



EFFECT OF ANTENATAL SELF-EFFICACY ENHANCING EDUCATION PROGRAM IN IMPROVING INTRAPARTUM PERFORMANCE OF LABORING WOMEN

Obstetrics & Gynaecology

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ABSTRACT

Background Childbirth is a crucial natural phenomenon in the life of a woman. But it is always associated with fear and worries. Awareness about the labor and birth process, psychosocial support and readiness to cope the labor pains can improve the behaviour of women. It also help in decision making resulting in better outcome of pregnancy. Self-efficacy could be a tool to overcome with this stressful situation. Bandura et al (1997) reported relations between maternal perinatal self- efficacy and birth outcome¹. Poor maternal self-efficacy leads to fear of childbirth that is associated with increase in cesarean deliveries². Self- efficacy is the belief in one's ability to succeed in achieving an outcome or reaching a goal. **Method** A prospective experimental study was carried out in the Department of Obstetrics and Gynecology, Jawaharlal Nehru Medical College, Aligarh Muslim University during the period of December 2020 to October 2022 after ethical clearance from Institutional Ethical Committee. 120 pregnant women were included in the study divided into intervention and control group by computer generated random table. Pre-intervention assessment of self efficacy was done using a pre-tested tool at first antenatal visit. Then women in intervention group had undergone a Self-Efficacy Enhancing Education Program (SEEEP) expecting that she could better cope with the stress and pain during childbirth. This program consisted of two interactive educational sessions lasting 30 to 45 minutes each, given 2-4 week apart between 32-38 weeks of pregnancy. In control group, women received only routine antenatal care with routine counselling. Post -intervention assessment was done within 24 to 48 hours of delivery in both groups. **Result** Pre intervention self-efficacy mean score was 7.842.064 in intervention group and 5.321.29 in control group. Post-intervention self-efficacy score in intervention group was 16.143.833 as compared to 7.301.432 in control group, the difference being

KEYWORDS

INTRODUCTION

Pregnancy and subsequent childbirth are perceived as a matter of life and death in resource limited-settings. Childbirth fear is inevitable in pregnant women as they embark on a perceived death-defying journey to motherhood.

Antenatal education is widely accepted as a positive approach preparing pregnant women for the experience of childbirth. Main source of education in India regarding labor was information given by relatives in joint family but nowadays increasing trend of nuclear family has restricted this source. In the early 20th century, women were normally giving birth in the comfort and familiarity of their homes, but maternal and infant mortality rates were high. Traditional nature of childbirth education was emphasising the transmission of information about childbirth rather than making an effort to assist pregnant women in identifying and enhancing their own coping mechanisms and building confidence in preparation for childbirth. Advances in obstetric technology and maternal-foetal medicine shifted birth from the home to the hospital. The likelihood for medical intervention during pregnancy and childbirth has subsequently increased, requiring more childbirth education and preparation. Now a days women began to question the safety and necessity of obstetric interventions, anaesthesia and analgesics and routine hospital procedures. Women currently are demanding more knowledge about and control over, their childbirth experience.

In addition, women are having fewer children and consequently spending more time and effort in preparation for parenting through attending at various childbirth education classes. In the 1930s, a British obstetrician, Dr. Grantley Dick-Read recognized the need to assist women through childbirth without the use of medication. He observed that women who anticipated the pain of childbirth were more fearful. He surmised that resultant tension interfered with the labour process had ultimately increased their pain. Dick-Read described his fear-tension-pain syndrome in his book, *Childbirth Without Fear*, published in 1944. A framework for a particular educational intervention that enables people to develop their self-care behaviours provided by the theory of self-efficacy^{3,4}.

According to Beiranvand et al. (2017)⁵ primigravida women are more likely to fear childbirth and may have more problematic pregnancies than women who have already given birth. It is important to note that early and late period of pregnancy have higher level of birthing dread, which signifies that prompt support of primigravid women throughout

pregnancy is vital to maintain their psychological well-being and facilitate childbirth preparation. According to Schwartz et al (2015)⁶ several efficacy-enhancing interventions can change the psychosocial element of childbirth self- efficacy. Pain during childbirth presents a unique phenomenon due to its association with a normal physiological process.

The multidimensional nature of childbirth encompasses intense physical, emotional, psychological and spiritual elements that may be critical to a woman's experience of this major life event⁷. Majority of pregnant women express the desire to birth without the use of pharmacological pain relief. This has led to the promotion of 'natural childbirth' to diminish the association of pain experienced during childbirth as pathological ('not normal') and therefore requiring 'treatment'.

Therefore, providing efficient and secure analgesia during labour has continued to be difficult. James Young Simpson 1853 is credited with launching the modern era of obstetric anaesthesia when he gave ether to a pregnant woman with a malformed pelvis. Criticism of his "etherization of labour" thesis was intense! The controversy persisted in the religious community until 1853, when John Snow gave chloroform to Britain's Queen Victoria as she gave birth to her eighth child, Prince Leopold. This study intended 1. to assess the increase in Self Efficacy knowledge score in the intervention group before and after the educational session and to compare with the control group, 2. To compare childbirth experience in intervention and control group and 3. to evaluate the effect of maternal self-efficacy in deciding mode of delivery, requirement of anaesthesia or analgesia and birth outcome.

MATERIAL AND METHODS:

A prospective experimental study was carried out in the antenatal clinic of Department of Obstetrics and Gynecology, Jawaharlal Nehru Medical College, Aligarh Muslim University during the period of December 2020 to October 2022 after ethical clearance.

Sample size was calculated by using OpenEpi, Version 3, open source calculator using mean difference between coping behaviour in control group (S.D. as 44.99 +/- 0.91) and experimental group (S.D. 48.94 +/- 7.9) taken from a study by Wan-Yim et al. For a study with 80% power and 5% alpha-error, a minimum of 32 pregnant women were required in each group. We invited 120 pregnant females to participate in the study and finally analysed 50 pregnant women in each group. Recruitment of study participants has been shown in fig 1

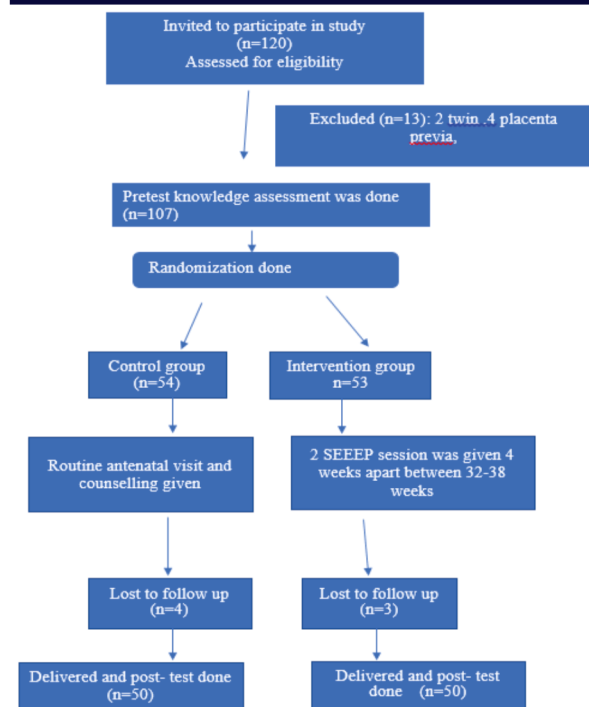


Figure 1. Flowchart showing recruitment of study participants

Recruitment of study subjects and pre-test assessment

Pregnant women coming for antenatal visit for first time, till 28 weeks of gestation, aged more than 18 years, primigravida with singleton pregnancy, mentally sound and willing to participate in the study were included in the study. Those not giving consent, women planned for elective caesarean, women with any psychiatric or psychological illness and those on anti-psychotic drugs were excluded.

An informed written consent was taken from women willing to participate in the study. The recruited women were subjected to detailed history of current pregnancy, obstetric history, medical history, past history and physical examination to rule out any exclusion criteria. All pregnant women included in the study were interviewed for a Pre-test assessment of knowledge about labour and its danger signs, which was in the form of questionnaire.

Intervention

They were divided into intervention and control group by randomisation using random numbers generated from computer. Pregnant women of intervention group were imparted a Self-Efficacy Enhancing Education Program (SEEEP) for enabling them to better cope with the stress and pain during childbirth. This SEEP program was consisting of two 30 to 45 minutes interactive educational sessions 2-4 week apart between 32-38 weeks of pregnancy.

In SEEEP program education was provided about following points –

1. Knowledge about labor, nature of labor pains, normal changes during labor. They were explained about - What is labour, characteristics of labour pains, duration and stages of labour, danger signs of labour.
2. They were informed that labor is a natural process, they were advised to remain mobile, to take plenty of oral fluid and encouraged to pass urine frequently.
3. She can opt for non-pharmacological methods to reduce pain. She might benefit from constant support during labor, touch and massaging back, water baths, intradermal sterile water injections, acupuncture, hypnosis and deep breathing. She was informed that this program would enable her to go through labor without the need of any pharmacological methods but if she was not coping up she might request for intravenous opioids like Pethidine and Tramadol or Regional analgesia.
4. Role of women in labor was explained. She was told about all the different positions during delivery and she could try any position in active phase. She was also trained to follow the instruction of health care professionals and active pushing with closed glottis during delivery.

5. Role of birth companion was explained to continue birth support, rubbing back of pregnant women in pain phase and to look after hygiene and oral intake of women.

During the first session educational information was given to women, and demonstration of coping behaviour was done including breathing and relaxation exercise, distraction and cognitive restructuring of pain. Videos of coping strategies were provided to these women. On second session demonstration of the taught coping skills was done by the women and she was corrected and reinforced with correct skills if found incorrect or incomplete. She was advised to rehearse the taught coping skills at home between and after session.

Women in control group received usual antenatal care which included a regular physical examination and regular counselling about danger signs of labour and onset of labour.

Post-test or post-intervention self-efficacy score assessment

Women of both the groups were assessed for childbirth behaviour during labor and outcome of labor. They were interviewed after delivery within 24 hours for post-test assessment using same questionnaire as pre-test.

Visual Analogue Scale for pain and anxiety during labor-

The Visual analogue scale is an accurate and sensitive tool for the assessment of the level of anxiety and pain during labor. Women self-report anxiety and pain. It was measured using 10cm Visual Analogue Scale with verbal anchors ranging from one end of the scale (0= no pain/no anxiety) to the other end (10=unbearable pain/extremely anxious).

Childbirth coping behavior score was measured on likert scale never to often (0 to 4, 0=women did not use any method, 1=women used any one method, 2= women had used any two methods, 3=women often had used 3 ways of coping behaviour, 4=women always used maximum ways to cope up). Methods used by women for coping behaviour included -a) use of breathing exercises by women to decrease pain, b). use of distraction by women to decrease anxiety, c0. Positive thinking during labor d). Taking support of birth companion during labor (rubbing back during labour pain, assisting in mobilization).

Statistical Analysis:

All data were entered into MS excel and cleaned and then imported to IBM-SPSS version 23.0 for analysis. Descriptive statistic was applied to show frequency of categorical data and meanSD for continuous data. Chi square test was used for inferential statistics for categorical data. Independent sample t test was applied to study difference between means for continuous data. P value<0.05 was considered statistically significant.

RESULT

Baseline socio-demographic characteristics of the two groups have been shown in table 1. There were no significant differences between the two groups except for education status of women. Maximum number of women among intervention group were educated up to 10th standard (44%) followed by 8th standard (32%) whereas in control group maximum number of women were educated up to 8th standard (58%) followed by 10th standard (28%).

Table 1. Socio demographic characteristic of intervention and control group

	Intervention N=50(%)	Control N=50(%)	
Education status			
8th standard	32%	58%	
10th	44%	28%	
12th	16%	8%	
Graduate	8%	6%	
Age (mean)	22.242.90	23.202.70	0.657
Occupation			
Housewife	92	82	.137
Working	8	18	
Partner's education status			
illiterate	16	4	.102

Upto 5	60	52	
Upto 8	10	26	
Upto 12	12	16	
graduate	2	2	
Socioeconomic status			
Upper class	18	12	.267
Middle class	50	62	
Lower middle class	22	24	
Lower class	10	2	

intervention and control group self efficacy score was significant

As shown in table 2 the difference in pre test self efficacy score and post test self efficacy score

Table 2: Intervention and control group mean self-efficacy score

Study variable	Intervention group (N=50)	Control group (N=50)	P value
	MeanS.D	MeanS.D	
Pre intervention self efficacy score	7.842.064	5.321.29	.000*
Post intervention self efficacy	16.143.833	7.301.432	.000*
Pre-post difference in self efficacy score	105.86%	37.2%	0.000**

*Independent sample T test applied

** Paired T test applied

As shown in table 3, mean anxiety score was significantly higher ($p<0.005$) in control group women (6.501.40) as compared to intervention group (5.381.39) which means women who received intervention knew and used various methods to overcome anxiety. Coping behaviour scores were significantly higher among intervention group (2.90.614) women as compared to control group (2.40.571) ($p<0.005$). Higher proportion of women of control group (82%) than in intervention (74%) demanded analgesia during delivery but this difference was not statistically significant ($p=0.334$). 48% women of control group and 30% in intervention group lost their control and didn't follow the command of health care professionals. This difference was not statistically significant. 62% Women in control group 48% in intervention group demanded caesarean section.

Table 3: Level of anxiety, pain perception, coping behaviour and mode of delivery in Intervention and control group

Study variable	Intervention group (N=50) MeanS.D	Control group (N=50) MeanS.D	P-value (independent T test)
Pain perceived	6.541.264	5.901.233	.000
Anxiety	5.381.39	6.501.40	.000
Coping behaviour	2.90.614	2.40.571	.000
Mode of delivery	1.36.49	1.363.88.49	1.000

Independent sample T test applied

DISCUSSION

Self efficacy knowledge score was increased after undergoing through educational programme in intervention group (mean 16.143.833) as compared to control group (7.301.432). Total percentage change in knowledge in intervention group is 105.86% whereas in control group is 37.21%. Similar study result was found by *Mukhondya et al(2020)* where percentage rise in knowledge score of intervention group was 51.19% as compared to control group 0.0528% this difference was statistically significant ($p=0.001$). Similar results were observed by *Vasanthi R M et al (2019)*, in their study experimental group women had high level of self-efficacy (95.1%) as compared to control group.

Present study showed mean pain perception was higher in intervention group(mean 6.541.264) as compared to control group (5.901.233) there was no relation in pain perception of trained group and control group by using VAS scale for pain. This is in accordance with the study by *Parastoo Abbasi et al(2020)* who found no significant difference between intervention and control group in terms of labour pain intensity($p>0.05$). While *Mozghan Firouzbakht et al(2013)* found

that pain perception among the trained women (86.0818.37) was lesser as compared to control group(90.4416.64) but anxiety score was higher in control similar to our study, mean anxiety score in control group (6.501.40) as compared to intervention group(5.381.39).

We found that Coping behaviour mean score was higher in intervention group (2.90.614) as compared to control group (2.40.571). *Wan -Yim Ip et al(2009)* also used coping behaviour in their study and found that experimental group women had higher level of coping behaviour (48.947.9) than in control group (44.990.91) ($p=0.001$).

Among control group 82% women requested for analgesia also in control group 74% women requested for analgesia. *A. Ricchi et al(2020)* found that in 76.0% women in control group couldn't bear pain and demanded for analgesia also in intervention group epidural analgesia was given to 54.5%. *Slade et al(2000)* found in their study that women who had greater self-efficacy preferred non pharmacological pain relieving methods than epidural analgesia. Maximum percentage of people who lost their control belong to control group (48%) whereas in intervention group only 30% people lost their control. Also *Lyberg, Severinsson et al(2010)* described in their study that women who never attended any educational classes of efficacy enhancing programme experienced no turning back point as they have to undergo labour and delivery process.

Maximum percentage of people who demanded caesarean belong to control group (62%) whereas in intervention group only (48%) people demanded caesarean. *Taheri et al (2013)* found that 27.7% caesareans were done in control group for maternal request although, lesser women undergone caesarean in intervention group 9.5% for maternal request. *Faisal et al(2014)* found in their study that women demand for caesarean without any medical indication.

CONCLUSION

There is a lot of focus on providing health care during antenatal period and delivery but still there is a long way to incorporate educational program for women to cope with pain, anxiety of labor and the fear of child birth. Because of unbearable pain during labor, women are demanding cesarean delivery over normal vaginal delivery as an emergency exit. Unnecessary high cesarean rate has led to financial burden on health care system and increased maternal morbidity and mortality.

The women with fear of childbirth are in need of support that helped them to express and integrate their feelings, experiences and expectations during childbirth and postpartum period. Woman's childbirth self-efficacy appears to influence antepartum, intrapartum and postpartum events which identifies the possibility for interventions that can positively influence the outcome.

In present study we tried to enhance women's self-efficacy through educational program in exploring to cope with pain and anxiety during labor however the pain perception was not changed by education. It is imperative that during pregnancy education about pregnancy, delivery and the means of managing labor pain must be taught that will help women to experience a pleasant delivery.

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