

Clinical Study: Change in Outlook Towards Birth After a Midwife Led Antenatal Education Programme Versus Hypnoreflexogenous Self-Hypnosis Training for Childbirth

Klinische Studie: Veränderung der mütterlichen Einstellung auf die Geburt durch einen Hebammen-geführten Geburtsvorbereitungskurs im Vergleich mit der hypnoreflexogenen Geburtsvorbereitung

Authors

L. A. Streibert², J. Reinhard¹, J. Yuan², S. Schiermeier³, F. Louwen²

Affiliations

¹ St. Marienkrankenhaus, Frauenklinik, Frankfurt

² Johann Wolfgang Goethe-University Frankfurt am Main, Faculty of Medicine, Department of Obstetrics and Gynaecology, Frankfurt am Main

³ University Witten/Herdecke, Marien-Hospital Witten, Witten

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Correspondence

Priv.-Doz. Dr. med. Joscha Reinhard, MBBS BSc (Hon)
St. Marienkrankenhaus
Frauenklinik
Richard-Wagner-Straße 14
60318 Frankfurt am Main
Joscha.Reinhard@kgu.de

Abstract



Aim: To compare the change of maternal outlook towards birth due to a midwife led antenatal education programme versus hypnoreflexogenous self-hypnosis training for childbirth.

Method: Before beginning of the classes and after the last class maternal perception on birth was evaluated using Osgood semantic differential questionnaire. The Gießen personality score was evaluated once.

Results: 213 patients were enrolled in this study. 155 were in the midwife led education programme and 58 in the self-hypnosis training programme. There was no statistically significant difference between the two groups in regard of participants' characteristics, Gießen personality score and initial Osgood semantic differential scores. After the midwife led course childbirth was emotionally more negatively scored (displeasure, tarnishing, dimension evaluation [$p < 0.05$]), whereas after the hypnosis course childbirth was emotionally more positively evaluated (pleasure, harmony, dimension evaluation [$p < 0.01$] and brightness [$p < 0.05$]).

Summary: In this study hypnoreflexogenous self-hypnosis training resulted in a positive maternal outlook towards childbirth, in comparison to the midwife led course. Further prospective randomised studies are required to test these initial results.

Zusammenfassung



Ziel: Vergleich der Veränderung der mütterlichen Einstellung zur Geburt anhand von Hebammen-geführten Geburtsvorbereitungskursen oder hypnoreflexogenem Training zur Geburtsvorbereitung.

Methode: Zu Beginn und nach Beendigung der Kurse wurde die mütterliche Einstellung zur Geburt unter Zuhilfenahme des Osgood-Ertel-Eindrucksdifferenzials gemessen. Der Gießen-Test zur Persönlichkeitsbeurteilung wurde einmalig angewendet.

Ergebnisse: 213 Frauen waren in die Studie eingeschlossen. 155 davon nahmen an Hebammen-geführten Kursen teil und 58 bekamen hypnoreflexogenes Training. Es waren zu Beginn der Kurse keine statistisch signifikanten Unterschiede feststellbar in Bezug auf die Charakteristiken der Teilnehmerinnen, im Gießen-Test und in den Ergebnissen des Osgood-Ertel-Eindrucksdifferenzials. Nach der Hebammen-geführten Geburtsvorbereitung wurde die Geburt negativer wahrgenommen (Freudlosigkeit, Trübung, Valenzdimension [$p < 0,05$]), während die Geburt nach dem Hypnosetraining emotional positiver bewertet wurde (Freude, Harmonie, Valenzdimension [$p < 0,01$] und Helligkeit [$p < 0,05$]).

Zusammenfassung: Hypnoreflexogenes Selbsthypnosetraining zur Geburtsvorbereitung scheint stärkere und positivere mütterliche emotionale Veränderungen in Bezug auf die Einstellung zur Geburt auszulösen als konventionelle Hebammen-geführte Geburtsvorbereitungskurse. Weitere prospektive randomisierte Studien sind nötig, um diese Ergebnisse zu überprüfen.

Introduction

In most high-income countries birth preparation courses are embedded in current health-care practices [1]. Antenatal education programmes have a wide range of aims, such as ways to cope with pain and stress during childbirth, increasing women's confidence for childbirth [2]. Main reasons for women to take part are to get information on physiological changes during pregnancy, reduce anxiety, and include discussions on various options and complications during childbirth [3]. Only a few studies have assessed the effectiveness of antenatal education programmes. A Cochrane systematic review showed no consistent effect of these courses, but only a tendency towards a better knowledge, confidence, and competence was identified in small studies [4]. Most health professionals recommend the courses [3], even though aims, content and processes of antenatal education vary considerably [5]. Evaluation of antenatal courses is difficult since widely adopted standards or guidelines are missing [5,6].

Artieta-Pinedo et al. [7] identified decreased anxiety in women attending antenatal education compared with non-attenders. Similarly, Paz-Pascuale et al. [8] also found decreased anxiety in women who attended courses compared to women not attending.

Hypnosis has been used in various clinical settings including childbirth [9–14] and external cephalic version [15,16] and the fear of patients prior to surgery has also been reduced using hypnosis [17,18]. Hypnosis may have a positive influence on maternal and neonatal outcomes, such as labour pain, duration of birth, complications and postpartum depression, but recent randomised controlled trials did not show an effect [19–26].

The overall aim of this study was to investigate the change in outlook towards birth after conventional preparation courses in comparison to hypnoreflexogenous self-hypnosis. The change of the maternal emotional state was evaluated using the Osgood semantic differential score.

Materials and Methods

This study is a cohort study of pregnant women, who freely chose either midwife led antenatal birth preparation classes or hypnoreflexogenous self-hypnosis training for childbirth October 2009 to January 2010.

Course design

The midwife led classes were done by three different senior midwives (work experience over 10 years [midwife A, B & C]). The maximum number of women allowed in the birth preparation group was 12 women. A sub-group analysis was also carried out between the midwife groups. The 10 times 2-hour-sessions had mainly informational content concerning the pregnancy, the birth and the newborn child. As well as the communication with other expectant mothers, the course units comprised exercises for body perception and breathing exercises as coping techniques for labour. The hypnoreflexogenous self-hypnosis training was carried out by a doctor qualified in hypnosis (JR). The maximum number of women allowed in the hypnosis course was 8 women. In four 2-hour-sessions women in their last trimester of pregnancy were taught self-hypnosis techniques. In hypnotic trance the birthing process was imagined. This method is based on three principles:

1. negative conditioned terms were substituted through neutral terms,
 2. the level of tension is reduced through hypnotic trance and
 3. the self-confidence and the reliance of the expectant mother is reinforced [10].
- After the second session a CD with the taught hypnotherapy intervention was given for home use.

Participants

Women were eligible to take part in the study if they were pregnant, German-speaking, at least 18-years-old and for the self-hypnosis course the women had to be above 26th gestational age. Participants were included in the trial after return of a completed baseline questionnaire and provision of consent. Ethical approval was given by the local ethics committee.

Outcome and data collection

The Osgood semantic differential score [27–29] is a validated questionnaire, which has been modified by Ertel and can be used to quantify emotional changes [30–32]. On a list of bipolar scales the participants had to score from -3 to +3 with a middle or neutral point. For measurement of attitudes the semantic differential is nowadays one of the most widely used scales. Three recurrent attitudes have been identified: Firstly, the “good – bad” adjective defines the evaluation. Secondly, the potency loads highest on the adjective pair “strong – weak”. Thirdly, the activity factor defines the adjective pair “active – passive”. These dimensions were found to be cross-cultural [29–31]. Before the first class and after the last course unit the Osgood semantic differential questionnaire was evaluated for the four words: “birth, baby, partner, hypnosis”. The word birth was chosen due to the fact that the birth preparation course should positively change the view towards birth. Similarly the word baby might be changed due to the course. The word partner was chosen as a reference since this would be unlikely to be changed due to the intervention. Hypnosis was chosen due to the fact that this was one of the interventions evaluated in this study. Using the Gießen questionnaire [33] a screening for psychological disorders was carried out. This also enabled us to evaluate the different cohort groups for personality differences. The dimension activity, evaluation and potency are the mean value of all factors in that group, respectfully (see **Fig. 1 a to c**).

Statistical analysis

The data analysis used SPSS (Version 21, IBM© SPSS© Statistics). Differences between groups were tested by a non-parametric Mann-Whitney test. Two-sided p-values were reported for all tests and a value <0.05 was regarded as significant.

Ethics approval

Ethics approval was granted by the local university of Witten/Herdecke ethics committee.

Results

213 participants were enrolled in this study. 155 had midwife led education programme and 58 had self-hypnosis training. Due to the small number of participants for midwife group C (n = 8) no subgroup analysis was carried out. There was no statistically significant difference between the two groups in regard of participants' characteristics (age, school education level, university

master degree, parity, pregnancy complications, premature labour contractions (Table 1), Gießen personality score (Table 1) and initial Osgood semantic differential scores. Similarly, no difference was identified in the two midwife led education programmes (midwife A and B) (Table 1).

Midwife courses

Overall the participants of the midwife led courses ($n = 155$) had a statistically significant change for the word “birth” only for the dimension evaluation (more negative outlook; $p < 0.05$; Fig. 1). For the word “baby” the dimension activity ($p < 0.01$), evaluation ($p < 0.05$) and potency ($p < 0.05$) were statistically significant differences detected (Fig. 1). Similarly, for the word “partner” the dimension activity ($p < 0.01$) and potency ($p < 0.05$) were different. No difference was found for the word “hypnosis” (Fig. 1). There were no statistically significant differences on the semantic differential scores of midwife A and B. For the word “birth” the midwife A group ($n = 113$) had a statistically significant change towards arousal ($p < 0.01$), displeasure ($p < 0.05$) and tarnishing ($p < 0.05$). Group A had a positive change (bad outlook into birth) in dimension evaluation ($p < 0.05$) and indulgence ($p < 0.05$) (Fig. 2). For “birth” the midwife B group ($n = 34$) only had one statistically significant change towards quickness ($p < 0.05$; Fig. 2).

Hypnosis courses

For the hypnosis group all dimensions were highly statistically significant different ($p < 0.01$) apart from the word “baby” the dimension potency and for the word “hypnosis” the dimension activity (Fig. 1). The hypnosis CD was listened to at least twice a week (mean $2.5 \pm$ standard deviation 1.8).

For the hypnosis group ($n = 58$) highly significant changes ($p < 0.01$) were identified towards movement, noise, arousal, negative change (more activity) in dimension activity, pleasure, harmony, negative change (i.e. positive outlook into birth) in dimension evaluation, emphasis, fortitude, strength, negative change (i.e. positive outlook into birth) in dimension potency for the word “birth”. Similarly, in the hypnosis group for the scales allegro and brightness statistically significant changes were seen ($p < 0.05$; Fig. 2).

Discussion

For the first time this study demonstrates the change in emotional outlook towards birth in women after midwife led preparation courses and hypnoreflexogenous self-hypnosis training using Osgood semantic differential score. Even though the midwife led courses had a longer duration, the women’s emotional change was less marked in comparison to the hypnosis course. For the midwife courses the emotional change in regard to “birth” is in the wrong direction. The women had a statistically significant change towards the unwanted polarity (displeasure, tarnishing, dimension evaluation; $p < 0.05$), whereas in the hypnosis group the participants had a change towards the wanted polarity (pleasure, harmony, dimension evaluation ($p < 0.01$ and brightness $p < 0.05$)). These differences cannot be explained by differences in personality dimensions in the two groups (Gießen test $p > 0.05$). Between the two largest midwife course groups there also was no difference found in the polarity direction. The natural birth approach aims to decrease muscle tension, which is induced by fear and leads to labour pains [1,34]. Training in relaxation and

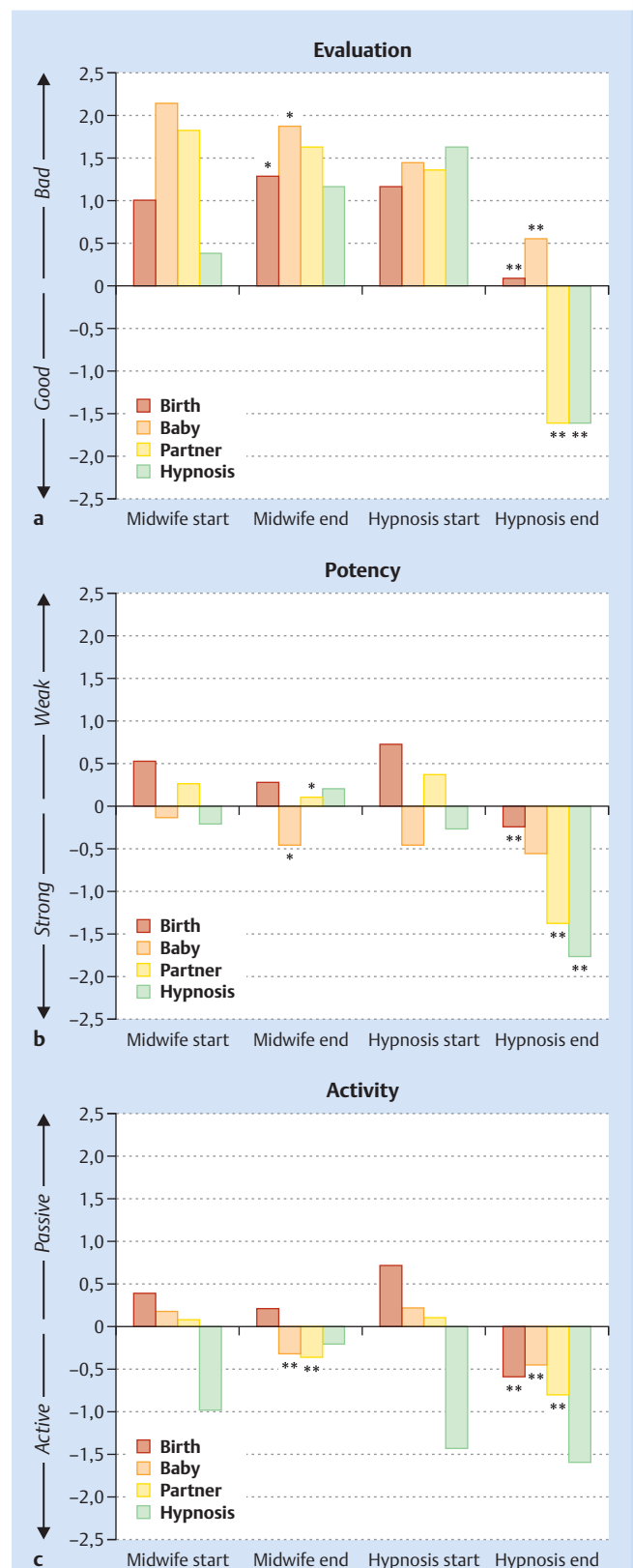


Fig. 1 a to c Osgood semantic differential dimensions before and after the course for the words “birth, baby, partner and hypnosis” (as coded in different colours) for the midwife led education programme ($n = 155$) and hypnoreflexogenous self-hypnosis training ($n = 58$) ($* p < 0.05$; $** p = 0.01$): **a** evaluation (positive values → “bad”; negative values → “good”); **b** potency (positive values → “weak”; negative values → “strong”); **c** activity (positive values → “passive”; negative values → “active”).

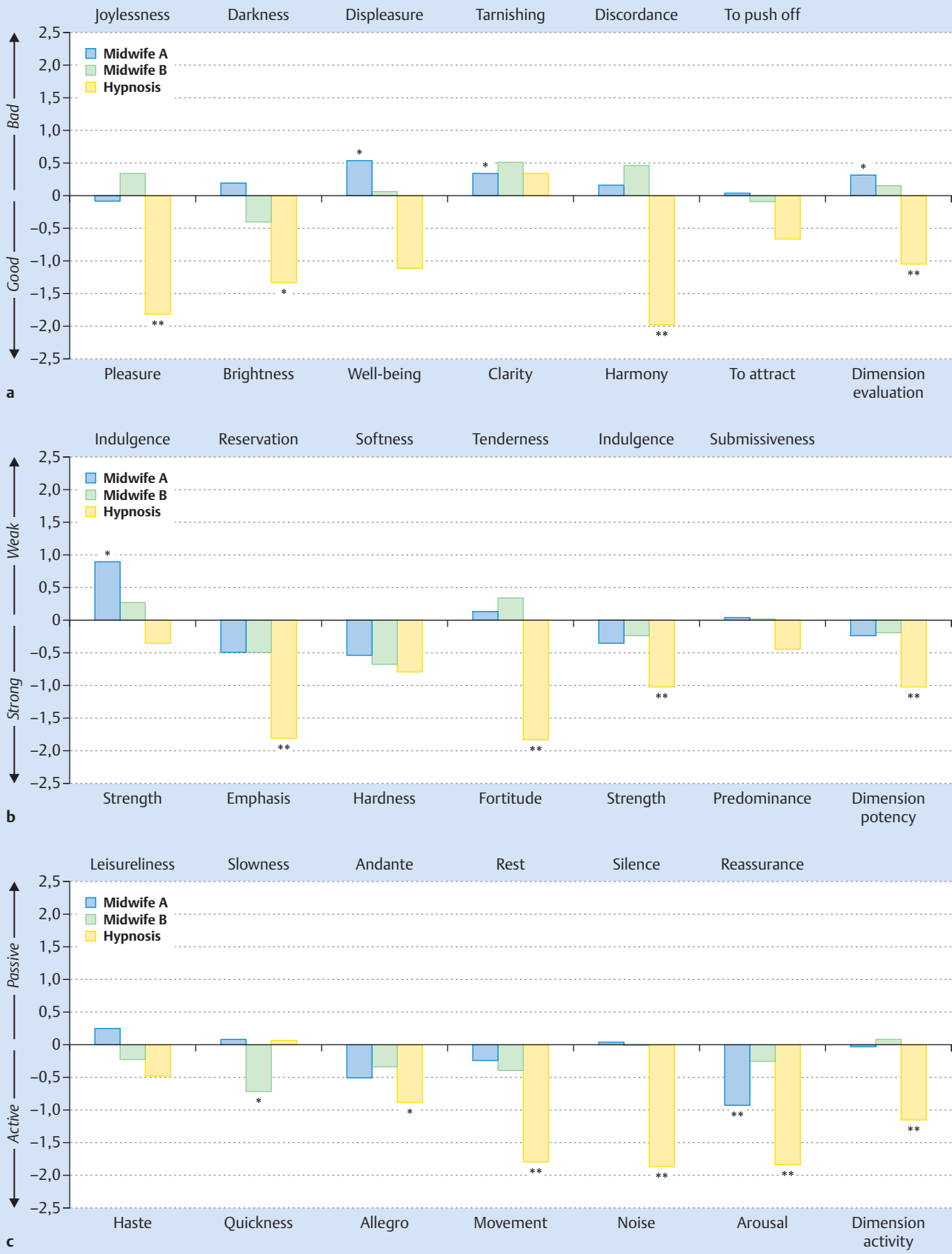


Fig. 2a to c Change of Osgood semantic differential scales word “birth” (after the course score – at the beginning) for midwife A (n = 113), midwife B (n = 34) and hypnosis (n = 58): **a** dimension evaluation, **b** dimension potency and **c** dimension activity (* p < 0.05; ** p < 0.01).

Table 1 Baseline characteristics of the study population for midwife A (n = 113), midwife B (n = 34) and hypnosis group (n = 58) (n. s. = no statistically significant difference, $p > 0.05$).

	Midwife A	Midwife B	Hypnosis	p-value
Maternal age (years)				
▶ ≤ 25	16.1	11.8	7.4	n. s.
▶ 26–29	24.1	23.5	22.2	n. s.
▶ 30–35	39.3	29.4	44.4	n. s.
▶ ≥ 36	20.5	35.3	25.9	n. s.
School education				
▶ A-levels	61.3	57.7	62.5	n. s.
▶ Technical diploma	21.3	30.8	20.8	n. s.
▶ Secondary modern school	17.5	11.5	16.7	n. s.
▶ University (master) degree	40.5	34.6	41.3	n. s.
Born in Germany	93.8	100	83.7	n. s.
Expecting first child	70.2	66.7	68.8	n. s.
At least one (missed) abortion	8.3	11.1	25	n. s.
Pregnancy without complications	94.0	88.9	89.5	n. s.
Premature labour contractions	20.2	23.1	15.6	n. s.
Premature labour before 34th gestation age	52.9	50	100	n. s.
Gießen test				
▶ Social resonance	4.79 ± 0.77	4.65 ± 0.67	4.42 ± 1.02	n. s.
▶ Dominance	4.29 ± 0.71	4.23 ± 0.73	4.27 ± 0.72	n. s.
▶ Control	4.53 ± 0.66	4.03 ± 0.76	4.13 ± 0.78	n. s.
▶ Prevailing mood	4.19 ± 0.91	4.07 ± 0.81	4.22 ± 0.66	n. s.
▶ Penetrability	3.48 ± 0.85	3.28 ± 0.82	3.77 ± 1.16	n. s.
▶ Social ability	3.01 ± 0.78	3.07 ± 0.67	3.63 ± 1.36	n. s.

education of the physiological process of labour is intended to reduce fear and tension and as a consequence mothers should experience less labour pain [1]. Lamaze [35] introduced relaxation as a conditioned response to labour contractions, which includes various breathing techniques to interfere with the pain signal transmission from the uterus to the brain and improve oxygenation.

Emotional reactions have also been shown to influence pain experience [24, 36]. High levels of fear, anxiety and emotional stress are important factors in a woman's experience of childbirth pain [24, 37, 38], which may result in postpartum depression, post-traumatic stress syndrome, future caesarean section or a reluctance to have more children [24, 39–42]. These study results demonstrate that the outlook towards birth can be influenced by a midwife and hypnosis course. A higher impact has been seen during the hypnosis course, where the women's outlook onto birth was statistically significantly positive (dimension evaluation; $p < 0.01$), stronger (dimension potency $p < 0.01$) and more active (dimension activity; $p < 0.01$) after completion of the hypnosis course. For the midwife led courses only the dimension potency was changed ($p < 0.05$), however the women's Osgood semantic differential score was worse (i.e. towards "bad"). Further investigations are required as to why the midwife led courses showed negative outlook towards birth. These study results are consistent with previous study on hypnoreflexogenous birth preparation in the perception of birth and quicker convalescence time [10].

As expected, there was a large positive change in the women's emotional score of "hypnosis" in the hypnosis group (pleasure, harmony, dimension evaluation [$p < 0.01$] and brightness [$p < 0.05$]), whereas in the midwife led courses no differences were detected in all factors. Nowadays there are still large reservations and false beliefs with regard to hypnotherapy even

though hypnotherapy has been certified as an effective psychotherapy in Germany.

The limitation of this study lies in the factor that the study design is only a prospective cohort study, which tried to exclude a personality bias of birth preparation course via the Gießen personality test. Furthermore the differences in midwife course sizes have been evaluated on the ground whether there are any statistically significant differences between the groups. Obviously, these results do not demonstrate that the women do have less birth pain during labour and only show the outlook i.e. perception before birth. Further prospective randomised controlled trials are required to test these initial findings and evaluate birth outcomes.

Conclusion

Hypnoreflexogenous self-hypnosis training seems to induce larger and more positive maternal emotional changes towards the outlook to birth in comparison to midwife led courses if women choose self-hypnosis deliberately. Further prospective randomised studies are required to test these initial results.

Contribution to Authorship

JR designed the trial. LAS was responsible for the data collection. JR and LAS performed the data analysis. JR wrote the first draft. All authors edited the manuscript and agreed on the final version. JR is guarantor.

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Conflict of Interest



The authors stated that there are no conflicts of interest regarding the publication of this article.

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