Research overview: Self-hypnosis for labour and birth

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This overview of self-hypnosis as a preparation for labour and birth introduces the approach, the theory on which it is based, and a little about the history of its use. It summarises some key issues in the use of self-hypnosis and in hypnosis research drawing on a new methodological review.[1] It presents the relevant evidence from the Cochrane review on complementary and alternative therapies for pain management in labour.[2] The background section also introduces a randomised controlled trial that is currently being carried out in England.

Background

Hypnosis for childbirth has been used for more than a century[3,4] Hypnosis often involves a hypnotist and a person who is hypnotised in order to experience altered sensations, perceptions or thoughts. This practice is sometimes referred to as 'hetero-hypnosis' — involving more than one person. Self-hypnosis refers to a person being able to alter their own state of consciousness so that normally perceived experiences, such as pain, do not reach awareness or do so with less force.[1] Hypnosis uses focused attention and relaxation, to develop increased receptivity to verbal and non-verbal communications which are commonly referred to as 'suggestions'.[2,5,6,7] These are positive statements used in order to achieve specific therapeutic goals.

There is a common misconception that when in a hypnotic state the individual loses control of her thoughts and actions, which would jeopardise her personal autonomy. Women using self-hypnosis for labour and birth are fully in control and aware of what is happening to them and those around them.[6] Rather than creating a loss of control or ability to remember, there is general agreement that hypnosis assists women in focusing their attention and enhancing their birth experience.[6,3]

Studies of hypnosis for childbirth often question the effectiveness of hypnosis for reducing labour and birth pain: some look in addition at clinical outcomes for mothers and babies. Earlier in 2011, Landolt and Milling's published the first 'comprehensive, methodologically-informed review of all controlled research on the efficacy of hypnosis for managing labour pain', which provides a detailed description of each study's hypnosis intervention, the study's design and a critique of the strengths and weaknesses.[1]

The theory

In labour and childbirth the goal is to alleviate or reduce fear, tension and pain[8,3] so the physiological act of birth can progress in a way that is comfortable for the mother. Dr Grantly Dick Read introduced the idea of a pain-tension-fear cycle of childbirth.[9] He argued that 'a tense mind means a tense cervix' and that when we are afraid during childbirth the body draws blood away from non-vital organs, such as the uterus, to the extremities, which results in pain. By removing fear and its physiological consequence the uterus can function as intended, eliminating extreme pain. Breaking this pain cycle is a central concept in hypnosis[10] with Dick Read's work often cited as the theoretical link between hypnotherapy and childbirth. The hypothesis that pain is aggravated through fear and emotional tension is well supported by the literature.[3,8,11]

Methods of self-hypnosis

Methods of self-hypnosis focus on women understanding the physiology of labour and birth and understanding terms and statements she may hear throughout her labour. Its aim is to develop a women's natural physiological ability to birth through confidence, understanding and control.[3,8,4,7] The mother is taught to induce and maintain a state of self-hypnosis through a variety of techniques such as deep relaxation, visualisation, breathing, counting and spatial/auditory 'anchoring'.[10,6,5,3]

Techniques to induce hypnosis can be taught individually or as part of a group, with neither approach showing additional benefit.[3] These techniques can be incorporated into antenatal classes which are not presented as being a self-hypnosis course. NCT courses, particularly during the 1960s and1970s, often taught, and provided a regular opportunity to practise deep relaxation and focused breathing. However, unless a course specifies what it is providing, parents choosing a course do not know what kind of preparation is being offered, or how much time will be devoted to relaxation, breathing awareness, positive suggestions and visualisation.

Providers of hypnosis-based preparation courses to expectant parents in the UK include hypnotherapists working in the NHS or privately and organisations such as Hypnobirthing® and Natal Hypnotherapy. Some approaches encourage the father or birthing partner to learn the techniques to guide the mother into the hypnotic state although this is not necessary.[4] However some suggest support from a father or birth partner is helpful for deepening techniques and in preventing sabotage by use of negative language in the hospital environment.

Interest in self-hypnosis for birth

During the 1960s there was a good deal of interest in self-hypnosis for birth and a number of studies were published supporting the effectiveness of hypnosis in obstetrics.[3,12,13,14] Studies reported high rates (58%-93%) of women giving birth with hypnosis as their sole form of pain relief.[12,15,16,17] Since that time there has been a huge rise in the availability and use of pharmacological pain relief, particularly epidural anaesthesia, and an increase in surgical interventions.[4,3] However, there is a resurgence of interest in non-pharmacological, non-invasive approaches to coping during labour among expectant parents, holistic practitioners[4,18] and health professionals.[19,20,21] One reason for this is a growing recognition that effective relief of pain does not necessarily equate with women feeling satisfied with their birth experience.[22]

Advances in neuroimaging of the brain have increased our understanding of the effectiveness of hypnosis as a pain inhibitor. Hypnosis is found to suppress neural activity between the sensory cortex and the amygdale-limbic system, which inhibits the emotional interpretation of sensations being experienced as pain. It is thought that relief from pain during hypnosis is due to a change in cerebral blood flow and inhibition of higher analytic cortical centres.[23,24] Recently a Cochrane review has been published providing evidence of the benefits of using hypnosis in labour and birth.[2]

Downe is currently carrying out the SHIP study, a randomised controlled trial of 800 first time mothers in England, to add to the evidence-base on the effectiveness of hypnosis as a pain and stress reliever for birth.[25] Downe says: 'The study started in August 2010, and is due to complete by the end of 2012. The primary outcome measure is use of epidural analgesia. Eligible nulliparous women who agree to take part are randomised to either usual care, or to group sessions run by midwives trained in self-hypnosis teaching techniques. The sessions take place at 32 and 35 weeks' gestation. Prospective birth partners are also invited to attend, though this is not essential. Each session lasts around 90 minutes. At the end of the first session, attendees are given a CD of the hypnosis 'script'. They are asked to practice with this daily, and then to use it in labour'.[24] There is considerable support among midwives in the NHS where self-hypnosis has been introduced.[26]

Methodology
This overview presents data from the trials selected for inclusion in the Cochrane review on complimentary and alternative therapies carried out by Smith, Collins, Cyna and Crowther.[2] Some of these explicitly involved self-hypnosis and others provided one or more sessions of hetero-hypnosis with positive suggestions about birth, either during pregnancy or during labour.[1] Smith et al searched the Cochrane Pregnancy and Childbirth Group's Trials Register which contains trials identified from:

- Quarterly searches of the Cochrane Central Register of Controlled Trials (CENTRAL)
- Monthly searches of MEDLINE
- Hand searches of 30 journals and the proceedings of major conferences
- Weekly current awareness search of a further 37 journals.[2]

In addition, a search was carried out on NCT's Library and Information Service database, the MIDIRS database, CINAHL, British Nursing Index, PsychINFO, Medline and SocIndex using the terms 'hypnosis AND labour' and 'hypnosis AND childbirth' for qualitative and mixed method studies. These searches provided many of the sources referred to in the background section, as well as in sections below.

The Cochrane reviewers assessed each identified randomised controlled trail (RCT), in terms of its methodological quality, including adequate concealment of treatment allocation (for example, opaque, sealed, numbered envelopes) and method of allocation to treatment or control group (for example, by computer randomisation, random-number tables). The studies were also assessed in terms of adequate documentation of how any 'exclusions' were handled after treatment allocation to facilitate intention-to-treat analysis. Exclusions can occur if people are unable or unwilling to continue participating in the study or receiving the 'treatment', for example in trials of 'low-risk' women risk factors or complications may develop. The 'intention to treat' principle is important because it can then provide answers to how the treatment or intervention would be likely to work in practice, in the 'real' world as opposed to under ideal conditions. It means that analysis includes all members of the treatment and control groups as allocated at the start of the study, regardless of their actual use of the intervention or their care pathway. Studies were also assessed for 'adequate blinding of outcome assessment', meaning that those carrying out the analysis should not have had any prior access to details of the woman's clinical care during labour and birth, or their views.

Quality assessment of trials is usually values the blinding of the 'patient' or the 'assessor/care provider' (double blinding) or blinding of only one party (double blinding). While this is possible for drug treatments where concealing the identity of different drugs or a drug and a placebo is comparatively straightforward, this is generally not possible with a complex social intervention, such as self-hypnosis, where both the practitioner and the woman may be aware of the difference between what is offered in the treatment and in the control arms. So, 'studies without double blinding of assessments were considered for inclusion'.[2]

Landolt and Milling state explicitly that social psychological theory suggests that 'believing one is being hypnotised' itself affects behaviour and thus the efficacy of a hypnosis intervention. Thus, they say, double blinding is counterproductive in a hypnosis trial as the person's thoughts are 'integral to the mechanism of action'.[1]

Five RCTs were considered of high enough quality to be included (see Table 1). Some less rigorous studies are included in the table to provide a more complete picture of studies on self-hypnosis as preparation for labour. Both the five RCTs and three controlled studies included in this review formed part of Landolt and Milling's methodological review, which included 13 experimental studies in which a hypnosis intervention was compared with at least one alternative prophylactic intervention, a placebo, or standard care.[1]

Evidence of safety, effectiveness and women's views

Safety
The safety of hypnosis as a tool in pregnancy and childbirth is supported by numerous reports in the literature.[5,8,3,27] There are some contraindications. Simkin recommends that women are encouraged not to use any visualisation associated with a pre-existing phobia or distressing experience.[4] It has been suggested that it is contraindicated in women with a history of psychosis[4,3] or with undiagnosed, untreated medical illness presenting with pain.[28] Hypnosis is not suitable for women who do not feel motivated to use it or who feel that it conflicts with their religious belief.[28] The Cochrane review included the objective of determining whether the complementary and alternative medicines studies had any 'adverse effects on the mother (duration of labour, mode of deliver) or baby'. None were reported.[2]

Effectiveness
The Cochrane review of five RCTs, involving 749 women, found evidence to suggest that hypnosis decreases the need for pharmacological pain relief in labour including use of epidural; reduces augmentation of labour and increases the incidence of spontaneous vaginal birth.[2] Hypnosis use is also associated with improved maternal wellbeing and satisfaction. Limited evidence suggests that hypnosis may be beneficial to neonatal outcomes.

● Less use of pharmacological pain relief

All five RCTs included in the Cochrane review documented use of pain relief as a primary outcome measure. Four studies (n=662 women) found that when compared with the control group, women in the hypnosis groups used less anaesthesia and narcotics for pain relief.[29,30,31,32] The largest of these studies (n=520 women), found that women using hypnosis required less use of epidural analgesia (RR 0.30, 95% CI 0.22-0.40).[31] The fifth study of 65 women found no overall difference in the use of pain relief between women using hypnosis and the control group, however women who were rated as having a good or moderate response to hypnosis had relatively fewer epidurals than those rated to have a poor response (4/24 v 4/5, P<0.005).[33]

Three matched controlled studies have also found favourable results for using hypnosis as a pain reliever.[34,5,35] One study of 262 women found significantly more women in the hypnosis group required no analgesia compared to controls (p<0.001).[34] Another study of 72 women reported only 5.5% of the hypnosis group required analgesia compared to 75% of the control group.[35] In this study hypnosis was successful as the sole anaesthetic in 61% of deliveries whereas only 2.7% of the control group did not require any anaesthetic or premedication. The third study of 77 women, found that women using hypnosis preparation used fewer epidurals than parity matched controls: 18/50 (36%) versus 765/1436 (53%).[5]

In their methodological review as well as focusing on outcomes, Landolt and Milling specifically described qualities of the hypnosis intervention used in each study, and what was offered to the control group in the 13 studies identified: respectively, standard care, supportive counselling, the Lamaze method and childbirth education classes.[1] Five studies (n=437 women) compared hypnotic preparation and/or self-hypnosis, used alone or with a birth partner during labour, with standard care and found hypnosis more effective in reducing pain and analgesic use during labour and delivery.

Three studies (n=649 women) compared hypnotic preparation and/or self-hypnosis with supportive counselling. Two out of three reported self-hypnosis as reducing analgesic medication use. The third study used hetero-hypnotic preparation during pregnancy only; there was no self-hypnosis

taught and no support from a hypnotherapist during labour.[29] Three studies (n=185 women) found hypnotic preparation, sometimes with self-hypnosis, more effective than traditional childbirth classes in reducing pain and medication use. One study (n-122 women) compared Lamaze preparation only, hypnosis only and Lamaze plus hypnosis. No difference between groups was found and in the absence of a no-treatment control the findings were best described as inconclusive. Landolt and Milling conclude that active use of hypnosis during labour seems to be important, and that a hetero-hypnosis, self-hypnosis and combination of hetero-hypnosis and self-hypnosis were consistently found to be more effective than any of the comparison interventions or controls, and show 'considerable promise as an adjunct to pharmacologic methods' for managing labour pain.

'NCT courses, particularly during the 1960s and 1970s, often taught, and provided a regular opportunity to practise, deep relaxation and focused breathing.'

● Mixed findings on length of labour

The influence of hypnosis on length of labour was evaluated in two RCTs included in the Cochrane review.[33,30] One (n=82 women) found longer mean duration in the hypnosis group (12.4 versus 9.7 hours, p<0.05),[33] the other (n=60 women) found labour duration to be significantly shorter by over two hours (p<0.001).[30]

A matched controlled study of 126 women found hypnosis was significantly associated with shorter stage one labours (p< .001) in both primigravid and multigravid women.[34] Another matched controlled study of 210 women found labour was just over half the average length of the other two groups (p<0.05) with the first stage of labour significantly shorter (p <0.001).[14]

● Increase in spontaneous vaginal birth

Hypnosis is shown to increase the likelihood of normal birth. Three RCTs (n=645 women) 0.46, 95% CI 0.30 to 0.72).[31] in the Cochrane review reported on mode of delivery as a

secondary outcome and found more women in hypnosis groups had a spontaneous vaginal birth than those in the control group (RR 1.32, 95% CI 1.19 to 1.46).[33,30,31] The largest of the RCTs (n=520 women) reported a significantly lower rate of caesarean section in the hypnosis group (RR0.46, 95% CI 0.30 to 0.72).[31]

● Reduced augmentation and induction of labour

Three studies in the Cochrane review included augmentation of labour as an outcome.[30,29,31] Two (n=622 women) reported on the use of augmentation with oxytocin and found a lower rate in the hypnosis group (RR 0.29, 95% CI 0.19 to 0.45).[30,29] The third (n=520) combined augmentation with induction and reported that induction of labour was less likely when hypnosis was used (RR 0.34 95% CI 0.18-0.65).[31] The likelihood of augmentation was also found to be reduced in an observational study of 77 women, where those who received antenatal hypnosis training were compared with parity-matched controls: 9/50 (18%) versus 523/1436 (36%).[5]

● Some evidence of increased maternal wellbeing and satisfaction

Four studies in the Cochrane review looked at aspects of maternal wellbeing and satisfaction, however, there was little consistency of outcome measures used. Two studies (n=100) focused on women's experience of pain during labour and found women in the hypnosis groups reported greater satisfaction than those in the control group, however, Rock reported a p value (p< 0.01) but no data.[30,32] Three studies looked at the incidence of postnatal depression. Both Rock and Harmon found no difference, though numbers were so small that a measurable difference would be unlikely.[32,30] In the third study Mehl-Madrona (n= 520 women) reported that depression was greater among women a 'complicated' birth when they had not used prenatal hypnosis (p<0.05).[31]

Other studies have reported that women using hypnosis were more relaxed, showed less postpartum exhaustion or reported feeling well after delivery compared with women not using hypnosis.[8,34,36,3,14]

A matched control study of 210 women found that 70% of women in the hypnosis group described the labour as pleasant compared to only 33% of the controls.[14]

There are very few qualitative studies of hypnosis and women's experiences of labour and birth. One small study in which the hypnotherapist was also the researcher reports on the experiences of eight multiparous women. They were trained in self-hypnosis, and the hypnotherapist was also present during their labour to help maintain their depth of hypnosis. The women did not use any analgesic medications. Interviewed within 24 hours of birth, all participants described hypnosis as affording them a sense of pain relief, a sense of control and confidence during labour. They were all pleased and satisfied with the intervention.

Most also reported a decrease in fear of natural childbirth in comparison with their previous delivery and a decrease in discomfort and severe pain when they were in hypnosis.[37] Another small study focusing on the experiences of five women trained in self-hypnosis after a previous negative birth experience, reported themes of less pain than in previous births, feelings of deep relaxation during labour, and enjoyable birth experiences.[38]

• Possible improvement in neonatal outcomes
Three studies included in the Cochrane review considered 'limited neonatal outcomes'.[2] One (n= 60 women) found a higher mean Apgar score at five minutes for the hypnosis group (9.30; standard deviation 0.65) vs. the control group (8.7; standard deviation 0.50).[30] One (n=42 women) found no difference in admission to neonatal intensive care,[29] another (n=520 women) found no difference in need for neonatal resuscitation.[31]

A matched-controlled study (n=72) also reported improved Apgar scores following self-hypnosis training at one minute (p<0.01) and five minutes (p < .01).[35]

Beneficial effects have been reported in case studies where hypnosis has been used as an adjunct to the medical treatment of preterm labour, and for delaying delivery until or close to term in women (n=4) experiencing cervical incompetence, where 'suggestions' were taught with success.[3]

• Dose response
Self-hypnosis is a skill that needs to be learnt, and effectiveness appears to increase with additional practice. The recommended timing and number of practice sessions varies; however evidence suggests that between three and six sessions on a weekly basis during late pregnancy is usual.[2,10] However one study of 40 women included in the Cochrane Review demonstrated that hypnosis techniques can be successfully administered in untrained women during labour with positive effect. These women received a standard hypnosis script delivered by a medical student on a 1:1 basis during labour.[32] Self-hypnosis CDs encourage women to listen daily in late pregnancy, however weekly or even once or twice is said to be effective.[39] Hypnosis CDs are also provided as reinforcement for work done during a taught course. To date there have been no randomised studies to confirm the efficacy of learning self-hypnosis from a CD.

Discussion and conclusion
There are few high quality studies of self-hypnosis given its considerable potential to improve women's experiences of labour and birth, its safety and potential to reduce the need for medical interventions. The authors of the Cochrane review concluded that hypnosis was one of only two alternatives to pharmacological pain relief for which there is currently evidence of effectiveness in enabling women to manage pain during labour. They said, 'The pain of labour can be intense, with tension, anxiety and fear making it worse. Many women would like to labour without using drugs, and turn to alternatives to manage pain. Many alternative methods are tried in order to help manage pain and include acupuncture, mind-body techniques, massage, reflexology, herbal medicines or homoeopathy, hypnosis and music. We found evidence that acupuncture and hypnosis may help relieve labour pain.'

Studies demonstrate that teaching of hypnosis methods can be easily incorporated into existing antenatal care sessions. It seems that it is more efficacious if women are actively taught self-hypnosis techniques for use during labour than if they experience hypnosis and positive suggestions, only, during pregnancy. Only five studies identified

by Landolt and Milling were based on random allocation to treatment or control groups and a number were carried out using a self-selecting sample, so many interesting questions remain, such as how acceptable self-hypnosis would be to a general population of childbearing women in the UK and what might its potential be for improving women's experience of birth and clinical outcomes.[1]

Key points

- There is currently limited evidence of women's satisfaction with their experience of labour when using self-hypnosis; however, results suggest that hetero-hypnosis and self-hypnosis are associated with women feeling more relaxed during labour and being more likely to enjoy the experience.

- Woman using hypnosis are more likely to give birth without the need for pharmacological pain relief. There is also some evidence of an increase in spontaneous birth and improved outcomes for babies, but more high-quality studies are needed to demonstrate which kinds of hypnosis interventions are most effective and meet the needs of women.

- Landolt and Milling call for the use of a 'treatment manual' to increase opportunities for more consistency, or 'fidelity', in the way hypnosis training is offered and to enable replication of studies.

Table 1 Studies of the effectiveness of hypnotic preparation (hetero-hypnosis) and/or self-hypnosis for labour

Study	Place/patient	Type of Intervention	Control/Comparison	Outcomes
*Freeman 1986[33] Allocation method not described Single blind RCT	England 82 primigravid women	Hypnotic reparation Seen individually weekly from 32 weeks in antenatal setting and taught hypnotic visualisation techniques	Attended childbirth education classes	• Overall no reduction in use of analgesia
*Harmon 1990[30] Single blind RCT	USA; private healthcare 60 nulliparous women with 'hypnotic susceptibility'	Self-hypnosis Six, one hour, weekly sessions in groups of 15. A live 'hypnotic induction' in wk 1, then a recording of same in weeks 2-6, starting at end of 2nd trimester	Six, one-hour, weekly sessions with a recording of relaxation, distraction and breathing. 'practice for childbirth'	• Reduced use of analgesia • More spontaneous births • Higher Apgar scores at 5 minutes
*Martin 2001[29] Allocation method not described Single blind RCT	USA; public health department 47 teenagers	Hypnotic preparation; but no self-hypnosis. Four sessions over eight weeks. Seen individually from 20-24 weeks, in antenatal setting	Received supportive counselling	• Less surgical intervention during delivery • Fewer complication • Shorter hospital stay
*Mehl-Madrona 2004[31] Loss to follow up not reported RCT	USA 520 nulliparous and gravid women	Hypnotic preparation (five sessions) during 1st or 2nd trimester unclear if taught self-hypnosis	Received one session of supportive psychotherapy	• Reduced use of analgesia • Fewer caesarean sections • Less augmentation • Enhanced maternal emotional experience
*Rock 1969[32] Allocation concealment poor, method of allocation unclear Single blind RCT	USA 40 women	22 women recruited during labour no more than 4m dilated received a standard hypnosis script on a 1:1 basis	Standard care	• Reduced use of analgesia • Less postpartum depression • Higher patient assessment of experience
Davidson 1962[14] 3 arm matched control	England 210 women	Self-hypnosis 70 women received 1.5 hours of hypnosis training as in group setting as part of antenatal care	70 women given physiotherapy and 70 standard care	• Reduced use of analgesia • Higher patient assessment of pregnancy and birth experience
Werner 1959[40] Observation	100 women	Self-hypnosis Women received training on hypnosis techniques as part of their antenatal care	Standard care	• Reduced use of analgesia
Jenkins 1993[34] Case control semi prospective	126 primips and 136 multips with 300 matched control	Hypnotic preparation Six individual 30-minute antenatal sessions that included hypnotic suggestions for labour and birth	Standard care	• Reduced use of analgesia • Reduced length of labour
Bobart & Brown 2002[35] Matched control	72 women	Received hypnosis training as part of their antenatal care	Standard care	• Reduced use of analgesia • Higher Apgar scores at 1 and 5 minutes • Shorter hospital stay
Cyna 2006[5] NCT	77 women and 3249 matched controls	Hypnotic preparation Received hypnosis training for three consecutive weeks lasting one hour	Standard care	• Reduced use of epidural • Less augmentation

Studies included in the Cochrane Review

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