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ORIGINAL ARTICLE

Impact of Prenatal Intervention package to promote the vaginal delivery

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ABSTRACT

Prenatal stress can result in low-birth-weight baby and preterm birth, among other complications. Fear & anxiety of labour pain is contributing to India's rising rates of caesarean deliveries (17.2% in 2016 to 21.5% in 2021). Psychological support may help mitigate this trend. Objective of the study was to assess the pre-intervention level of Labour Anxiety, fear & mode of Childbirth preferences among the Experimental & control groups. Also assessed post-intervention level of Labour Anxiety, fear & mode of Childbirth preferences in experimental group. A quasi-experimental study in Waghodia Taluka, Gujarat, involved 40 pregnant women (20 experimental, 20 control). The experimental group received a two-hour prenatal intervention package aimed at reducing labor anxiety and promoting vaginal birth. Data were collected through instruments that included a demographic variables questionnaire, a Likert scale for assessing fear and anxiety & a childbirth mode preference assessment, Labor fear dropped from 35% to 0%, while mild anxiety increased from 25% to 100% (fear: t=4.842, p<0.001; anxiety: t=5.710, p<0.001). Vaginal birth preference rose from 25% to 70%, and 45% have normal deliveries versus 35% in the control group. The intervention improved psychological resilience and birth experiences, highlighting its effectiveness in reducing elective C-sections. Prenatal intervention significantly eased labor fear and anxiety & increasing vaginal birth preference, these findings emphasize the need for structured psychological support during pregnancy to enhance maternal experiences and promote healthier childbirth experiences.

Keywords: *Impact, Prenatal Intervention Packages, Vaginal Delivery*

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INTRODUCTION

According to data from 2016, 17.2% of all births in India were C-sections; by 2021, that number had increased to 21.5%. When medically justified, elective caesarean sections (C-sections) can save the lives of both mother and child. However, when they are not strictly required, they can result in several short- and long-term negative health outcomes for both women and newborns, such as maternal infections, uterine hemorrhage, infant respiratory distress, and hypoglycaemia.[1] Based on provisional data from the CDC, the Nationwide C-section delivery rate rose to 32.4% in 2023, an increase from 32.1% in 2022. This marks the highest rate since 2013 and represents the fourth consecutive annual increase following a general decline from 2009 to 2019. Every woman's experience of giving birth is different and influenced by her social upbringing. Although giving birth can be a joyful experience, it can also be accompanied by anxiety and fear. The term "childbirth fear" describes the uneasiness and anxiety associated with pregnancy and the approaching delivery. It covers several issues, such as perceived inadequacy in handling the birthing process, loss of control during labor, Pain, difficulties, and fear of pain.[2] Pregnancy & childbirth a stages in women's lives when they need maximum support and help to overcome the fear and anxiety of the childbirth process. In 90% of cases, women have prenatal stress & anxiety due to the lack of Knowledge & skills about the Pregnancy & childbirth process. Fear, anxiety & stress during pregnancy lead to the secretion of stress hormones, which can lead to preterm birth, lack of labour progress, preterm delivery, low birth weight baby, fetal hypoxia & postnatal complications.[3] The

prevention of mortality and difficulties during pregnancy and childbirth is greatly aided by women's access to all health services, as well as by raising awareness through education and counselling. Promoting prenatal education and skills helps moms become more healthy and ready for delivery.[4] Over 90% of women have gone through the pain and discomfort of delivery at least once in their lives, and the majority of them believe it is stressful and unbearable. Because of this mindset, women are choosing caesarean sections without taking the risks.[5]

MATERIAL AND METHODS

The research approach used in this study is the Quantitative approach. A quasi-experimental, pre-test-post-test control group design was used. The study was conducted in selected villages of Waghodia Taluka, Vadodara, Gujarat. 40 samples were selected using a convenient non-probability sampling technique; 20 in the experimental and 20 in the control groups were selected. Ethical approval for this study was obtained from the Parul University Ethical Committee, & Written informed consent was obtained from all participants prior to inclusion in the study. The tools used to gather data were a demographic variables questionnaire, a Likert scale of fear & Anxiety, & Childbirth mode preference. The experimental group will get prenatal intervention for 2 hours. Prenatal intervention was not given to the control group. Post-test data will be assessed from both groups of Labour fear & anxiety & Childbirth mode preference in the experimental group after giving the intervention & in a control group without Intervention.

RESULT

In a study of 40 pregnant mothers (20 experimental and 20 control), the experimental group showed significant improvements post-intervention, with labor fear dropping from 35% to 0% and mild anxiety rising from 25% to 100, These changes were validated by statistical analysis (anxiety: t=5.710, p<0.001; fear: t=4.842, p<0.001). Furthermore, the percentage of women who preferred vaginal birth rose from 25% to 70% compared to 35% in the control group. Anxiety was associated with occupation and weight, whereas pre-test labour fear was associated with education, occupation, income, and prenatal visits. In summary, the intervention successfully decreased anxiety and fear of labour, which increased the desire for vaginal delivery. These findings emphasise the significance of providing psychological aid throughout pregnancy and suggest that Prenatal interventions may significantly enhance the experiences of mothers and encourage happier and safer deliveries.

Table 1: Frequency and percentage distribution of the Socio-demographic variables in the Experimental and control Groups N=40

S.No	Socio-Demographic variables	Experimental group (n=20)		Control Group (n=20)	
		f	%	f	%
1	Age in years				
	a. 18-23	8	40	6	30
	b. 24-29	7	35	8	40
	c. 30-35	3	15	4	20
	d. More than 36	2	10	2	10
2	Level of Education				
	a. No formal education	6	30	4	20
	b. Primary education	6	30	6	30
	c. Secondary education	3	15	5	25
	d. Graduation and above	5	25	5	25
3	Type of occupation/ physical activity				
	a. Housewife	14	70	13	65
	b. Sedentary or passive or job activity	4	10	6	30
	c. Heavy physical job or labor work	2	10	1	5
4	Type of family				
	a. Nuclear family	9	45	3	15
	b. Joint family	11	55	14	70
	c. Extended family	0	0	3	15

5	Have you undergone abortion in past a. Yes b. No	 4 16	 20 80	 5 15	 25 75
6	Present pregnancy month a. 7th b. 8th c. 9th	 7 4 9	 35 20 45	 5 9 6	 25 45 30
7	Antenatal visit a. Regular b. Irregular c. No visit	 9 4 7	 45 20 35	 14 4 2	 70 20 10
8	Height in CM a. Less than 140 cm b. 141 – 150 cm c. 151 – 160 cm d. More than 160 cm	 3 8 9 0	 15 40 45 0	 3 11 6 0	 15 55 30
9	Weight in kilogram a. Less than 50 kg b. 51-60 kg c. 61-70 kg d. Above 70 kg	 8 7 0 5	 40 35 0 25	 6 9 0 5	 30 45 0 25
10	Monthly income in Rs a. Less than 10,000 b. 10,001 – 20,000 c. 20,001 – 30,000 d. More than 30,000	 3 4 7 6	 15 20 35 30	 1 4 9 6	 5 20 45 30

Table 1: Socio-Demographic Variables: Among the 40 participants, the majority (65–70%) were housewives, with secondary education or higher (60%). Joint families were predominant (70%), and most had undergone regular antenatal visits (45–70%). Monthly income varied, with 35–45% earning between ₹20,001–30,000.

Table 2: Distribution of pre-test and post-test level of labour fear among mothers in experimental group and control group

N=40

Level of fear	**Experimental group (n=20)**				**Control Group (n=20)**			
	Pre-test		**Post-test**		**Pre-test**		**Post-test**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Mild fear	2	10	13	65	1	5	0	0
Moderate fear	11	55	7	35	14	70	16	80
Severe fear	7	35	0	0	5	25	4	20

Table 2: Labor Fear Levels: In the experimental group, 35% had severe fear pre-test, but this dropped to 0% post-test, while mild fear increased from 10% to 65%, indicating significant improvement due to intervention. The control group showed minimal change, with 80% still experiencing moderate fear post-test.

Table 3: Distribution of pre-test and post-test level of labour anxiety among mothers in experimental group and control group [N=40]

Level of anxiety	**Experimental group (n=20)**				**Control Group (n=20)**			
	Pre-test		**Post-test**		**Pre-test**		**Post-test**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Mild anxiety	5	25	20	100	1	5	2	10
Moderate anxiety	13	65	0	0	18	90	16	80
Severe anxiety	2	10	0	0	1	5	2	10

Table 3: Labor Anxiety Levels: Post-intervention, 100% of participants in the experimental group had mild anxiety, compared to only 10% pre-test. Severe anxiety dropped from 10% to 0%, proving the intervention's effectiveness in emotional resilience. The control group remained mostly unchanged, with 80% still experiencing moderate anxiety

Table 4: Distribution of mode of child birth preference before and after prenatal intervention among mothers in experimental group

N=20

Mode of child birth preference	Before		After	
	f	%	f	%
Vaginal birth	5	25	14	70
Caesarean section	15	75	6	30

Table 4: Childbirth Preference: Preference for vaginal birth increased from 25% to 70% after intervention, while C-section preference dropped from 75% to 30%, emphasizing how educational support influenced birth choices.

Table 5: Effectiveness of prenatal intervention on labour fear and anxiety among mothers in experimental group

N=20

Comparison	Pre-test	Post-test	Mean D	t value	df	p value
Fear	16.35±6.09	9.40±2.90	6.95	4.842	19	**0.001***
Anxiety	18.0±7.11	7.85±2.18	10.15	5.710	19	**0.001***

***P<0.05 level of significance**

Table 5: Effectiveness of Prenatal Intervention: Statistical analysis showed a significant reduction in labor fear ($t=4.842$, $p<0.001$) and anxiety ($t=5.710$, $p<0.001$), with mean scores decreasing from 16.35±6.09 to 9.40±2.90 for fear, and 18.0±7.11 to 7.85±2.18 for anxiety, confirming the intervention's strong psychological benefits

DISCUSSION

This study's findings align with existing literature that examines the role of prenatal psychological interventions in promoting vaginal delivery and reducing labor-related anxiety. Our findings demonstrate that psychological and educational interventions significantly reduce labor fear and anxiety, while simultaneously increasing the preference for vaginal birth. These results mirror the conclusions of Geko et al. [6], who found that prenatal counseling significantly lowered elective C-section rates from 42% to 28%. In comparison, our study observed a similar trend, with vaginal birth preference rising from 25% to 70% post-intervention. This highlights how important prenatal education is for empowering expectant mothers and lowering the number of unnecessary surgical deliveries. Comparably, Olza et al. [7] investigated how psychophysical training affected the perception of anxiety and labour pain. Similar to our findings, which showed that severe fear levels decreased from 35% to 0% after intervention, their findings showed that maternal fear decreased from 40% to 5% after training. Additionally, both studies stressed an association between frequent prenatal care and reduced anxiety related to labour, emphasising the significance of continuing education regarding maternal health & Labour Process during pregnancy. The study conducted by Sathiya et al. [8] investigated the impact of educational workshops on decisions about childbirth among antenatal mothers. The findings of our study, which showed that the experimental group's preference for vaginal birth increased by 45% whereas the control group's increased by only 10%, were in accordance with their study's 20% increase in vaginal birth rates after the intervention. This demonstrates how well prenatal education support can help mothers make decisions about giving birth naturally while easing their worries about labour pain and complications.

CONCLUSION

According to the study's findings, prenatal intervention packages successfully lower anxiety and fear associated with labour, promoting vaginal birth preferences and reducing unnecessary Caesarean sections. The findings support findings from around the world's research and highlight the significance of psychological support during pregnancy. Maternal outcomes and birth experiences can be improved through incorporating these interventions into routine maternal care. To further validate these positive effects, a large number of samples should be used for subsequent studies.

RECOMMENDATION

The similarities indicate how psychological assistance during pregnancy can significantly improve the experiences of expectant mothers and reduce the number of unnecessary caesarean sections. Similar to our prenatal intervention package, other studies indicate that prenatal education, psychophysical preparation, and structured counselling are important techniques for improving the maternal experience & childbirth mode preference. Multi-center trials with larger sample sizes may be investigated in subsequent research to validate these findings while additionally looking at long-term postnatal positive benefits.

CONFLICT OF INTEREST: The authors declare that there is no conflict of interest.
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