). Ordinal logistic regression model showed the differences were statistically signiﬁcant [OR 0.58, 95% CL 0.38–0.88].**Wish to have caesarean**No impact of intervention on wish to have CS (Intervention: 3% vs Control: 3.9%)  | Low |
| 45\*▼ | 31 | (Masoumi et al., 2016)IranRCT | **Intervention (n = 80):**Age M = 32.9 (SD = 7.9, range from 25 to 30 years) **Control (n = 80):**Age M = 32.9 (SD = 7.9, range from 25 to 30 years). | Chilbirth Attitude Questionnaire (CAQ)8  | **Midwife led training preparation:** classes on nutrition, exercise, labour, delivery, pain relief.**Intervention details:** 10 – 15 people per group. Eight 2-hour sessions.  | SMC | Yes – computer system | FOC8Request for CS | **Intervention:**T1: M = 53 (SD = 19.3) T2: M = 51.7 (SD = 22.4 p =.24. **Control:**T1: M = 49.1, (SD = 21; T2:M = 58.7 (SD = 21.7) P = .01There was an increase in the percentage of women with high fear from 43% to 56% in the control group.**Request for CS**There was a drop in women requesting CS in the intervention group, from 80% to 9.3%. It increased from 65.3 to 78.7% in control group (P<.001). | Low  |
|  |  | **Enhanced midwifery care (k = 6 papers from 3 studies)** |
| **Paper No.** | **Study No.** | **Citation****Country****Design** | **Participant characteristics****Number in sample (n)** | **Measure used to determine FOC** | **Intervention** | **Control** | **Randomised?** | **Outcome measure** | **Outcome** | **Risk of bias** |
| 46 | 32 | (Hildingsson, Rubertsson, Karlström, & Haines, 2018)SwedenFeasibility  | 60% aged over 30100% cohabiting with partner80% university educationN = 10 | FOBS3≥60 | **Caseload continuity midwifery model of care -** Women who consented to participate followed the standard visiting schedule for antenatal care. In addition, they were offered one extra visit in gestational week 25 and they were invited to join the psychoprophylaxis course free of charge. The women were assigned a named midwife whom they met during most antenatal visits. The midwife had a co-midwife that shared the on-call shifts, and the women had at least one visit to the co-midwife and both midwives were present at the standardized appointment in gestational week 36 when a summary of the pregnancy and a plan for the birth and the postpartum period, based on the women’s needs, were performed. The midwives were told by the research team to focus a lot on women’s childbirth fear during all visits and to discuss women’s feelings, causes of fear and coping strategies. | None  | n/a  | FOCSatisfaction with treatmentObstetric outcomes | **FOC**Reduced over time from 68.60 (SD = 8.50) at baselined compared to 35.33 (SD = 23.30) 2 months after birth70% felt their FOC alleviated**Satisfaction**60% of women were very satisfied with their treatment, 40% were satisfied80% were overall very satisfied with intrapartum care**Obstetric outcomes**80% had a vaginal birth | High  |
| 47\*▼ | 32 | (Hildingsson, Karlström, Rubertsson, & Haines, 2019)SwedenPilot study | 58.6% women aged over 3298.6% living with partner61.4% university educationN = 70 | FOBS3  | **Midwife continuity of care** women with fear of birth, when possible, were offered continuity of care during labour and birth from the counselling midwife. | None | N/A | AdherenceService useAttitudesPerceived effect of treatment | **Adherence**34.3% had known midwife at the birth,**Service use**Women who had a known midwife during birth had more counselling visits (M = 3.20; SD = 1.97) compared to women without a known midwife (M = 2.06; SD = 1.10)**Attitudes**87.5% who had a known midwife at birth compared to 60.0% thought having a known midwife at the birth was important/very important95.8% of women who had a known midwife compared to 71.7% were satisfied or very satisfied with midwifery counselling**Perceived effect of treatment**29.2% of women who had a known midwife compared to 4.5% stated that their childbirth fear disappeared | Medium |
| 48\*▲ | 32 | (Hildingsson, Rubertsson, Karlström, & Haines, 2019) |  |  |  |  |  | Birth outcomesBirth experience | **Birth outcomes**No difference in pain relief used but women who had a known midwife reported a more positive pain experience (OR 1.5, 95% CI 1.09–2.13, Cohens d 0.72).Spontaneous labour (known midwife = 45.8%; no known midwife: 56.5%; OR = 1.35; 95CI: 0.44-4.13)Emergency CS (known midwife = 16.7%; no known midwife: 26.1%; OR = 0.47; 95CI: 0.13-1.75)**Birth experience**More women with known midwife rated their birth experience as positive/very positive (83.3%) compared to those without a known midwife (52.2%)OR = 4.2 (95CI: 1.19-14.99) |  |
| 49 | 33 | (Lyberg & Severinsson, 2010a)NorwayQualitative, non-experimental | Women who received midwifery care for FOCAll aged between 25-37; 7 previous bad childbirth experience | Not clear | The intervention involved a team of four experienced midwives established to meet the needs of pregnant women. The goal of the approach was to ensure continuity, provide a feeling of security, illuminate individual needs and offer support throughout the pregnancy, childbirth and the perinatal period.  | n/a | No | Qualitative analysis of FOC and experience of midwifery care | Women described their FOC, the reasons for the fear and being prepared for childbirth. They also described how being confirmed and treated with dignity by the midwife during pregnancy, childbirth and after the birth was a way to survive the feeling of being trapped and fear of the unpredictable birth. The encounter(s) with the team midwife made women feel respected and dignified. They were very satisfied with the care provided and the fact that the midwives on the team were always accessible by phone. They praised the team members for this, for their ability to create spiritual and emotional experiences of the situation and for being present and available to meet their needs before, during and after the birth. The women considered the team midwives highly professional due totheir excellent collaboration within the team, their presence and their long experience of maternal care. They reported that the deep relationship with the midwife increased their self-esteem and personal development..  | Medium |
| 50 | 33 | (Lyberg & Severinsson, 2010b) |  |  |  |  |  | Qualitative analysis of midwives supervisory styles and leadership role as experienced by pregnant women and new mothers in the context of a FOC | The midwives supervisory style was stated to create trusting and caring relationships with the women, by understanding her individual situation and being familiar with her needs and wishes. Midwives were described as being sensitive to individual needs and wishes, acting in accordance with individual needs and providing hope and confirmation.Midwives were also seen as demonstrating a problem-solving capacity through being understanding and explaining the reasons for a FOC Midwives also showed a willingness, preparedness and courage to support women. The midwives leadership was described as competent, by assuming the responsibility for managing the process, creating a conducive work climate and empowering women. |  |
| 51 | 34 | (Sydsjo et al., 2014)SwedenQuasi-experimental | **Intervention (n = 14)**Age: M = 31.6 (SD = 5.7); 90.9% married cohabiting; 72.7% employedWomen had FOC**Control (n = 28)**Age: M = 29.2 (SD = 3.4); 100% married cohabiting; 84.6% permanently employed. Women did not have FOC | DSM-IV4 | **Visiting delivery suite –** 1. The woman was invited to the delivery ward for a first meeting with the selected midwife. 2. At the first meeting the delivery ward was presented and the delivery rooms were shown. All equipment was explained and tested if this was asked for. An external and sometimes a vaginal examination were offered as well as a CTG (cardiotocogram). The examinations and the foetal surveillance were offered in order to expose the women to these routines. 3. A second visit with the selected midwife at the delivery ward was offered if the woman wished. 4. The woman was encouraged to contact the midwife by telephone or schedule additional visits to the delivery ward for further support or information if needed. 5. If a birth plan /contract had not been established the midwife and the woman wrote an appropriate document. 6. Information was given to each woman that the two assigned midwives would do their utmost to attend and assist the woman’s childbirth; 7. Individual support was continuously offered to the two assigned midwives by the obstetrician in charge at the psychosocial unit | SMC | No – if women didn’t have FOC they did not receive an intervention | Obstetric outcomes | **Duration of labour for multiparous women**: Intervention M = 233.0 (SD=123.1); Control: M = 366.9 (SD = 157.0), p = .047 (no difference for primiparous women)**Emergency CS:** Intervention 27.3%; Control: 3.8% p =.07**High level of anxiety suffered during childbirth**: Intervention 80%; Control: 19.2% p =.001No significant differences for pain relief use (p = .203-.540), effectiveness of pain relief (p =1); experiences of childbirth (p = 1), outcome of childbirth compared to expectations (p = .21) | Medium |
|  |  | **Alternative/other types of interventions (k = 13 papers from 12 studies)** |
| **Paper no.** | **Study no.** | **Citation****Country****Design** | **Participant characteristics****Number in sample (n)** | **Measure used to determine FOC** | **Intervention** | **Control** | **Randomised?** | **Outcome measure** | **Outcome** | **Risk of bias** |
| 52 | 35 | (Baleghi, Akerdi, & Pasha, 2016)IranQuasi-experimental, pre-post | Low risk pregnant women. **Intervention group (n= 57):** Age M = 25.8**Control group (n = 55):** Age M = 26.4N=112 | "Standardised questionnaire with 20 questions about the causes of childbirth fear (in the area of pain, liability, injury, prematurity)" answered on a 5-point Likert scale.  | **Relaxation classes:** Techniques taught for relaxation during childbirth. **Session details:**8 sessions, 90 minutes | Routine care | No – categorisation not explained | FOC Questionnaire (Lower scores indicate less fear)Delivery outcomes | **FOC****Control group:**T1: M = 58.5, SD = 14.2 T2: M = 58.7, SD = 14.9 **Intervention group:** T1: M = 48.5 SD = 3.9 T2: M = 40.5, SD = 12.4 (p=0.000). Significant difference between both groups at T2: (*p* = 0.000)**Delivery outcomes**Intervention:49% vaginal delivery**Control:**32.7% vaginal deliveryP = .033 | Medium |
| 53\*▲ | 36 | (Bulez, Ceber Turfan, & Sogukpinar, 2019)TurkeyQuasi-experimental, pre-post | **Intervention (n = 30)**Age: M = 25.74 (SD = 5.16, Range: 17-39); 20.87 weeks gestation; 35% secondary education; 35.5% previous birth**Control (n = 30)**Age: M = 28.7 (SD = 5.42, Range: 21-37); 24.1 weeks gestation; 20% secondary school graduate; 70% given birth previously | WDEQ-A1 | **Hypnobirthing education -** given one hour a week totalling 4 hours in 4 weeks.Hypnobirthing focuses on teaching self-hypnosis,breathing slowly, letting oneself go and the art ofenjoying labour calmly and serenely, discovering themethod of delivery without stress, forming a positiveexpectation, trust and faith in the spontaneity oflabour. | Antenatal education | No | FOC1 | **Intervention:**Pre: M = 79.47 (SD = 11.58)Post: M = 67.10 (SD = 11.00)t =5.21, p <.001.**Control**Pre: M = 84.60 (SD = 16.71) | High |
| 54 | 37 | (Fisher, Hauck, Bayes, & Byrne, 2012)USASingle arm pilot – qualitative data  | Nulliparous women, singleton pregnancy.Age: M = 30.189% married/cohabiting 56% had undergraduate degreeN = 18 | WDEQ-A1 | **Mindfulness Intervention:** Intergration of mindfulness and birth education. Targets self-efficacy, communication and decision making**Intervention details:**8 sessions2.5 hours long | No | N/A | Qualitative data | Women felt empowered, and a sense of community. Women reported feelings of awakening existing potential, being an informed active participant in the birth process, ability to stay calm and work as a team, challenge of applying mindfulness beyond birth; being in a community of likeminded parents. | Medium |
| 55 | 37 | (Byrne, Hauck, Fisher, Bayes, & Schutze, 2014) |  |  |  |  |  | Childbirth fear1Childbirth self- efficacy8Adherence | **Childbirth fear**T1: M = 61.42T2: M = 38.93P <.001**Childbirth self-efficacy:**T1: M = 171.69T2:M = 224.54P<.001**Adherence:** all 18 participants completed programme, but meditation homework adherence was low (average 3.6 sessions per week). |  |
| 56 | 38 | (Hunter et al., 2011)USAQuasi-experimental | Actively involved in military. 20 pregnant women and 10 partners.**Intervention (N = 20)**15 female; 70% white; 25% black, 90% married or cohabiting; 35% completed some college; **Control (N = 10)**7 females; 50% black; 33% Asian; 90% married or cohabiting; 44% completed some college | WDEQ-A1 | **Mantram repetition intervention:**Participants were given a mantram handbook, which was a list of common mantrams and were asked to choose one. For homework assignments participants were taught to a) mentally repeat the chosen mantram and b) ignore any other thoughts that intrude.  | Yes – table of random numbers | **Control group:** focus on healthy living and responsible decision making | FOC1Adherence to intervention | **FOC**No means reported. There was a decrease in fear in the intervention group: Baseline to 6 weeks postdelivery (Z = -1.78, p = .07); this became significant when missing values were replaced (z = -2.03, p .05)**Adherence:**Mothers reported using mantram 5 days per week, five sessions per day. Median practising was 3.5 mantram sessions per day. | Low |
| 57\*▼ | 39 | (Guder, Yalvac, & Vural, 2018)CyprusQuasi-experimental, pre-post | **Intervention (n = 54)**Age: M = 28.05 (SD = 2.91)61.1% undergraduate degree100% married**Control (n = 54)**Age: M = 28.00 (SD = 3.69)59.3% undergraduate degree100% marriedp>.05 | WDEQ-A1 | **Pilates assisted childbirth preparation training**8 weeks longDuring the first phase of the study, this program was executed twice a week for 2 h each day comprising 1 h of theoretical education, 45 min of pregnancy Pilates session, and 15 min ofbreathing exercises in the first 4 weeks. The final 4 weeks of this training program consisted of only pregnancy Pilates and breathing exercises.. | SMC | No | FOC1Obstetric outcomes | **FOC**Pre-trainingIntervention: M = 57.44 (SD = 23.24)40.7% moderate FOC25.9% clinical FOCControl: M = 57.35 (SD = 19.80)42.6% moderate FOC31.5% clinical FOCp>.05Post-trainingIntervention: M = 33.88 (SD = 22.34)29.6% moderate FOC7.4% clinical FOCControl: M = 60.72 (SD = 21.21)31.5% moderate FOC48.1% clinical FOCp<.001**Obstetric outcomes**Out of the women who had given birth via caesarean, 8.1% of women in intervention had planned a CS compared to 25.5% p=.008 | Medium |
| 58\*▲ | 40 | (Guszkowska, 2014)PolandQuasi-experimental, pre-post | Age: M = 29.0580.7% married100% higher educationN = 109N = 62 in intervention group; 47 in control. Demographics not reported for groups separately.  | The Fear of Childbirth Scale. This scale has 14 items addressing feelings relating to childbirth, both fears (7 items, e.g. I am worried that something bad will happen to me or my baby during childbirth) and their absence (7 items, e.g. I feel safe when I imagine the childbirth). A four-point response format was used (from 1 = definitely disagree to 4 = definitely agree). | **Exercise intervention:** Yoga, pilates, body ball, relaxation and breathing exercises**Intervention details:** Eight 50-minute long sessions | SMC | No -participants were asked if they wanted to do the exercise classes, those that said no were control | FOCLocus of control for labour pain | **FOC****Intervention:**T1: M = 32.89T2: M = 31.06**Control:**T1: M = 30.57T2: M = 30.82**Locus of labour pain control internal** **Intervention**: M = 11.94**Control**: M = 12.63 (p >.05) | Medium |
| 59 | 41 | (Narita, Shinohara, & Kodama, 2018)JapanQuasi-experimental | **Intervention (n = 18)**Age: M = 32.4 (SD = 3.8); 65% nulliparous; WDEQ M = 79.5 (SD = 8.5); PSQI: m = 5.2 (sd = 2.9); Fatigue VAS M = 45 (SD = 21.4)**Control (n = 22)**Age M = 32.7 (SD = 5); WDEQ M = 82 (sd = 14.1); PSQI M = 5.3 (SD = 2.6); Fatigue VAS M = 46.4 (SD = 19). | WDEQ-A1 ≥ 66 | **Heart rate variability (HRV) Biofeedback** - Women who provided written consent for HRV biofeedback were given a portable HRV biofeedback device which records real-time heart rate information via the finger. The pregnant women first practiced HRV biofeedback during outpatient consultation on the day of recruitment. They were given the devices after confirming that they could use them easily at home. Each participant was told to practice HRV biofeedback consistently every night before sleeping for 3–4 weeks and to record how well they practiced the method on a recording form.  | SMC | No – women didn’t agree to take part in HRV biofeedback | FOC (WDEQ)1 Pittsburgh Sleep Quality Index22 | There were significant time-dependent (from 32-34 weeks to 36-67 weeks) variations in the W-DEQ (p < 0.001) and PSQI scores (p = 0.012) and a significant time × group interaction in the W-DEQ scores (p = 0.002). Time-dependent reductions in the W-DEQ scores were significant only in the biofeedback group (paired t-test, p < 0.001), whereas time-dependent increases in the PSQI scores were significant only in the control group (p < 0.001). | Medium |
| 60 | 42 | (Navaee & Abedian, 2015)IranQuasi-experimental | Age M = 24 (SD = 4)51.4% high school education58% housewivesN = 35 role playN = 32 lecture group | Harman Childbirth AttitudeQuestionnaire (CAQ)8  | **Role play:** around advantages and disadvantages of vaginal delivery. Two facilitators played three scenarios, participants would also get involved in role play. 90 minute session. | **Lecture group:** 90 minute Power-point session | No – cluster sampling | FOC8 | **Lecture group**: T1: M = 39, SD = 7T2: M = 36.3, SD = 8p = .047**Role play group:** T1: M = 35.6 (SD = 8.5) T2: M = 30, (SD = 8.6)p = .001. | Medium |
| 61\*▲ | 43 | (Pour-Edalati, Moghadam, Shahesmaeili, & Salehi-Nejad, 2019)IranPre-post test  | **Intervention**Age: M = 30.55 (SD = 3.37)55% housewives40% Bachelor’s degreeN = 20**Control**Age: M = 30.90 (SD = 3.71)47.6% housewives47.6% Bachelor’s degreeN = 21 | CAQ8 | **Mindfulness based stress reduction**8 90 minute sessions. Each session focused on different topics: intuitive guidance, facing obstacles, breathing mindfulness, staying in the present moment, permission to attend, thoughts are not facts, effective self-care, acceptance and change.  | Not clear | No | FOC8 | There was a significant reduction in FOC scores in the intervention group (Pre: M = 37.85; SD = 5.59, Post: M = 36.35; SD = 5.40, p <.001)No difference in control arm (p = .46)  | Medium |
| 62 | 44 | (Sezen & Ünsalver, 2019)Turkey Quasi-experimental, pre-post | **Intervention (n = 15)**Age M = 28 (SD = 4.9)73.3% completed university53.3% house-wife**Control (n = 15)**Age M = 26.3 (SD = 4.8)73.3% completed university53.3% housewifeIntervention group were older. | WDEQ-A1 | **Art therapy –** carried out in groups. Six sessions lasting 130 minutes each.All sessions involved listening to music and singing together. Sessions covered mask making, drawing, mandala-making, puppet making, taking photographs and collage making. At the beginning of each session there was 40 minutes of psychoeducational information provided by therapist.  | SMC | No | FOC1Anxiety25Depression26  | **FOC**Pre interventionIntervention Median = 51Control median = 56Post-interventionIntervention median = 28Control median = 55P<.001**Anxiety**Pre interventionIntervention Median = 24Control median = 22Post-interventionIntervention median = 8Control median = 23P<.001**Depression**Pre interventionIntervention Median = 23Control median = 23Post-interventionIntervention median = 7Control median = 21P<.001 | Medium |
| 63\*► | 45 | (Terhi Saisto, Toivanen, Salmela-Aro, & Halmesmäki, 2006)FinlandQuasi-experimental | **Intervention:**Age M = 31.49 (SD 4.8 years93% permanent relationship76% were working 40% had a university degree. N = 102**Control:**Age M = 31.1 (SD = 4.8).N = 85 | Referred for consultation because of fear of vaginal delivery and request for a cesarean. Women in experience group had a M = 6.9 (SD = 2.0) on Areskog questionnaire2. Control M = 6.0 (SD = 1.6).  | **Group psychodynamic therapy:** five weekly themes –1. Effects of relaxation
2. Stages of delivery
3. Pain relief
4. Parenthood
5. Wishes and written notes addressed to midwife

**Intervention details:** 5 weekly sessions, 120 minutes long. | **Conventional treatment:** met an obstetrician twice for 20-40 minutes to discuss fear and mode of delivery | No – asked if they wanted to take part in group sessions. | Birth modeWomen’s views of the intervention | **Birth mode:** Caesareans due to FOC were performed on 13 subjects (12.7%) in the experimental compared to 19 in the comparison group (22.4%) (Fisher’s exact test p = 0.040.**Women’s views of intervention:** Women rated intervention as M = 8.5 in terms of benefit to themselves (0 = group had no benefit, 10 = group had maximal benefit) | Medium |
| 64 | 46 | (Wahlbeck, Kvist, & Landgren, 2018) SwedenQualitative data from an RCT | Age: M = 32 (range = 27-41)11/19 completed high upper secondary school10/19 were nulliparousN = 19  | WDEQ-A1 | **Art therapy + counselling -**  During pregnancy, participants had received five sessions of art therapy, either one-to-one or in a group setting as an adjunct to usual care (counselling). | Counselling | Yes (but this study only looks at women who received art therapy) | Qualitative | **Gaining hope and self-confidence:**  women described shedding their fear during art therapy.The women experienced painting as an important tool to promote inner healing processes in the treatment of their FOC.Art therapy was perceived to take up a lot of the women’s time in everyday life but also to give a time frame in which to identify and process the fear.Painting and drawing made it possible for the women to open up their deeply hidden feelings, related to having suffered a traumatic birth or other trauma connected to the fear of childbirth. The women expressed that it made them able to connect with the fear and to release it. | Low |
|  |  | **Interventions during labour (k = 2)** |
| **Paper no.** | **Study no.** | **Citation****Country****Design** | **Participant characteristics****Number in sample (n)** | **Measure used to determine FOC** | **Intervention** | **Control** | **Randomised?** | **Outcome measure** | **Outcome** | **Risk of bias** |
| 66 | 47 | (Irmak Vural & Aslan, 2019)TurkeyRCT | **Intervention 1 - EFT-G (n = 35)**: Age M = 27.29 (SD = 3.97); 62.9% university educated;91.4% first time pregnancy. **Intervention 2 - BA-G (n = 35):** Age M = 27.51 (SD =4.65); 68.6% university educated;88.6% first pregnancy**Control (n = 35)**Age M = 27.36 (SD = 4.19); 78% university educated;92% first pregnancy. No differences between groups | WDEQ-A1 | **Emotional Freedom Technique (EFT):** is a psychophysiological intervention that combines elements of cognitive behavioral therapy (CBT), exposure therapy and somatic stimulation using acupressure points (i.e. tapping).Three EFT sessions were performed when the woman had no pain during 0-3cm dilation; 4-7cm dilation and 8-10cm dilation. A total of nine EFT sessions were conducted with each pregnant woman**.** **Breathing awareness** This group was exposed to abdominal breathing awareness. The researcher explained this intervention by demonstrating it for 10 min in the pregnant women's room in the latent (0-3cm dilation) phase of labour. The women were asked to lie in a comfortable position and breathe in and out calmly and smoothly at the beginning of each contraction.  | SMC | Yes – women selected a number from a bowl, and an online system determined allocation | Childbirth experience6Pain and distress during labour | **Childbirth experience**EFT M = 59.17 (SD = 18.52); BA: M = 59.57 (SD = 18.76)Control: M = 71.74 (SD = 13.74) p<.001 (lower score = better birth experience).**Pain and distress****0-3cm cervical dilation**EFT: M = 1.91 (SD = 1.52)BA: M = 2.80 (SD = 1.81) P = .055**4-7cm cervical dilation**EFT: M = 2.51 (SD = 1.40)BA: M = 4.00 (SD = 1.48), p <.001**8-10cm cervical dilation**EFT: M = 3.86 (SD = 1.44)BA: M = 5.94 (SD = 1.78)P <.001 | Low |
| 66 | 48 | (Phumdoung, Youngvanichsate, & Wongmuneeworn, 2011)ThailandRCT | Demographics not presented by group, but by parity:**Primiparous**Age M – 22.95 (SD = 4.91)63.1% Buddhist27.7% had 9 years of education**Multiparous**Age M = 26.59 (SD = 4.59)72.4% Buddhist32.9% had 9 years of education70 women participated in the music group; and 75 in the control group.  | 100mm visual analogue scale, left phrase “no fear of childbirth at all”, right phrase “the most fear of childbirth” | **Marching songs and cheerful music -**  Marching songs were chosen as it was hypothesised that it would stimulate labour 1) the U.S.national anthem, “The Star-Spangled Banner” (114 beats/min); 2) the “Marines’ Hymn” (106 beats/min); 3) “The U.S. Field Artillery March” (119 beats/min); and 4) “The Stars and Stripes Forever” (113 beats/min). This was followed by cheerful instrumental music hypothesised to help relax the women, from “The Four Seasons” and other works by Vivaldi: 1) Spring Concerto No. 1 in E major (109 beats /min); 2) Summer Concerto No. 2 in G minor (107 beats/min); 3) Oboe Concerto in C major (100 beats/min); and 4) Piano Concerto in C Major (78 beats/min). The duration of the music was 30 minutes and had to repeat after using for 30 minutes if the women were still in second-stage labour. | Not stated | Yes – Random block design | FOCPowerLength of labourSense of control | **FOC**Intervention: M = 48.31 (SD = 27.04)Control: M = 58.69 (SD = 31.70)t = 1.419, p = .161**Sense of power**Intervention: M = 62.78 (SD = 21.48)Control: M = 59.33 (SD = 24.00)t = 0.610, p = .544**Self-control**Intervention: M = 55.25 (SD = 21.19)Control: M = 54.87 (SD = 22.52)t = 0.068, p = .946**Duration of second-stage labour**Intervention: M = 25.90 (SD = 16.24)Control: M = 28.63 (SD = 21.25)t = 0.581, p = .564 | Medium |

**Note:** \*Included in the meta-analysis; ▲ = FOC measure used in meta-analysis; ► = Birth outcome measure used in meta-analysis; ▼ = Both FOC and birth outcome used in meta-analysis.

1 = Wijma Delivery Expectancy Questionnaire (Wijma, Wijma, & Zar, 1998); 2 = Areskog’s questions (Areskog, Kjessler, & Uddenberg, 1982); 3 = Fear of Birth Scale (Ternström, Hildingsson, Haines, & Rubertsson, 2016); 4 = Diagnostic and Statistical Manual of Mental Disorders 4th edition (American Psychiatric Association, 2000); 5 = Efficacy of delivery questionnaire (Khorsandi et al., 2008); 6 = Wijma Delivery Experience Questionnaire (Wijma et al., 1998); 7 = Feelings of Fear and Security Associated with Pregnancy and Childbirth (Melender, 2002);8 = Childbirth Attitudes Questionnaire and Childbirth Self Efficacy Questionnaire (Lowe, 2000); 9 = birth related concerns (Nurmi, 1991); 10 = Childbirth self-efficacy (Ip, Tang, & Goggins, 2009); 11 = the authors used their own measure by provide no details; 12 = Mother-infant attachment (Müller, 1994); 13 = Delivery Satisfaction Scale (T. Saisto, Salmela-Aro, Nurmi, & Halmesm??ki, 2001); 14 = Preparedness for childbirth scale, developed by the authors. 14 questions about self-efficacy (e.g. How well do you think you can keep active during childbirth?), social support (e.g. How easily do you think you can ask for help and advice during the childbirth?) and dealing with possible setbacks (e.g. If there is a problem during childbirth, I trust that I will receive help) on a seven-point scale ranging from 1 = not at all to 7 = a lot; 15 = Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987); 16 = Traumatic Events Scale (Wijma, Soderquist, Carlsson, & Wijma, 2000); 17 = Satisfaction with life scale (Diener, Emmons, Larsem, & Griffin, 1985); 18 = Positive and Negative Affect Scale (Crawford & Henry, 2004); 19 = Visual Analogue Scale (1 = no fear; 10 = a lot of fear) (H. Rouhe et al., 2013); 20 = Euro Quality of Life – 5 dimensions (Rabin, Gudex, Selai, & Herdman, 2014); 21 = Impact of Events Scale (Horowitz, Wilner, & Alvarez, 1979); 22 = Pittsburgh Sleep Quality Scale (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989); 23 = Pictorial Representation of Attachment Measure (PRAM) (van Bakel, Maas, Vreeswijk, & Vingerhoets, 2013); 24 Psychological wellbeing measure made by authors after extended review of literature and revised by five experts in the field of psychiatric nursing and psychiatric medicine to test its content validity. It consists of 29-items questionnaire with a response rate of 1-3 (score 3 for strongly agree, score 2 for moderately agree, score 1 for slight agree) with higher scores representing higher psychological wellbeing. The maximum possible total score was: 3 × 29 = 87 and the minimum possible total score was: 29 ×1=29; 24 = WHOQOL-BREF was developed by the World Health Organization as a brief version of the WHOQOL-100 instrument, contained 26 questions (World Health Organization, 1996); 25 = Beck Anxiety Inventory (Beck & Steer, 1990); 26 = Beck Depression Inventory (Beck, Steer, & Brown, 1996)

**Table S3. Methodological quality of studies**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author and year** | **Q.1** |  | **Q.2** |  | **Q.3** |  | **Q.4** |  | **Q.5** |  | **Q.6** |  | **Q.7** |  | **Total** | **%** | **Label** |
| (Ahmadi et al., 2018) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Airo (Toivanen) et al., 2018; H. Rouhe et al., 2013; Hanna Rouhe, Salmela-Aro, Toivanen, Tokola, Halmesmäki, Ryding, et al., 2015; Hanna Rouhe, Salmela-Aro, Toivanen, Tokola, Halmesmäki, & Saisto, 2015; Ryding et al., 2018; Salmela-Aro et al., 2012) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |   | 1 | 4 | 80 | Low |
| (Andaroon et al., 2017) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Baleghi et al., 2016) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Participant characteristics are minimum | 0 | 2 | 40 | Medium |
| (Baylis et al., 2019; Hildingsson & Rubertsson, 2019; Larsson et al., 2019, 2017; Rondung et al., 2018) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |   | 1 | 4 | 80 | Low |
| (Bergström et al., 2013) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 0 | 3 | 60 | Medium |
| (Bulez et al., 2019) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | No | 0 | No - needed to report WDEQ scores after control  | 0 |  | 1 | 1 | 20 | High |
| (Byrne et al., 2014; Fisher et al., 2012) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |   | 1 | 3 | 60 | Medium |
| (El-Malky et al., 2018) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | No | 0 | No | 0 |  |   | 0 | 0 | High |
| (Fenwick et al., 2015; J. Toohill et al., 2017; Jocelyn Toohill et al., 2014; Turkstra et al., 2017) | Yes | 1 | Yes | 0 | No | 0 | No | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Gökçe İsbir et al., 2016) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Guder et al., 2018) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Guszkowska, 2014) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Reporting of outcomes difficult to follow in some places | 0 | 2 | 40 | Medium |
| (Haapio et al., 2017) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Halvorsen et al., 2010) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Henriksen et al., 2018) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | No | 0 | No – differences in birth outcomes were not reported  | 0 |  | 0 | 0 | 0 | High |
| (Hildingsson & Rubertsson, 2019; Hildingsson et al., 2018; Hildingsson, Rubertsson, et al., 2019) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Hunter et al., 2011) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Irmak Vural & Aslan, 2019) | Yes | 1 | Yes | 0 | No | 0 | Yes | 1 | Yes | 1 | Yes | 1 |  | 1 | 5 | 100 | Low |
| (Karabulut et al., 2016) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | There is a higher education level in intervention group | 0 | 2 | 40 | Medium |
| (Khedr & Eldeen, 2017) | Yes | 1 | Yes | 0 | No | 0 | No | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Kizilirmak & Başer, 2016) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Klabbers et al., 2018, 2019) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Potential differences in education and parity across groups but not clear if these are significant. Slightly lower WDEQ in control group (not clear if significant). Some of the same transferred to other treatments so potentially self-selecting sample | 0 | 3 | 60 | Medium |
| (Kordi et al., 2017) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Kulkarni et al., 2014) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Did not report how FOC was identified | 0 | 2 | 40 | Medium |
| (Larsson et al., 2015) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Lyberg & Severinsson, 2010a, 2010b) | No | 0 | Yes | 0 | No | 0 | Yes | 1 | Yes | 1 | Yes | 1 | Did not report how FOC was identified | 0 | 3 | 60 | Medium |
| (Masoumi et al., 2016) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |   | 1 | 4 | 80 | Low |
| (Narita et al., 2018) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | No - no means between groups | 0 |  | 1 | 2 | 40 | Medium |
| (Navaee & Abedian, 2015) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Did not report demographics for each group separately  | 0 | 2 | 40 | Medium |
| (Nerum et al., 2006) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | No – FOC score not reported | 0 |   | 1 | 2 | 40 | Medium |
| (K. Nieminen et al., 2015; Katri Nieminen et al., 2016) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |   | 1 | 3 | 60 | Medium |
| (Ozdemir et al., 2018) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Phumdoung et al., 2011) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Did not report demographics for each group separately | 0 | 2 | 40 | Medium |
| (Pour-Edalati et al., 2019) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Rondung et al., 2018) | Yes | 1 | Yes | 0 | No | 0 | No | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (T. Saisto, Salmela-Aro, & Nurmi, 2001) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | No – FOC score not reported | 0 |  | 1 | 3 | 60 | Medium |
| (Terhi Saisto et al., 2006) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | No - FOC score not reported? | 0 |  | 1 | 2 | 40 | Medium |
| (Serçekuş & Başkale, 2016) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Sezen & Ünsalver, 2019) | No | 0 | Yes | 0 | No | 1 | Unknown | 1 | No | 0 | Yes | 1 | There is a significant difference in age between groups | 0 | 2 | 40 | Medium |
| (Sjogren, 1998) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 | Did not report demographics for each group separately | 0 | 2 | 40 | Medium |
| (Soltani et al., 2017) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | No | 0 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Sydsjö et al., 2012) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Sydsjo et al., 2014) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | No - FOC score not reported | 0 |  | 1 | 2 | 40 | Medium |
| (Sydsjö et al., 2015) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Taheri et al., 2014) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |
| (Uçar & Golbasi, 2019) | No | 0 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 3 | 60 | Medium |
| (Wahlbeck et al., 2018) | Yes | 1 | Yes | 0 | No | 0 | Unknown | 0 | Yes | 1 | Yes | 1 |  | 1 | 4 | 80 | Low |

Adapted questions from Cochrance risk of bias tool (Higgins et al., 2011)

Q1. Were participants randomly allocated?

Q2. Were participants aware of their allocation?

Q3. Were participants and personnel providing the intervention blind?

Q4. Were people performing analyses blind?

Q5. Were attritions and exclusions reported?

Q6. Were all outcomes reported?

Q7. Were there any other sources of bias?

**Table S4****. Description of studies in meta-analysis**

|  |  |  |
| --- | --- | --- |
| Attribute | n | % |
| Risk of bias |  |  |
|  | Low | 10 | 36 |
|  | Medium | 18 | 64 |
| Country |  |  |
|  | Sweden | 5 | 18 |
|  | Iran | 7 | 25 |
|  | Netherlands | 1 | 4 |
|  | Australia | 3 | 11 |
|  | Egypt | 1 | 4 |
|  | Finland | 3 | 11 |
|  | Turkey | 6 | 21 |
|  | Cyprus | 1 | 4 |
|  | Poland | 1 | 4 |
| RCT |  |  |
|  | Yes | 12 | 43 |
|  | No | 15 | 54 |
|  | Partly | 1 | 4 |
| FOC pre-test |  |  |
|  | Yes | 18 | 100 |
| Sample |  |  |
|  | Women with FOC | 14 | 50 |
|  | All women | 14 | 50 |
| Proportion of nulliparous women |  |  |
|  | 100% | 16 | 57 |
|  | 51-75% | 6 | 21 |
|  | 25-50% | 4 | 14 |
|  | Not Reported | 2 | 7 |
| Type of intervention |  |  |
|  | Internet CBT | 2 | 7 |
|  | Counselling/psychotherapy | 7 | 25 |
|  | Antenatal education | 10 | 36 |
|  | Midwife-led counselling (known midwife) | 2 | 7 |
|  | Exercise (e.g. pilates, yoga) | 2 | 7 |
|  | Face to face CBT | 3 | 11 |
|  | Mindfulness | 1 | 4 |
|  | Hypnobirthing | 1 | 4 |
| Intensity of intervention |  |  |
|  | High 6 or more sessions | 8 | 38 |
|  | Medium 3-5 sessions | 10 | 48 |
|  | Low 2 or less sessions | 3 | 14 |
|  | Not reported | 6 |  |
| Type of control |  |  |
|  | Routine care | 22 | 79 |
|  | Counselling | 4 | 14 |
|  | Midwife-led counselling | 2 | 8 |
| Outcome measured |
|  | FOC | 17 | 61 |
|  | FOC and birth outcome | 6 | 21 |
|  | Birth outcome | 5 | 18 |
| FOC measure used  |
|  | WDEQ-A | 16 | 70 |
|  | CAQ | 4 | 17 |
|  | FOBS | 1 | 4 |
|  | Own measure | 2 | 9 |
| Year of study |  |  |
|  | Median: 2017Range: 2006 - 2019 |  |  |

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