RESEARCH PAPER

Impact of Childbirth Education Classes using Knowlwdge, Awareness and Fear Questionnaire on Parous Pregnant Women from Low Socioeconomic Status - Interventional Study

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ABSTRACT

Aim and Background: A young mother's age, nulliparity, an unplanned pregnancy, a high Body Mass Index (BMI) prior to pregnancy, a low obstetric history, low mental health, anxiety disorders, a traumatic birth experience, a lack of social support, and a low socioeconomic status are among the primary causes for fear after childbirth. Expectant mothers who take antenatal classes are more prepared for labour and delivery.

This study aims to evaluate the effect of childbirth education classes using KAF-Q for pregnant women from low socioeconomic backgrounds having fear after childbirth.

Methods: A total of 23 parous pregnant women admitted in Obstetrics and Gynaecology ward, Justice K.S Hegde Charitable Hospital, Deralakatte, Mangaluru who fulfilled the inclusion criteria were included in the study. Study protocol was explained to all the participants in the concerned language. The duration of the study was one year and data was collected from September 2024 - December, 2024.

Results: Age of the participants ranged from 22 to 28 years with mean:
24.91 + 1.54 years; BMI ranged from 23.2 to 31.5 Kg/m2 with mean:
27.01 + 1.63 Kg/m2. The Paired "t" test was used and there was an improvement ($p < 0.05$) in knowledge, awareness, fear regarding childbirth as well as the KAF-Q (overall score); from pre-test to post-test.

Conclusion: Using a structured questionnaire, this study assessed how childbirth education classes affected parous pregnant women from low socioeconomic status. Overall, the findings pointed to the potential of structured childbirth classes as a useful intervention for enhancing maternal health outcomes for low-income populations.

Keywords: Childbirth education classes, Low socioeconomic status, Pregnant women, Prenatal classes.
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INTRODUCTION

India is the country that gives birth to 25 million children annually, or roughly one- fifth of all childbirths worldwide.[1] Among pregnant women, Fear of Childbirth (FOC) is a prevalent issue.[2] The median age at first marriage in Karnataka is 19.6 years for women aged 20–49 and 20.2 years for women aged 25–29. Only 11 percent of women aged 2049 have never married, compared with 32 percent of men aged 20-49. The total fertility rate is 1.5 children per woman in urban areas and 1.8 in rural areas. Notably, the proportion of young women who have started childbearing is significantly higher among those with no schooling (18%) compared to those with 12 or more years of schooling (3%). More than one-fifth of institutional deliveries in the majority of Indian provinces end in cesarean sections, with the highest prevalence seen in southern states including Telangana, Kerala, and Andhra Pradesh, according to National Family Health Survey (NFHS) 5 data published in May 2022. These two studies argue that in India,
Caesarean section (C-section) deliveries are positively correlated with women's advancing age, literacy, and socioeconomic status (SES).[3][4] Pregnant women who receive education about labor and its phases may

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become more mentally prepared to handle the experience.[5][6][7] A thorough understanding of self-care, sleeping positions, breastfeeding, and nutrition for infants is required.[8]

Women from low socioeconomic status (LSES) are less likely to pursue education and are more likely to give birth via cesarean section. This finding highlights the need of concentrating on prenatal health education as a possible strategy to reduce needless caesarean deliveries, especially for low-income women.[9]

While pregnant women with two or more children reported low levels of birth fear for their current pregnancy, the majority of expectant women with only one child reported moderate levels of birth fear. According to this research, pregnant women who have more children tend to experience less fear of giving birth. Furthermore, the degree of worry does not appear to be influenced by the gestational week.[10] LSES and pregnancy can negatively affect intrauterine fetal development thereby increasing childbirth complications and maternal mortality thereby increasing the fear and anxiety. Childbirth education classes prepare women for childbirth and early parenting by reducing fear and anxiety.[11][12]

Hence, increasing the occurrence of C-sections. LSES uneducated, unemployed, and low income increases the chance of unfavorable pregnancy outcomes in expectant mothers.[13] As a result, regular childbirth education classes for communication, education, and information must be conducted. Pregnancy care is less likely to be received by women with LSES, as the women are not aware of its importance.[14] Moreover, there are currently no studies done to see the effect of childbirth education classes in parous pregnant women using KAF-Q from Low socioeconomic status. The study aims to examine the potential effects of childbirth education classes using Knowledge, Awareness, and Fear - Questionnaire (KAF-Q) for parous pregnant women from low socioeconomic status having fear after childbirth. The null hypothesis suggests that there will not be any significant effect of childbirth education classes using the Knowledge, Awareness, and Fear - Questionnaire for parous pregnant women from low socioeconomic status having fear after childbirth, whereas the alternate hypothesis suggests that there will be a significant effect of childbirth education classes using Knowledge, Awareness, and Fear - Questionnaire for parous pregnant women from low socioeconomic status having fear after childbirth. In conclusion, one effective way to assist expectant mothers is to offer lessons and get them ready for labor. Maternal care interventions in India need focused programs for rural, uneducated, low-adolescent women.[15]

MATERIALS AND METHODS

A single group pre post interventional study was conducted at Obstetrics and Gynaecology department at Justice K S Hegde Charitable Hospital, Deralakatte, Mangaluru, Karnataka. The study obtained Ethical clearance from the Institutional Ethics Committee of Nitte Institute of Physiotherapy on 19-01-2024. (Ref: NIPT/IEC/Min//13/2023-2024)

Inclusion Criteria

Parous pregnant women having fear after childbirth with a history of normal delivery, who are in their second or third trimester of pregnancy, between the age group 22-35 years and who score between 5 and 11 in modified kuppuswamy scale.

Exclusion Criteria

The study excluded women who have earlier participated in childbirth education classes and have a high risk pregnancy including any diagnosed mental disorder or breech presentation.

Sample Size

Based on a 5% level of significance, expected proportion of 35% (relaxation-coping strategy) [techniques for coping with labour: does antenatal education translate into practice? H. Spiby et al With 20% absolute precision and a 10% attrition rate, the expected sample size is 23.

Procedure

A written as well as verbal consent was obtained from the participants. The KAF-Q which was developed in English language and was translated in kannada by a language expert was prepared based on thorough literature search. KAF-Q consists of a total of 12 questions subdivided into 3 domains including: Knowledge, Awareness, and Fear regarding pregnancy. The KAF-Q was validated by five experts who had experience of minimum of three years in the field were invited to participate in the study. Each of them has provided their valuable feedback and the changes were incorporated according to the Item Content Validation Index (I-CVI) calculation. In the present study, the pre-KAF-Q was used to determine their prior knowledge of pregnancy, followed by the childbirth education classes whereas the post-KAF-Q along with a feedback form focused on to determine how confident and satisfied the women were with their attendance at the classes. Subjects were asked to respond to each question with a yes or no, with YES receiving a score of 0 and NO receiving a score of 1. The knowledge component has a minimum score of 0 and a maximum score of 4. The higher the score, lesser the knowledge. The awareness component has a minimum score as 0 and maximum score as 5. The higher the score, lesser the awareness. The fear component has a minimum score of 0 and a maximum score of 3. The higher the score, the greater the fear. Two thirty-to-forty-minute childbirth education classes, were held in a hospital setting.

STATISTICAL ANALYSIS

Frequency, percentage, mean, and standard deviation (S.D.) were used to summarize the collected data, and the paired "t" test was used to determine the impact of childbirth education classes using KAF-Q. A pvalue of less than 0.05 proved to be significant. The SPSS

software (SPSS Inc.; Chicago, IL) version 29.0.10 was used to analyze the data.

RESULTS

The study was conducted in among 23 parous pregnant women from LSES having fear after childbirth. Age of the participants ranged from 22 to 28 years with mean: 24.91+1.54 years; Body Mass Index (BMI) ranged from 23.2 to 31.5 Kg/m2 with mean: 27.01+1.63 Kg/m2; the modified Kuppuswamy scale score ranged from 9 to 15 with mean: 11.74+2.09; and the feedback score, ranged from 4.5 to 5 with mean: 4.89+ 0.21. [Table 1]

Table 1 Descriptive Statistics for age, BMI, modified Kuppuswamy scale score, and feedback score

(n=23)	Range	Mean	S.D.
Age(years)	22 to 28	24.91	1.54
BMI(Kg/m2)	23.2 to 31.5	27.01	1.63
Modified Kuppuswamy scale	9 to 15	11.74	2.09
Feedback score	4.5 to 5	4.89	0.21

Kg - kilogram; M-metre; SD - standard deviation

2knowledge regarding childbirth

Knowledge		Pre		Post	
		n	%	n	%
Q1	Yes	2	8.7	23	100
	No	21	91.3	0	0
Q2	Yes	3	13	23	100
	No	20	87	0	0
Q3	Yes	3	13	23	100
	No	20	87	0	0
Q4	Yes	6	26.1	23	100
	No	17	73.9	0	0

The assessment of knowledge regarding childbirth among the women reveals: During pre-test, the 8.7% were familiar with the term “Episiotomy”, 91.3% were not-familiar; and the 100% were found familiar with the term “Episiotomy” during post-test. The 13% of the women had a knowledge about the preparation of pelvic floor muscles,whereas the 87% did not had knowledge about it, during pre-test. The 100% participants had knowledge about the preparation of pelvic floor muscles for childbirth, during post-test. The 13% of women had knowledge about coping techniques; and the 87% did not had during pre-test. The 100% of women had knowledge about coping techniques during labor pain, in post-test. The 73.9% of women never heard about breathing and pushing techniques during pre-test; and the 26.1% had knowledge about about it. During post-test, the l00% of women had knowledge about breathing and pushing techniques

.[Table 2] **3 awareness regarding childbirth**

Awareness		Pre		Post	
		n	%	n	%
Q1	Yes	11	47.8	23	100
	No	12	52.2	0	0
Q2	Yes	10	43.5	23	100
	No	13	56.5	0	0
Q3	Yes	1	4.3	23	100
	No	22	95.7	0	0
Q4	Yes	4	17.4	23	100
	No	19	82.6	0	0
Q5	Yes	6	26.1	23	100
	No	17	73.9	0	0

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The assessment of awareness regarding childbirth among the women reveals: During pre-test, the 47.8% were aware about exclusive breastfeeding and its positions, and 52.2% were not aware about it, during pretest. The 100% were aware about exclusive breastfeeding and its positions during post-test.

The 43.5% were aware of neonatal handling, and the 56.5% were unaware, during pre-test. The 100% women were aware of neonatal handling, during post-test. The 4.3% were aware about the partner support during pregnancy; and the 95.7 were not aware during pre-test. The entire women in this study 100% were aware about the partner support during pregnancy, during post-test. The 17.4% were aware of true and false labor pain during pre-test; and the 82.6% were unaware about it. During post-test, the 100% of the women were aware of true and false labor pain. Also, the 26.1% of women were aware of perineal hygiene during pre-test; and the 73.9 % were not aware of perineal hygiene. The 100% of the women were aware of perineal hygiene, during posttest.[Table 3]

4fear regarding childbirth

Fear		Pre		Post	
		n	%	n	%
Q1	Yes	5	21.7	23	100
	No	18	78.3	0	0
Q2	Yes	8	34.8	23	100
	No	15	65.2	0	0
Q3	Yes	8	34.8	23	100
	No	15	65.2	0	0

The assessment of fear regarding childbirth among the women reveals: During pre-test, the 21.7% were prepared for childbirth, and 78.3% were not prepared, during pre-test. The 100% were prepared for childbirth, during post-test. The 34.8% were prepared for the various symptoms of labor, and the 65.2% were not prepared, during pre-test. The 100% women were prepared for the various symptoms of labor, during post-test. The 34.8% were prepared to face the labor pain; and the 65.2% were not prepared during pre-test. The 100%women in this study were prepared to face the labor pain, during post-test. [Table 4]

The Paired “t" test was used to find the impact of childbirth education classes using KAF-Q on parous pregnant women from low socioeconomic status. There was an improvement ($p<0.05$) in knowledge, awareness, fear regarding childbirth as well as the KAF-Q (overall score); from pre-test to post-test. Hence, the childbirth education classes were found to be effective; among parous pregnant women from low socioeconomic status. [Table 5]

Table 5 Impact of childbirth education classes using KAF-Q on parous pregnant women from low socioeconomic status

Cumulative scores		Mean	S.D.	”t"	p value
Knowledge	Pre	3.39	0.84	19.39	< 0.001*
	Post	0.00	0.00		
Awareness	Pre	3.61	1.34	12.92	< 0.001*
	Post	0.00	0.00		
Fear	Pre	2.09	1.16	8.60	< 0.001*
	Post	0.00	0.00		
KAF-Q (total score)	Pre	9.09	2.45	17.80	< 0.001*
	Post	0.00	0.00		

DISCUSSION

Prenatal programs' emphasis has shifted in recent years to include expectant mothers and their partners who might not want to abstain from painkillers. According to Sirekin and Enkin. those who attended these prenatal classes were expecting to learn more about labor and delivery, meeting other pregnant parents, learning how to take care of their newborn, and learning about hospital procedures. The experience of labor and delivery was another area of attention for the evaluation of these classes. The faith in the body's capacity to give birth is strengthened by childbirth classes. Fear about labor and birth can be discussed with the educator and other couples with the same issues. The effectiveness of the prenatal classes in this regard depends on the women being able to apply what they have learnt during the delivery. The mothers who were least satisfied were those who, for whatever reason, were unable to utilize the strategies that had been taught.[11] Dewatteville PH, et.al believed that relaxation, exercise, and knowledge could make childbirth less painful. Studies imply that preparation and education may affect the delivery method. People with LSES experience less control since they have less options to acquire CBC. Miscarriage, fetal deformities, and concern of not being a good mother are all examples of fear that can arise during pregnancy. Although Fear after childbirth and painful labour is the main reason why a pregnant women prefers a c-section over normal vaginal delivery. By enhancing their understanding of pregnancy, childbirth, labour pain management, postpartum phase and boosting their confidence in their capacity to bear the discomfort of labour pain, CBC help mother's to be prepared.[16] The current study examined the impact of CBC on the parous pregnant women's knowledge, awareness and fear in pregnancy. According to this study, pregnant women who participated in two sessions of childbirth education classes 30-40 minute each had higher levels of knowledge, awareness and lower levels of fear during and after pregnancy. Furthermore, CBC increases the frequency of vaginal delivery.

According to studies, pregnant women who take childbirth classes are more prepared for pregnancy, more eager and determined to give birth normally, and more successful at managing their pain during and after delivery. They also require less anesthetic and analgesia and have lower fear after Childbirth.

Antenatal classes give women enough information on breastfeeding (Cantone D et al., 2017; Sieber S, et al., 2016) and contribute to the increase of breast feeding self-efficacy (Korukcu O et al., 2019).[2][7][17] The World Health Organization (WHO) recommends that the rate of csections should ideally not exceed 15% of births.

Tokophobia, the most prevalent psychiatric cause for c-section, is the most severe kind of childbirth fear, which affects 5–26% of pregnant women. Every woman giving a normal vaginal delivery becomes an example of obstetric achievement during these times of rising c-section rates. According to Koehn, et al women view CEC as crucial to their readiness for giving birth. According to the Sims-Jones, et al study's findings, many participants felt more capable of handling labor and delivery after completing the classes. Fewer, nevertheless, reported that the knowledge gained had increased their confidence in their capacity to care for a newborn.[18] The current study shows that the rate of normal vaginal delivery was greater among women who took CEC.

Attending two or more education sessions was linked to a lower chance of having a scheduled Caesarean delivery. Participating in any kind of childbirth education was linked to a decreased likelihood of planned cesarean delivery and the use of painkillers during labor. Induction of labor was not linked to CEC. Education about childbirth classes might be given in two or more sessions. Programs for childbirth education that are grounded in evidence can be developed using this conclusion.

Discussion regarding Knowledge before and after Childbirth Education Classes

The present study suggests that the correlation between higher socioeconomic status, advanced pregnancy months, were slightly related to better knowledge, but not significantly.

Discussion regarding Awareness before and after Childbirth Education Classes

Awareness was proved to be independent of socioeconomic status and pregnancy stage.

Discussion regarding Fear before and after Childbirth Education Classes

Fear levels did not show any dependency on any factor.

None of the domains (Knowledge, Awareness, Fear, and Overall Score showed significant correlations with the Modified Kuppuswamy scale score, pregnancy month, or feedback score. This suggests that the effectiveness of the educational intervention was consistent across different socioeconomic statuses, pregnancy stages, and irrespective of feedback scores. Feedback Score showed a relatively stronger (though not statistically significant) correlation with Knowledge and overall KAF-Q score, indicating that positive feedback may be slightly associated with better knowledge and overall outcomes. Overall, the intervention's impact was uniform across the diverse backgrounds and stages of pregnancy among participants. The educational intervention significantly improved knowledge, awareness, and preparedness while reducing fear related to childbirth. Positive correlations among KAF-Q domains indicate that increased knowledge and awareness contribute to reduced fear. Age was negatively correlated with awareness and overall scores, indicating younger participants were more receptive. BMI showed no significant impact. The intervention was highly effective for this group, particularly given the lower socioeconomic background of participants.

CONCLUSION

Using a structured questionnaire, this study assessed how childbirth education classes affected parous

pregnant women from low socioeconomic status. The results show that participating in these classes increased the knowledge, awareness and preparedness in women regarding labor, delivery, and postpartum care. The women who participated in these childbirth education classes showed a significant increase in their knowledge of the phases of labor, how episiotomy can be avoided, labor pain management, pushing and breathing techniques, pelvic floor muscles preparation for normal delivery and the significance of breastfeeding positions. Additionally, the study found that although classes on childbirth education had a significant impact on mothers' preparedness there were still some gaps in the application of knowledge.

CLINICAL SIGNIFICANCE

Overall, the study's findings point to the potential of structured childbirth classes as a useful intervention for enhancing maternal health outcomes for low-income populations.

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