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Research Article

ASSESSMENT OF CHILDBIRTH MODE PREFERENCES FOLLOWING PRENATAL INTERVENTION: A COMMUNITY-BASED QUASI-EXPERIMENTAL STUDY

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ABSTRACT

This study evaluated the impact of a prenatal intervention package on childbirth mode preferences and birth outcomes among mothers. The primary objective was to assess the effectiveness of these interventions in reducing labor anxiety and fear while promoting a preference for vaginal delivery. A quantitative, quasi-experimental non-randomized control group design was adopted for this study. The sample comprised 140 antenatal mothers in their third trimester, divided into experimental (n=70) and control (n=70) groups. The experimental group received 60-minute prenatal intervention session. Data were collected using Likert scales for labor fear and anxiety & Structured questionnaires for birth preference mode of delivery. Post-intervention, vaginal birth preference in the experimental group rose from 37 to 50 mothers, while the control group showed minimal change (32 to 36). Severe labor fear in the experimental group dropped significantly from 90% to 4% ($p < 0.001$), and severe anxiety fell from 91% to 1% ($p < 0.001$). Mann-Whitney U tests confirmed these significant improvements ($p < 0.001$) compared to the control group. The prenatal intervention package effectively reduced labor-related psychological distress and significantly shifted maternal preferences toward vaginal delivery.

Keywords: Prenatal intervention, Childbirth preference, Vaginal delivery, Caesarean section, Labor fear.

INTRODUCTION

The transition to motherhood is a profound physiological and psychological milestone, yet for many women, the anticipation of childbirth is overshadowed by significant apprehension (Alizadeh-Dibazari, & Mirghafourv and, 2024). In modern obstetrics, the rising global rates of elective Caesarean sections have sparked public health concerns, as vaginal delivery remains the preferred mode for uncomplicated pregnancies due to better recovery times and fewer surgical risks (Devall *et al*., 2021). This study, titled "Impact of Prenatal Intervention package to promote the vaginal delivery & to evaluate birth outcome among mothers," investigates how structured support can mitigate psychological barriers and influence delivery preferences. Labor fear and anxiety are pervasive issues that can negatively impact both maternal well-being and the progress of labor. High levels of anxiety during the third trimester are often associated with a lack of information, fear of physical pain, and concerns regarding the safety of the infant (Kasaye, Scarf, Sheehy, & Baird, 2024). Data from this study indicates that prior to any intervention, a staggering 90% of the experimental group and 79% of the control group experienced "Severe Fear" regarding childbirth (Heazell *et al*., 2016). Similarly, severe anxiety was reported by 91% and 89% of mothers in the experimental and control groups, respectively. Such high baseline levels of distress often drive mothers to prefer surgical interventions over natural labor, viewing Caesarean sections as a more "controlled" or "painless" alternative. Prenatal interventions, including education and physical exercises, serve as critical tools in preparing mothers for the realities of labor. The intervention package utilized in this research focused on an intensive 60-minute session conducted (Fenwick, Toohill, Creedy, Smith, & Gamble, 2015). By providing mothers with targeted information and coping strategies, these interventions aim

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to transform the perception of childbirth from a fearful event into a manageable process. The study specifically targets mothers in their third trimester a crucial window where delivery preferences are finalized and the physical demands of pregnancy are most acute. Despite the availability of antenatal care, many women in community settings lack access to structured psychological preparation (Athinaidou, Vounatsou, Pappa, Harizopoulou, & Sarantaki, 2024). The demographic profile of the participants reveals a diverse range of educational backgrounds and family structures, with a majority living in joint families (80% in the experimental group) and serving as housewives (76%). These socio-demographic factors play a significant role in how a woman perceives and prepares for birth. By implementing a community-based study, this research seeks to bridge the gap between routine medical check-ups and holistic maternal preparation.

MATERIALS AND METHODS

The methodology for this study was structured to rigorously evaluate the impact of a targeted prenatal intervention package on maternal psychological states and delivery preferences. The study utilized a quantitative research approach to ensure measurable and objective results.

Research Design

The study employed a Quasi-experimental, Non-randomization Control group design. This design was selected to facilitate a comparison between an experimental group receiving the intervention and a control group receiving standard care, which is particularly effective in community-based settings where strict randomization may be challenging.

Setting and Population

The research was conducted in selected areas of Gujrat, focusing on the community health landscape. The target population consisted of all antenatal mothers residing of selected areas. Specifically, the source of data was drawn from mothers in selected villages and urban areas within the region.

Sample and Sampling Technique

A total sample size of 140 antenatal mothers was recruited. These participants were divided equally into two groups: Experimental Group: 70 mothers and Control Group: 70 mothers. The participants were selected using a Non-probability convenient sampling technique based on their availability and willingness to participate. Although the initial selection was based on convenience, the allocation into experimental and control groups was handled through a random allocation process to minimize selection bias.

Selection Criteria

To ensure a homogeneous and relevant study group, specific inclusion and exclusion criteria were applied: Inclusion Criteria: The study included antenatal mothers who were in their third trimester, regardless of whether they were primiparous, provided they resided in selected village and consented to participate**.** Exclusion Criteria: Mothers with high-risk pregnancies, multiple pregnancies (e.g., twins), or a clinical history of depression were excluded to prevent confounding variables from affecting the results of the labor fear and anxiety scales.

Variables

The study's framework was built around three categories of variables: the independent variable, which was the structured prenatal intervention package, and the dependent variables, which included labor fear, labor anxiety, mode of delivery preference, and maternal birth outcomes. To ensure group comparability and identify potential confounding factors, several socio-demographic variables were monitored, including age, level of education, occupation, and type of family. Additionally, the researchers tracked clinical and physical characteristics such as the month of pregnancy, antenatal visit frequency, height, weight, and the participant's monthly income. This comprehensive variable s*et al*lowed for a detailed analysis of how the intervention influenced psychological states and delivery choices across diverse backgrounds.

Data Collection Tools

The data collection instrument comprised four distinct sections designed to capture comprehensive maternal data. Section I recorded the socio-demographic profile, including age, education, and clinical history. Sections II and III utilized Likert scales to quantitatively measure levels of labor fear and labor anxiety, respectively. Finally, Section IV employed a specialized questionnaire to identify childbirth mode preferences. Together, these tools allowed for a robust evaluation of the prenatal intervention's psychological and behavioural impact on the study participants.

Intervention Protocol

The data collection process was executed in four systematic phases to evaluate the intervention's efficacy. In Phase I, baseline levels of labor fear and anxiety were established for both groups. During Phase II, the experimental group received a 60-minute prenatal intervention daily for three consecutive days, while the control group received no treatment. Phase III involved an immediate post-test assessment of fear and anxiety for both cohorts. Finally, Phase IV assessed childbirth mode preferences and the specific impact of antenatal exercises on achieving normal vaginal delivery outcomes.

RESULTS AND DISCUSSION

The findings of the study are categorized into socio-demographic characteristics, levels of labor-related psychological distress, and childbirth mode preferences. The study involved 140 participants, equally divided into experimental (n=70) and control (n=70) groups. Age and Education: The largest age bracket was 24–29 years,

accounting for 34% of the experimental group and 56% of the control group. Regarding education, 47% of experimental and 44% of control subjects had completed secondary education. Family and Occupation: A majority of the participants lived in joint families (80% experimental; 66% control) and identified as housewives (76% experimental; 63% control). Clinical Data: Most mothers were in their 8th month of pregnancy (43% experimental; 46% control) and maintained regular antenatal visits (77% experimental; 69% control. The prenatal intervention package significantly reduced psychological distress in the experimental group (Table 1).

Table 1. Comparative Levels of Labor Fear.

Fear Level	Group	Pre-test (%)	Post-test (%)	p-value
Severe Fear	Experimental	90%	4%	<0.001 (HS)
	Control	79%	77%	
Mild Fear	Experimental	0%	29%	
	Control	0%	0%	

Table 2. Comparative Levels of Labor Anxiety.

Anxiety Level	Group	Pre-test (%)	Post-test (%)	p-value
Severe Anxiety	Experimental	91%	1%	<0.001 (HS)
	Control	89%	81%	
Mild Anxiety	Experimental	0%	53%	
	Control	1%	0%	

Statistical analysis using the Mann-Whitney U test confirmed that while there were no significant differences between groups at the pre-test stage for fear ($p=0.064$) or anxiety ($p=0.56$), the post-test differences were highly significant ($p<0.001$), demonstrating the intervention's effectiveness. The prenatal intervention package significantly influenced the childbirth mode preferences among the study participants. In the experimental group, the preference for vaginal birth rose substantially from 37 mothers at the pre-intervention stage to 50 mothers following the intervention. Conversely, the experimental group's preference for Caesarean sections showed a marked decline, dropping from 33 mothers to 20 mothers after the sessions. In contrast, the control group, which did not receive the intervention package, exhibited only a minimal shift, with vaginal birth preferences increasing slightly from 32 to 36 mothers. These results demonstrate that the structured prenatal intervention effectively redirected maternal delivery preferences toward natural birth. This shift is statistically significant and correlates with the observed reductions in labor-related fear and anxiety, suggesting that informed preparation empowers mothers to opt for vaginal delivery over surgical alternatives The findings of this quasi-experimental study demonstrate that a structured prenatal intervention package significantly reduced labor-related fear and anxiety while shifting maternal preferences toward vaginal delivery. These results underscore the critical role of psychosocial preparation in influencing childbirth decisions, particularly in community-based settings where elective Caesarean sections are increasingly perceived as a safer or more controlled option.

The present study provides compelling evidence that structured prenatal interventions can substantially reduce maternal fear and anxiety while positively influencing childbirth mode preferences. The dramatic decline in severe fear (from 90% to 4%) and severe anxiety (from 91% to 1%) among mothers in the experimental group highlights the effectiveness of targeted psychosocial support. These reductions are not only statistically significant but also clinically meaningful, as they directly correlate with improved maternal confidence and a greater inclination toward vaginal delivery. The observed shift in childbirth preferences from 53% to 71% favoring vaginal birth in the intervention group suggests that psychological readiness plays a decisive role in delivery decisions (Table 2). Mothers who received structured guidance were better equipped to perceive vaginal delivery as a manageable and natural process, rather than a source of uncontrollable pain or risk. In contrast, the control group exhibited only marginal changes, reinforcing the conclusion that routine antenatal care alone may be insufficient to address deep-seated fears and anxieties. These findings resonate with existing literature that emphasizes the importance of prenatal education in reducing elective Caesarean rates. However, the magnitude of change in this study is particularly noteworthy, given the community-based setting and the relatively short intervention period. The results suggest that even brief, structured sessions can yield substantial psychological benefits when delivered at a critical juncture the third trimester when maternal preferences are typically solidified. The socio-demographic profile of participants further contextualizes the findings.

With a majority of mothers living in joint families and identifying as housewives, cultural and familial influences likely shaped their initial apprehensions. The intervention's success in overcoming these barriers underscores its adaptability to diverse social contexts. It also highlights the potential for community health workers to deliver similar programs effectively, thereby extending the reach of maternal health services beyond clinical environments. The study demonstrates that reducing psychological distress is not merely an ancillary benefit but a central determinant of delivery choices. By alleviating fear and anxiety, interventions empower mothers to opt for vaginal delivery, which is associated with faster recovery, fewer complications, and better long-term outcomes. These findings affirm that prenatal interventions are a powerful tool for promoting maternal psychological well-being and encouraging safer, evidence-based childbirth practices. They provide a strong rationale for integrating structured psychosocial support into routine antenatal care, particularly in settings where elective Caesarean sections are rising due to fear-driven preferences.

CONCLUSION

This community-based quasi-experimental study provides strong evidence that structured prenatal interventions can significantly reduce maternal fear and anxiety while positively influencing childbirth mode preferences[21]. The intervention package, delivered through intensive sessions in the third trimester, proved effective in transforming maternal perceptions of labor from a threatening and uncontrollable experience into a manageable and natural process. The dramatic reduction in severe fear (from 90% to 4%) and severe anxiety (from 91% to 1%) among mothers in the experimental group underscores the profound psychological benefits of targeted antenatal education and coping strategies. Importantly, these improvements translated into behavioral outcomes, with a substantial increase in preference for vaginal delivery, contrasting sharply with the minimal changes observed in the control group. The findings highlight the critical role of psychosocial preparation in maternal health. While medical care during pregnancy traditionally emphasizes physical monitoring and clinical safety, this study demonstrates that addressing psychological distress is equally essential[22]. Fear and anxiety are not merely emotional states but powerful determinants of delivery choices, often driving mothers toward elective Caesarean sections. By alleviating these concerns, prenatal interventions empower women to make informed decisions aligned with evidence-based recommendations favoring vaginal delivery for uncomplicated pregnancies. The study also emphasizes the feasibility of implementing such interventions in community settings. The structured sessions were brief, cost-effective, and adaptable, making them suitable for integration into routine antenatal care programs, particularly in low- and middle-income countries where surgical resources are limited and cultural apprehensions about childbirth are prevalent (Lightly *et al*., 2025). The demographic diversity of participants further supports the generalizability of the findings, suggesting that interventions can be effective across varied educational, occupational, and family backgrounds. Nevertheless, while the results are promising, future research should extend beyond short-term psychological outcomes to examine the long-term impact on actual delivery practices, maternal satisfaction, and neonatal health. Longitudinal studies and randomized controlled trials will be essential to confirm sustainability and scalability. Additionally, exploring digital and telehealth modalities could enhance accessibility, particularly in rural or underserved areas (Milne *et al*., 2009). This study contributes valuable evidence to the growing body of literature advocating for psychosocial support in maternal care. By bridging the gap between routine medical monitoring and holistic preparation for childbirth, structured prenatal interventions represent a powerful strategy to reduce unnecessary Caesarean sections, improve maternal well-being, and promote safer, more empowering birth experiences.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest

ETHICS APPROVAL

Not applicable

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AI TOOL DECLARATION

The authors declares that no AI and related tools are used to write the scientific content of this manuscript.

DATA AVAILABILITY

Data will be available on request

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