

Studies on Hypnosis for Childbirth

British physician, Dr. Grantly Dick-Read, was the first to suggest the “fear-tension-pain” cycle in his work *Natural Childbirth* (1933). As a result of his understanding of how this cycle affected birthing, he recommended women prepare for childbirth.

Research studies from around the world have shown that the use of hypnosis for childbirth results in:

- * shorter labors
- * reduced use of pain medication
- * higher Apgar scores
- * reduced cesarean and forceps delivery

Length of Labor

In a study of 262 subjects with 600 controls done by Jenkins and Pritchard, it was found that active labor was reduced 3 hours for first time moms and 1 hour for women who already experienced labor and birth. (1)

In a study that compared hypnosis and Lamaze training, the first stage of labor was shortened in the hypnosis group by 98 minutes for first time mothers and by 40 minutes for second time mothers. These women were more satisfied with labor and reported other benefits of hypnosis such as reduced anxiety and help with getting to sleep.(2)

In 1990 the University of Wisconsin – Milwaukee and Waukesha Memorial Hospital studied the benefits of hypnotic analgesia in addition to childbirth education. They found that hypnotically prepared births had shorter labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries as well as lower incidents of post-partum depression.

In 1993 studies were showing a reduction in the length of labor when the mother was prepared for birth with hypnosis. This study was published in the *British Journal of Obstetrics and Gynecology*. (3)

A study by University of Florida researchers in August 2000, concluded that mothers who learn hypnosis before birthing suffer fewer complications, need less medication and are more likely to have healthier babies than are women without hypnosis.

A Retrospective study was conducted by Shawn Gallagher in Canada in 2001. The results showed that mothers who prepared with hypnosis had shorter labors, used less pain medication, had lower intervention rates, and perceived their births as being very satisfactory and would recommend using hypnosis to other mothers.

A study published in *The Journal of Family Practice*, May 2001, evaluated how childbirth preparation incorporating hypnotic techniques affected the labor

processes and birth outcomes of pregnant adolescents. It showed a reduction of complications, cesarean section, and hospital stay that reflects a direct medical benefit to mother and child and suggest the potential for a corresponding cost-saving benefit.

Medication Use

In a British study, of 45 moms that were first and second time mothers using Hypnosis for Childbirth, 55% required no medication for pain relief. In the other non-hypnosis groups, only 22% of 90 women required no medication.

Two research pieces reported on 1,000 consecutive births: 850 women used hypnotic analgesia resulting in 58 percent rate of no medication.

Five other studies reported an incidence of 60 to 79 percent non-medicated births.

Rates of Intervention

In Florida, a randomized control trial of 42 teenager mothers was done. Of the 22 moms using hypnosis, none experienced surgical intervention compared with 12 of the 20 moms in the control group. Twelve moms in the hypnosis group experienced complications compared with 17 in the control group.

Harmon, Hynan and Tyre reported more spontaneous deliveries, higher Apgar scores and reduced medication use in the study of 60 women.

Thirty-eight of the forty-five Hypnosis for Childbirth moms, delivered spontaneously without the use of cesarean, forceps or vacuum assistance. This rate of 84% is higher than the average rate of normal birth for the general population of first time mothers.

Combined, what research has discovered is that there are significant benefits for women who choose to use hypnosis for their birthing.

Complementary and alternative therapies for pain management in labour.

Smith CA, Collins CT, Cyna AM, Crowther CA.

The University of Adelaide, Discipline of Obstetrics and Gynaecology, Level 6, Medical School North, Frome Road, Adelaide, South Australia, Australia. caroline.a.smith@adelaide.edu.au PMID: 17054175 [PubMed - indexed for MEDLINE]

BACKGROUND: Many women would like to avoid pharmacological or invasive methods of pain management in labour and this may contribute towards the popularity of complementary methods of pain management. This review examined currently available evidence supporting the use of alternative and complementary therapies for pain management in labour. **OBJECTIVES:** To examine the effects of complementary and alternative therapies for pain management in labour on maternal and perinatal morbidity. **SEARCH STRATEGY:** We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (February 2006), the Cochrane Central Register of Controlled Trials (The Cochrane Library 2006, Issue 1), MEDLINE (1966 to February 2006), EMBASE (1980 to February 2006) and CINAHL (1980 to February 2006). **SELECTION CRITERIA:** The inclusion criteria included published and unpublished randomised controlled trials comparing complementary and alternative therapies (but not biofeedback) with placebo, no treatment or pharmacological forms of pain management in labour. All women whether primiparous or multiparous, and in spontaneous or induced labour, in the first and second stage of labour were included. **DATA COLLECTION AND ANALYSIS:** Meta-analysis was performed using relative risks for dichotomous outcomes and mean differences for continuous outcomes. The outcome measures were maternal satisfaction, use of pharmacological pain relief and maternal and neonatal adverse outcomes. **MAIN RESULTS:** Fourteen trials were included in the review with data reporting on 1537 women using different modalities of pain management; 1448 women were included in the meta-analysis. Three trials involved acupuncture (n = 496), one audio-analgesia (n = 24), two trials acupressure (n = 172), one aromatherapy (n = 22), five trials hypnosis (n = 729), one trial of massage (n = 60), and relaxation (n = 34). The trials of acupuncture showed a decreased need for pain relief (relative risk (RR) 0.70, 95% confidence interval (CI) 0.49 to 1.00, two trials 288 women). Women taught self-hypnosis had decreased requirements for pharmacological analgesia (RR 0.53, 95% CI 0.36 to 0.79, five trials 749 women) including epidural analgesia (RR 0.30, 95% CI 0.22 to 0.40) and were more satisfied with their pain management in labour compared with controls (RR 2.33, 95% CI 1.15 to 4.71, one trial). No differences were seen for women receiving aromatherapy, or audio analgesia. **AUTHORS' CONCLUSIONS:** Acupuncture and hypnosis may be beneficial for the management of pain during labour; however, the number of women studied has been small. Few other complementary therapies have been subjected to proper scientific study.

Antenatal self-hypnosis for labour and childbirth: a pilot study. Anaesth Intensive Care.

2006 Aug;34(4):464-9. Cyna AM, Andrew MI, McAuliffe GL. PMID: 16913343 [PubMed - indexed for MEDLINE]

Department of Women's Anaesthesia, Women's and Children's Hospital, Adelaide, South Australia, Australia.

In our institution we have used antenatal training in self-hypnosis for over three years as a tool to provide relaxation, anxiolysis and analgesia for women in labour. To assess the effects of hypnotherapy, we prospectively collected data related to the use of hypnosis in preparation for childbirth, and compared the birth outcomes of women experiencing antenatal hypnosis with parity and gestational age matched controls. **METHODS:** Prospective data about women taught self-hypnosis in preparation for childbirth were collected between August 2002 and August 2004. Birth outcome data of women using hypnosis were compared with routinely collected retrospective data from parity and gestational age matched women delivering after 37 weeks gestation during 2003. **RESULTS:** Seventy-seven antenatal women consecutively taught self-hypnosis in preparation for childbirth were compared with 3,249 parity and gestational age matched controls. Of the women taught antenatal self-hypnosis, nulliparous parturients used fewer epidurals: 36% (18/50) compared with 53% (765/1436) of controls (RR 0.68 [95%CI 0.47-0.98]); and required less augmentation: 18% (9/50) vs 36% (523/1436) (RR 0.48 [95%CI 0.27-0.90]). **CONCLUSIONS:** Our clinical findings are consistent with recent meta-analyses showing beneficial outcomes associated with the use of hypnosis in childbirth. Adequately powered, randomized trials are required to further elucidate the effects of hypnosis preparation for childbirth.

Improved obstetric outcomes using hypnotic analgesia and skill mastery combined with childbirth education.

Harmon TM, Hynan MT, Tyre TE. University of Wisconsin, Milwaukee. PMID: 2254498 [PubMed - indexed for MEDLINE]

The benefits of hypnotic analgesia as an adjunct to childbirth education were studied in 60 nulliparous women. Subjects were divided into high and low hypnotic susceptibility groups before receiving 6 sessions of childbirth education and skill mastery using an ischemic pain task. Half of the Ss in each group received a hypnotic induction at the beginning of each session; the remaining control Ss received relaxation and breathing exercises typically used in childbirth education. Both hypnotic Ss and highly susceptible Ss reported reduced pain. Hypnotically prepared births had shorter Stage 1 labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries than control Ss' births. Highly susceptible, hypnotically treated women had lower depression scores after birth than women in the other 3 groups. We propose that repeated skill mastery facilitated the effectiveness of hypnosis in our study.

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Update of: Cochrane Database Syst Rev. 2003;(2):CD003521.

Complementary and alternative therapies for pain management in labour.

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BACKGROUND: Many women would like to avoid pharmacological or invasive methods of pain management in labour and this may contribute towards the popularity of complementary methods of pain management. This review examined currently available evidence supporting the use of alternative and complementary therapies for pain management in labour. **OBJECTIVES:** To examine the effects of complementary and alternative therapies for pain management in labour on maternal and perinatal morbidity. **SEARCH STRATEGY:** We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (February 2006), the Cochrane Central Register of Controlled Trials (The Cochrane Library 2006, Issue 1), MEDLINE (1966 to February 2006), EMBASE (1980 to February 2006) and CINAHL (1980 to February 2006). **SELECTION CRITERIA:** The inclusion criteria included published and unpublished randomised controlled trials comparing complementary and alternative therapies (but not biofeedback) with placebo, no treatment or pharmacological forms of pain management in labour. All women whether primiparous or multiparous, and in spontaneous or induced labour, in the first and second stage of labour were included. **DATA COLLECTION AND ANALYSIS:** Meta-analysis was performed using relative risks for dichotomous outcomes and mean differences for continuous outcomes. The outcome measures were maternal satisfaction, use of pharmacological pain relief and maternal and neonatal adverse outcomes. **MAIN RESULTS:** Fourteen trials were included in the review with data reporting on 1537 women using different modalities of pain management; 1448 women were included in the meta-analysis. Three trials involved acupuncture (n = 496), one audio-analgesia (n = 24), two trials acupressure (n = 172), one aromatherapy (n = 22), five trials hypnosis (n = 729), one trial of massage (n = 60), and relaxation (n = 34). The trials of acupuncture showed a decreased need for pain relief (relative risk (RR) 0.70, 95% confidence interval (CI) 0.49 to 1.00, two trials 288 women). Women taught self-hypnosis had decreased requirements for pharmacological analgesia (RR 0.53, 95% CI 0.36 to 0.79, five trials 749 women) including epidural analgesia (RR 0.30, 95% CI 0.22 to 0.40) and were more satisfied with their pain management in labour compared with controls (RR 2.33, 95% CI 1.15 to 4.71, one trial). No differences were seen for women receiving aromatherapy, or audio analgesia. **AUTHORS' CONCLUSIONS:** Acupuncture and hypnosis may be beneficial for the management of pain during labour; however, the number of women studied has been small. Few other complementary therapies have been subjected to proper scientific study.

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Improved Obstetric Outcomes Using Hypnotic Analgesia and Skill Mastery Combined with Childbirth Education

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Published in Journal of Consulting and Clinical Psychology by the American Psychological Association, Inc., 1990, Vol 58, #5

The benefits of hypnotic analgesia as an adjunct to childbirth education were studied in 60 nulliparous (first baby) women. Subjects were divided into high and low hypnotic susceptibility groups before receiving 6 sessions of childbirth education and skill mastery using an ischemic pain task. Half of the Subjects in each group received a hypnotic induction at the beginning of each session; the remaining control Subjects received relaxation and breathing exercises typically used in childbirth education. Both hypnotic Subjects and highly susceptible Subjects reported reduced pain. Hypnotically prepared births had **shorter Stage 1 labors, less medication, higher Apgar scores, and more frequent spontaneous deliveries** than control Subjects' births. Highly susceptible, hypnotically treated women had **lower depression scores after birth** than women in the other three groups. We propose that repeated skill mastery facilitated the effectiveness of hypnosis in our study.

Antenatal self-hypnosis for labour and childbirth: a pilot study.

Cyna AM, Andrew MI, McAuliffe GL.

Department of Women's Anaesthesia, Women's and Children's Hospital, Adelaide, South Australia, Australia.

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METHODS: Prospective data about women taught self-hypnosis in preparation for childbirth were collected between August 2002 and August 2004. Birth outcome data of women using hypnosis were compared with routinely collected retrospective data from parity and gestational age matched women delivering after 37 weeks gestation during 2003.

RESULTS: Seventy-seven antenatal women consecutively taught self-hypnosis in preparation for childbirth were compared with 3,249 parity and gestational age matched controls. Of the women taught antenatal self-hypnosis, nulliparous parturients used fewer epidurals: 36% (18/50) compared with 53% (765/1436) of controls (RR 0.68 [95%CI 0.47-0.98]); and required less augmentation: 18% (9/50) vs 36% (523/1436) (RR 0.48 [95%CI 0.27-0.90]).

CONCLUSIONS: Our clinical findings are consistent with recent meta-analyses showing beneficial outcomes associated with the use of hypnosis in childbirth. Adequately powered, randomized trials are required to further elucidate the effects of hypnosis preparation for childbirth.

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Hypnosis for Childbirth:

A retrospective survey of birth outcome using prenatal self-hypnosis

A Retrospective Survey 2001

Shawn Gallagher, B.A., R.M., C.Ht

Objective: To assess the effects of prenatal hypnotherapy classes on the length of labour, use of pain medication, intervention rates, maternal pain perception and maternal satisfaction.

Design: Retrospective survey completed by the woman and her partner.

Subjects: 45 Self-referred clients, nulliparous (first baby) and low risk.

Setting: Toronto, Canada

Intervention: Three sessions of 2.5 to 3 hours in length in a group setting in mid-pregnancy, plus one session of 2.5 hours in length in late pregnancy. The sessions were provided by a Certified Hypnotherapist. The woman's partner was trained to provide additional hypnosis support during the birth as needed (the hypnotherapist did not attend the births).

Outcome Measures: Anesthetic and analgesic requirements, duration of the early, active and second stages, planned place of birth and actual place of birth, interventions required, pain scale of 0-10 as reported by the mother post-delivery, breastfeeding rates and reported maternal satisfaction.

Results:

Length of labour:

The average length of active labour for nulliparous women is 12 hours. Participants in the *Hypnosis for Childbirth* series **averaged 4.5 hours of active labour**. The average length of pushing for nulliparous women is about 2 hours. Participants in the *Hypnosis for Childbirth* series averaged just over 1 hour. *Hypnosis is associated with faster births (statistically significant) throughout the research for both the first and second stages of labour.*

Medication rates:

The epidural rate in Toronto and Mississauga ranges from 40 to 95% for nulliparous women. This survey notes an **18% epidural rate** for *Hypnosis for Childbirth* participants (11% for caesarians and forceps, 7% for maternal request). This survey's reduction in medication use is supported by statistically significant reductions in other research for women using hypnosis preparation for birth.

Caesarian rates:

The caesarian section rate in Toronto ranges from 20 to 25%, depending on the institutional setting (as in the US). This survey notes a caesarian section rate of 6.7% for *Hypnosis for Childbirth* participants. Other research also notes the reduction of birth interventions with the prenatal use of hypnosis.

The total number of participants who received an intervention was 8 for a rate of 18%. (Some women received more than one intervention.)

Breastfeeding without formula supplementation : 42 (93%)

Women who would use this method again : 43 (96%)

As a result of the *Hypnosis for Childbirth* series a very high percentage of women reported an increased sense of self-confidence prior to the onset of labour. In addition, 96% were pleased at the use of hypnosis, would use hypnosis in a subsequent birth and recommend its use to other women planning natural childbirth.

Hypnosis helps alleviate childbirth pain

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Hypnosis helps alleviate pain during childbirth, an Australian study suggests.

South Australian researchers found women having their first child who learnt self hypnosis in the lead-up to labour were less likely to need an epidural than other first-time mothers.

They compared 77 women who were taught hypnosis in preparation for childbirth with a control group of more than 3,000 mothers who received normal ante-natal care. The differences were most marked in women having their first babies.

Marion Andrew, senior consultant anaesthetist at the Women and Children's Hospital, Adelaide, said that of the hypnosis group, 36 per cent of first-time mothers had epidurals compared with 55 per cent of the controls. "I think when they're having their first baby, they're very highly motivated and a lot of women these days would prefer to avoid analgesia in labour if they can," she explained.

Dr Andrew presented the findings of the case-controlled comparison study to the annual scientific meeting of the Australian and New Zealand College of Anaesthetists in Auckland. She said the limited number of randomised-controlled trials that had been done internationally on the issue showed women taught hypnosis tended to need less pain relief and were more likely to have a normal birth.

Recent research involving brain imaging of people undergoing hypnosis while receiving a painful stimulus found reduced activity in the anterior cingulate cortex, the region responsible for the emotional component of pain.

Dr Andrew, one of two anaesthetists with training in hypnotherapy at the Women's and Children's Hospital, said hypnosis had become very much in demand among pregnant women in Adelaide. "Patients ask for it and the obstetricians are referring them," she said outside the conference. "Our experience has been that when the women hear about hypnosis they tend to be very open to using it. It allows women to have more control in labour."

The hospital planned a randomised controlled trial of 300 mothers early next year to further test the effectiveness of hypnosis in childbirth.

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Hypnosis : practical applications and theoretical considerations in normal labour.

British Journal of Obstetrics and Gynaecology 1993 Mar; 100(3): 221-6

Jenkins, MW, Pritchard MH, Aberdare District Maternity Unit, Mid Glamorgan, Wales.

OBJECTIVE: To assess the designs of hypnotherapy on the first and second stages of labour in a large group of pregnant women.

DESIGN: A semi-prospective case control study in which women attending antenatal clinics were invited to undergo hypnotherapy.

SUBJECTS: One hundred twenty-six primigravid (first baby) women with 300 age matched controls, and 136 parous women having their second baby with 300 age matched controls. Only women who had spontaneous deliveries were included.

INTERVENTION: Six sessions of hypnotherapy given by a trained medical hypnotherapist during pregnancy.

OUTCOME MEASURES: Analgesic requirements, duration of first and second stages of labour.

RESULTS: The mean lengths of the first stage of labour in the primigravid women was 6.4 hours after hypnosis and 9.3 hours in the control group ($P<0.0001$); the mean lengths of the second stage were 37 min and 50 min, respectively ($P<0.001$). In the parous women the corresponding values were 5.3 hours and 6.2 hours ($P<0.01$); and 24 and 22 min (*ns*). The use of analgesic agents was significantly reduced ($P<0.001$) in both hypnotized groups compared with their controls.

CONCLUSION: In addition to demonstrating the benefits of hypnotherapy, the study gives some insight into the relative proportions of mechanical and psychological components involved in the longer duration of labour in primigravid women.

Hypnotherapy 81% Successful To Correct Breech Births 69% more successful than standard obstetrical care.

(Archives of Family Medicine 1994; 3:881-887)

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A study conducted at the Department of Psychiatry, University of Vermont College of Medicine, Burlington, USA evaluated the efficacy of hypnotherapy in converting a breech presentation to a vertex presentation. One hundred pregnant women whose fetuses were in breech position at 37 to 40 weeks' gestation were analyzed and a matched comparison group of women with similar obstetrical and socio-demographic parameters derived from databases for other studies from the same time period and geographical areas.

Hypnotherapy was given in the form of suggestions for general relaxation with release of fears and provided whenever it was convenient and possible for the women until they were delivered of the baby or the baby converted to the vertex position.

A successful conversion for the intervention group was scored when the baby spontaneously converted to the vertex position before delivery or if there was a successful external cephalic version. The conversion rate of the women receiving hypnotherapy was compared with a control group who received standard obstetrical care without the opportunity for hypnosis.

The results revealed that eighty-one per cent (81%) of the fetuses in the intervention group converted to vertex presentation compared with forty eight per cent (48%) of those in the control group, demonstrating a considerable [69%] and statistically significant therapeutic effect of the hypnotherapy treatment.

The report concluded that motivated women can be influenced by a skilled hypnotherapist in such a manner that their fetuses have an increased frequency of conversion to vertex presentation.

Mehl LE. Hypnosis and conversion of the breech to the vertex presentation. Arch Fam Med (UNITED STATES) Oct 1994, 3 (10) p881-7

The Abstract of the study:

Hypnosis for Turning Breech Baby

From Archives of Family Medicine, Vol. 3, Oct. 1994 Hypnosis and Conversion of the Breech to the Vertex Presentation Lewis E. Mehl, MD, PhD Dept. of Psychiatry Univ. of Vermont College of Medicine, Burlington

Objective : To evaluate the effectiveness of hypnosis to convert a breech presentation to a vertex presentation.

Design : Prospective case series compared with historical, matched comparison group.

Subjects : One hundred pregnant women whose fetuses were in breech position at 37 to 40 weeks' gestation and a matched comparison group of women with similar obstetrical and sociodemographic parameters derived from databases for other studies from the same time period and geographical areas.

Intervention : The intervention group received hypnosis with suggestions for general relaxation with release of fear and anxiety. While in the hypnotic state women were asked for the reasons why their baby was in the breech presentation. As much hypnosis was provided as was convenient and possible for the women until they were delivered of the baby or the baby converted to the vertex position.

Main Outcome Variables : A successful conversion for the intervention group was scored when the baby spontaneously converted to the vertex position before delivery or successful cephalic version. The conversion rate of the intervention group was compared with the comparison group who received standard obstetrical care without the opportunity for hypnosis.

Results : Eighty-one percent of the fetuses in the intervention group converted to vertex presentation compared with 48% of those in the comparison group. This difference was statistically significant.

Conclusions : Motivated subjects can be influenced by a skilled hypnotherapist in such a manner that their fetuses have a higher incidence of conversion from breech to vertex presentation. Psychophysiological factors may influence the breech presentation and may explain this increased frequency of conversion to vertex presentation.

The Effects of Hypnosis on the Labor Processes and Birth Outcomes of Pregnant Adolescents

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Submitted, revised, February 13, 2001.

From the University of Florida.

Hypnosis has been used in obstetrics for more than a century with little empiric evaluation of the effects of this type of intervention on labor and delivery. We evaluated how childbirth preparation incorporating hypnotic techniques affected the labor processes and birth outcomes of pregnant adolescents. The study included 42 teenaged patients receiving prenatal treatment at a county public health department before their 24th week of pregnancy. They were randomly assigned to either a treatment group receiving a childbirth preparation protocol under hypnosis or a control group receiving supportive counseling. When labor and delivery outcome measures were compared in the 2 groups, significant differences favoring the hypnosis intervention group were found in the number of complicated deliveries, surgical procedures, and length of hospital stay. Larger studies in different populations are needed.

Hypnosis has been used to control pain during labor and delivery for more than a century, but the introduction of chemo-anesthesia and inhalation anesthesia during the late 19th century led to the decline of its use.^{1,2} Recently there has been a resurgence of this technique in obstetrics.³⁻⁷ Hypnotherapy has been found to be effective in providing pain relief,^{8,9} reducing the need for chemical anesthesia,⁸ and reducing anxiety, fear, and pain related to childbirth.^{1,2,7,10,11} Hypnosis has also been helpful in both managing various complications of pregnancy (such as premature labor^{5,12-14}) and reducing the likelihood of premature labor and birth in high-risk patients.¹² It has also been effective in the treatment of hyperemesis gravidarum,¹⁵⁻¹⁶ acute hypertension associated with pregnancy¹⁷ and conversion of breech to vertex presentation.¹⁸

One promising application of hypnosis is in the area of labor and delivery.^{1,5,6,19} The use of hypnosis in preparing the patient for labor and delivery is based on the premise that such preparation reduces anxiety, improves pain tolerance (lowering the need for medication), reduces birth complications, and promotes a rapid recovery process.^{1,2,5} The key aspect of this treatment is involvement of the patient before labor begins, to promote her active participation and sense of control in the labor and delivery process. This is accomplished through educating the patient about this process and teaching her alternate ways to produce hypno-analgesia and anesthesia.^{1,2} Hypnotic preparation thus provides the expectant mother with a sense of control for managing her anxiety and physical discomfort.

Although there have been numerous reports suggesting the value of hypnosis in obstetrics, our study is one of the first to report a randomized controlled evaluation of childbirth preparation incorporating hypnotic techniques on labor processes and birth outcomes.

METHODS

Our subjects were teenage patients (18 years or younger at the time of conception) who entered prenatal treatment with normal pregnancies at a Florida county public health department before the end of their 24th week. The clinic nursing director performed a chart review and identified 47 patients meeting the criteria. These patients were randomly assigned to either the treatment group or the control group. The treatment group received childbirth preparation in self-hypnosis that incorporated information on labor and delivery (the detailed protocol is described in a previous publication¹). The control group received supportive counseling designed to control for interpersonal contact and social support and to provide an opportunity for discussion about pregnancy issues of concern to the patient. Patients in the treatment and control groups had the same number of visits.

We obtained institutional review board approval and informed consent from individual patients. The subjects were told that the study was an attempt to provide support for pregnant adolescents in addition to the routine prenatal care provided by the public health department and that they would be randomly assigned to 1 of the 2 groups, their intervention session would coincide with scheduled clinic appointments and would not interrupt their medical treatment in any way, and their participation was voluntary.

Both groups of patients received the standard prenatal treatment protocol from the medical staff, nurse practitioners, and hospital staff, all of whom were blind to group assignments. All patients were delivered at the local teaching hospital by obstetrics department staff who were blind to the study. The study interventions were begun with individual meetings with patients during regular clinic visits between 20 and 24 weeks' gestation. Continuing clinic visits were scheduled for all patients on a biweekly basis, making the time span of the 4-session experimental conditions approximately 8 weeks. The study counselor (the primary author) provided hypnosis preparation training for the treatment group; a nurse midwife provided the supportive contact with the control group. Both interventions were completed before delivery; no prompting occurred during the labor and delivery process.

The 2 groups of patients were compared on medication use (Pitocin, anesthetic, and postpartum medication), complications and surgical intervention during delivery, and length of hospital stay for mothers and neonatal intensive care unit (NICU) admission for the infants. Complications fell into 36 categories of events (eg, multiple pregnancies, preeclampsia, vacuum-assisted delivery) that were entered in subjects' records by obstetric staff who were unaware of the study. Statistical analysis was based on a simple count of the presence or absence of complications in the medical record by researchers (the researchers were not blinded to the patient's study assignment).

RESULTS

Of the 47 patients, 3 moved out of the geographic area before delivery, and 2 patients (1 in each group) did not complete the research protocol and were not included in the research. Results were thus obtained for 22 patients in the hypnosis group and 20 in the control group, resulting in a total of 42 subjects. A two-tailed Fisher exact analysis at the .05 level was used to test for significance.

Only one patient in the hypnosis group had a hospital stay of more than 2 days compared with 8 patients in the control group ($P=.008$). None of the 22 patients in the hypnosis group experienced surgical intervention compared with 12 of the 20 patients in the control group ($P=.000$). Twelve patients in the hypnosis group experienced complications compared with 17 in the control group ($P=.047$). Although consistently fewer patients in the hypnosis group used anesthesia (10 vs 14), Pitocin (2 vs 6), or postpartum medication (7 vs 11), and fewer had infants admitted to the NICU (1 vs 5), statistical analysis was nonsignificant [Figure 1](#), [Figure 2](#).

DISCUSSION

We focused on the educational preparation of the patient while in hypnosis to create the expectation of a normal labor and delivery, develop a conditioned response of comfort and confidence, and facilitate an increased sense of control in achieving a healthy delivery.

The subjects in the treatment group received a 4-session sequence of standard hypnotic interventions incorporating childbirth preparation information (ie, the hypnoreflexogenous method^{1,2,20}) in which they were instructed in the methods and benefits of focused relaxation and imagery to increase the likelihood of a safe and relatively pain-free delivery. The sessions provided an opportunity to experience and practice hypnotic induction and deep relaxation. The suggestions directed toward the expectant mothers during the hypnotic state focused on the conceptualization of pregnancy and childbirth as a healthy natural process. Suggestions were also given to help the patient respond to possible complications, in the event they might occur.¹ These suggestions were designed to increase the patient's sense of trust in her physician and her confidence in her own ability to manage anxiety and discomfort. Hypnotic inductions also included ego-strengthening techniques and suggestions for a relatively discomfort-free delivery and suggestions for the application of the hypnotic techniques to other stressful periods in their lives. In each session the patients were given the opportunity to ask any questions of concern regarding the method or the pregnancy.

The main limitations of our study are the relatively small number of subjects and the fact that these patients were adolescent women, which affects the generalizability of results.

Future Research

Future research should involve a larger subject pool including adults, have a control group receiving traditional prenatal care with no added intervention, and provide an analysis of cost-saving benefits.

CONCLUSIONS

Our study provides support for the use of hypnosis to aid in preparation of obstetric patients for labor and delivery. The reduction of complications, surgery, and hospital stay show direct medical benefit to mother and child and suggest the potential for a corresponding cost-saving benefit.

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