

A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING SELF-ASSESSMENT OF FETAL WELLBEING AMONG ANTENATAL MOTHERS IN SELECTED HOSPITALS OF GUWAHATI, ASSAM

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Abstract

Introduction: Ensuring fetal wellbeing is a vital aspect of prenatal care, and empowering antenatal mothers with knowledge to assess fetal health is essential for positive outcomes. Lack of awareness regarding self-assessment techniques may delay the identification of complications, affecting maternal and neonatal health. Structured teaching programmes are effective in enhancing knowledge and practices among expectant mothers.

Objective: To assess the effectiveness of structured teaching programme on knowledge regarding self-assessment of fetal wellbeing among antenatal mothers.

Method: Pre experimental research design (one-group pretest post -test research design) was adopted for this study. 60 antenatal mothers were selected by non-probability (purposive sampling) technique at Tolaram Bafna Kamrup Civil Hospital Amingaon: Kamrup, Guwahati -31, Assam. The tool for data collection were Demographic proforma, Obstetrical proforma and Self-Structured Interview Questionnaire on knowledge regarding self-assessment of fetal wellbeing. The level of knowledge was assessed followed by administration of structured teaching programme. On 8th day Post-test was conducted by using same self-structured interview questionnaire.

Result: Findings of the study revealed that during pre-test 24(40%) of participants had inadequate knowledge, 36 (60%) of participants had moderate knowledge while none of them had adequate knowledge before intervention whereas in post-test majority 46(76.67%) had adequate knowledge and minority 14(23.33%) had moderate knowledge regarding self -assessment of fetal wellbeing. Post -test mean knowledge score is 15.2 ± 2.7358 which was higher than the pre- test mean knowledge score that was 8.5667 ± 2.6831 with the mean difference of 6.6333. The effectiveness was tested using Paired t test with obtained p-value (2.966×10^{-18}) is less than 0.05 (at t value of -12.5186).

Conclusion: Findings revealed that structured teaching program was effective in improving the knowledge regarding self -assessment of fetal well-being among antenatal mothers.

Keywords: Assess, Effectiveness, Structured teaching programme, Knowledge, Self-assessment, Fetal wellbeing, Antenatal mother.

INTRODUCTION

Pregnancy involves the gradual growth and maturation of the embryo and fetus within the mother's womb, and it is typically categorized into three phases: the first trimester (weeks 1–12), the second trimester (weeks 12–28), and the third trimester (weeks 28–40). Globally, approximately 85% of women experience pregnancy during their lifetime, making it a significant public health concern and a focal point for medical and social research.¹

Stillbirth is an important global health problem affecting over 7000 families every day and is associated with emotional, social and economic consequences.² **According to WHO** there are nearly 2 million stillbirths every year – one every

16 seconds. In 2014, the World Health Assembly endorsed Every Newborn Action Plan (ENAP), which includes a global target of 12 or fewer third trimester (late) stillbirths per 1,000 total births in every country by 2030.³

According to UNICEF In 2021, stillbirth rates ranged from 1.6 stillbirths per 1,000 total births to 31.2 stillbirths per 1,000 total births. Around 1.9 million stillbirths babies born with no sign of life at 28 weeks of pregnancy or later – occurred worldwide in 2021.⁴

Self-assessment techniques, such as fetal movement counting, and monitoring maternal weight gain enable antenatal mothers to actively participate in their own healthcare.

One method of screening for fetal health is daily fetal movement counting, in which a mother counts daily fetal movements in order to evaluate the condition of her baby's health. According to Hofmeyr et al. (2015), the daily fetal kick count chart is easy to use, non-invasive, at-home, and doesn't interfere with most daily activities. Generally, the presence of fetal movements is a reassuring indicator of fetus's well-being.⁵

Gestational weight gain, is a determinant of fetal development and well-being during pregnancy, an essential period for both mother and child health. As a warning sign for the health of the fetus and the pregnant woman, gestational weight gain, monitoring is essential.⁶

Excessive or insufficient gestational weight gain during pregnancy can lead to adverse effect for both the mother and the conceptus. Research study shows that gestational weight gain above Institute of Medicine (IOM) recommendations is associated with an increased risk of metabolic complications, hypertension, gestational diabetes, caesarean section, postpartum weight retention, macrosomia, childhood obesity, and cardiometabolic outcomes in childhood. Conversely, gestational weight gain below the recommendations is linked to an elevated risk of intrauterine growth restriction (IUGR), low birth weight (LBW), preterm birth, perinatal mortality, and a higher incidence of newborns small for gestational age (SGA).

Teaching programme plays crucial role for pregnant women to make an informed decision regarding assessment of fetal wellbeing. Education of pregnant women is very important to ensure healthy outcome for mothers and her fetus.

NEED OF THE STUDY.

Maternal and fetal health are key indicators of a nation's overall healthcare quality. Fetal wellbeing during pregnancy is crucial for reducing neonatal morbidity and mortality rates, which remain significant global public health challenges. Despite advances in medical technology and improved access to antenatal care, disparities in knowledge and practice regarding fetal wellbeing persist, particularly in developing regions.

Das P, Borah R (2021) conducted a regional study in northeastern India to examine the impact of maternal illiteracy on fetal outcomes. Among illiterate mothers, there was a 30% higher incidence of fetal complication such as intrauterine death and meconium aspiration syndrome compared to literate mothers.⁷

A study conducted by Sharma R, Gupta S (2020) conducted a study on impact of maternal knowledge on fetal complications in rural India. The effect of maternal knowledge on the prevalence of fetal problems in rural India was examined in this study. The findings showed that 65% of pregnant women were unaware of warning indicators, which caused them to delay off seeking medical assistance. The study found a strong correlation between low mother knowledge and higher incidence of low birth weight and preterm births.⁸

Patel M, Desai P (2019) conducted a cross-sectional study to assessed the relationship between maternal education and neonatal outcomes in low-resource settings. Study concluded that mothers with limited knowledge of antenatal care were twice likely to experience complications such as intrauterine growth restriction (IUGR) and fetal distress. The study emphasized the need for targeted educational interventions.⁹

According to a research study conducted by Prasad S, Bedi N, investigated the relationship between maternal awareness of warning signs during pregnancy and adverse fetal outcomes. Among mothers with poor knowledge, complication such as stillbirths (15%) and fetal distress (20%) were significantly higher compared to those mothers with adequate awareness.¹⁰

Considering all the above factors, personally and by observing them in the course of clinical experience the investigator feels that there is a need for organization of teaching programme on self- assessment of fetal wellbeing in order to enhance the mother's knowledge and early identification of any risk regarding fetus. By improving the knowledge, it may be possible to identify fetal problems and promote a healthy fetus and mother life.

OBJECTIVES

GENERAL OBJECTIVE

To assess the effectiveness of structured teaching programme on knowledge regarding self-assessment of fetal wellbeing among antenatal mothers.

SPECIFIC OBJECTIVES

1. To assess the pre-existing level of knowledge regarding self-assessment of fetal wellbeing among antenatal mothers.
2. To determine the effectiveness of structured teaching programme on knowledge regarding self-assessment of fetal wellbeing among antenatal mothers.
3. To find out the association between pre-test knowledge score with their selected demographic variables.
4. To find out the association between pre-test knowledge score with their selected obstetrical variables

HYPOTHESES

- H₁: There is significant difference between the pre- test and post-test level of knowledge regarding self-assessment of fetal wellbeing among antenatal mothers.
- H₂: There is significant association between the pre-test knowledge score of antenatal mothers with their selected demographic variables.
- H₃: There is significant association between the pre-test knowledge score of antenatal mothers with their selected obstetrical variables.

RESEARCH METHODOLOGY

The study adopted a Quantitative research approach with pre-experimental (one group pre-test post-test) research design.

Population - Antenatal mothers.

Target population- Antenatal mothers who are in 12 weeks-32 weeks of gestation

Accessible population- Antenatal mothers attending out-patient department at Tolaram Bafna Kamrup Civil Hospital who meet the set criteria and available during data collection.

Sample size- 60

Sampling technique - Non -Probability (Purposive sampling) technique.

Tools for data collection- Section-A: Demographic Variables. Section B: Obstetrical variables.

Section C: Self- structured interview questionnaire on self -assessment of fetal well-being.

Theoretical framework- The conceptual framework chosen for the study is based on Modified Imogene M. “King Goal Attainment Model.”

Descriptive Statistics- Frequency, percentage, mean and standard deviation were used

Inferential statistics: Paired t-test and Pearson’s chi-square test were used.

Result

SPSS 20 and a Microsoft Office Excel worksheet were used to assemble and analyze the data.

Table 1: Frequency and percentage distribution of pre-test and post-test level of knowledge regarding self-assessment of fetal well-being among antenatal mothers.

n =60

Level of knowledge	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
	(f)	(%)	(f)	(%)
Inadequate knowledge	24	40	0	0
Moderate knowledge	36	60	14	23.33
Adequate knowledge	0	0	46	76.67

Table 1 depicts that during pre-test 24(40%) of participants had inadequate knowledge, 36 (60%) of participants had moderate knowledge while none of them had adequate knowledge before intervention whereas in post-test majority 46(76.67%) had adequate knowledge and minority 14(23.33%) had moderate knowledge regarding self -assessment of fetal well being.

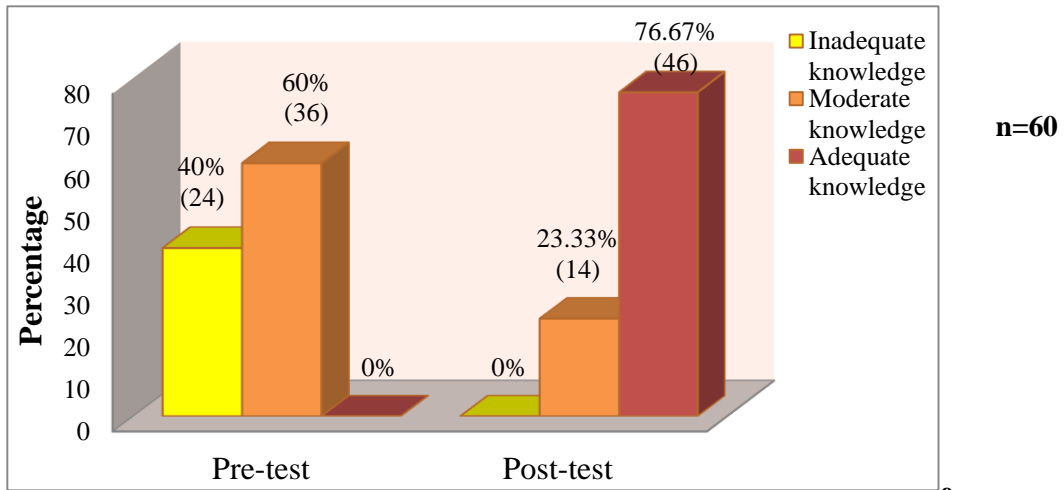


Fig 1: percentage distribution of pre-test and post-test level of knowledge regarding self-assessment of fetal wellbeing among antenatal mothers.

Table 2: Descriptive statistics showing minimum and maximum score range, Mean, Median, Mode and Standard Deviation (SD) of pre- test and post-test level of knowledge regarding self -assessment of fetal well-being among antenatal mothers.

Characteristics	Minimum score	Maximum score	Range	Mean	Median	Mode	Standard Deviation
Pre-test value	3	14	11	8.5667	8.5	11	2.6831
Post-test value	9	19	10	15.2	16	16	2.7358

Table 2 indicated that mean post-test score (15.2) was higher than the mean pre-test score (8.5667). The median post-test knowledge score (16) was higher than the median pre-test knowledge score (11). The post-test score SD (2.7358) seemed to be higher than the pre-test score SD (2.6831). So, it is evident that the post-test knowledge scores were higher than the pre-test knowledge scores.

Table 3: Effectiveness of structured teaching programme on knowledge regarding self-assessment of fetal well-being among antenatal mothers.

Comparison of level of knowledge	Mean	SD	Mean D	t-value	df	p-value
Pre -test	8.5667	2.6831	6.6333	-12.5186	59	2.966*10 ⁻¹⁸
Post -test	15.2	2.7358				

p<0.05 level of significance

NS- Non significant, *-significant

Table 3 depicts the, effectiveness of the structured teaching programme on the level of knowledge regarding self -assessment of fetal well- being among antenatal mothers.

The results have shown that post -test mean knowledge score is 15.2 ± 2.7358 which was higher than the pre- test mean knowledge score that was 8.5667 ± 2.6831 with the mean difference of 6.6333. The effectiveness was tested using Paired t test with obtained p-value (2.966×10^{-18}) is less than 0.05 (at t value of -12.5186). Findings revealed that structured teaching program was effective in improving the knowledge regarding self -assessment of fetal well-being among antenatal mothers.

Hence, the finding concludes that there was a significant difference between the pre-test and post-test level of knowledge regarding self- assessment of fetal well-being among antenatal mothers at 0.05 level of significance. Thus, hypothesis H_1 was accepted.

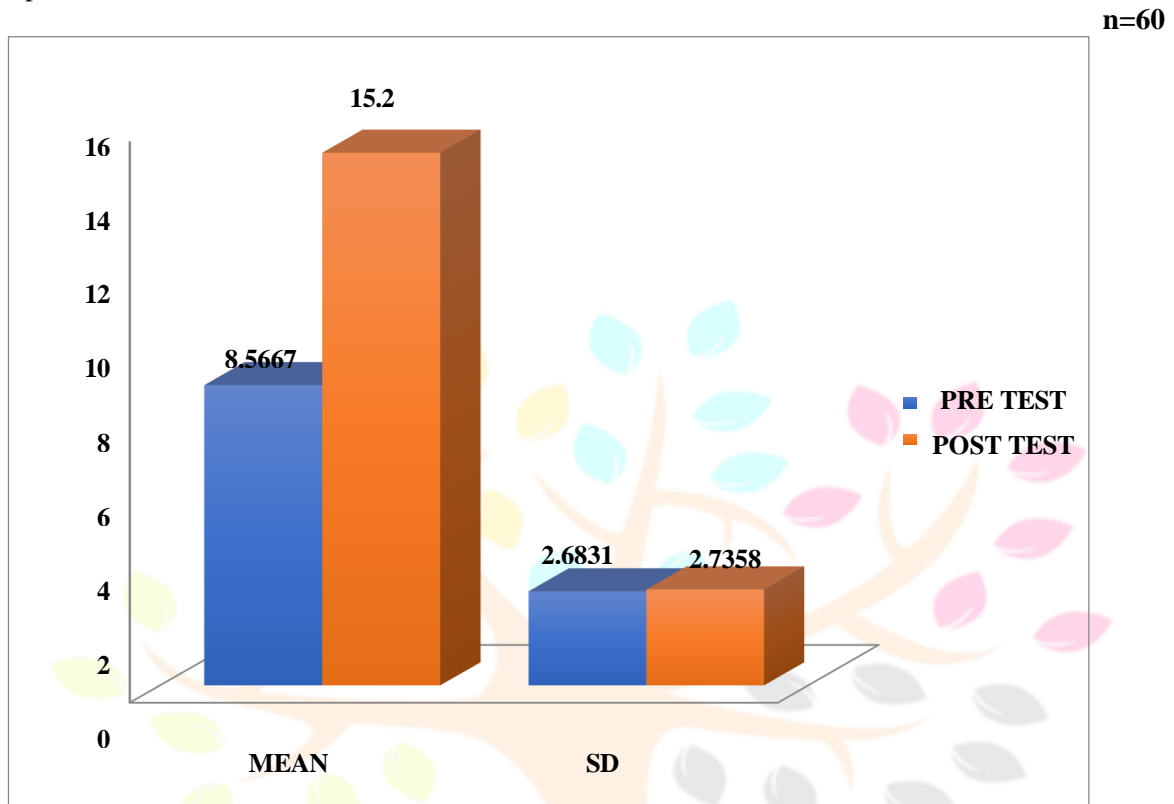


Fig 2: Comparison of pre-test and post-test mean score and SD of level of knowledge regarding self-assessment of fetal well-being among antenatal mothers.

Table 4: association between pre-test level of knowledge regarding self-assessment of fetal well-being with their demographic variables.

n =60

S.No	Demographic variables	Pre-test level of knowledge		χ^2	df	p- value
		Inadequate knowledge	Moderate knowledge			
1	Age in years			0.6491	2	0.4204 ^{NS}
	20-23	6	11			
	24-27	9	15			
	28-30	9	10			
2	Educational qualification			1.4773	3	0.2242 ^{NS}
	Primary school	3	3			
	high school	8	8			
	Higher secondary	9	18			
	Under graduate	4	7			
	Post graduate	-	-			

Table 5: association between pre-test level of knowledge regarding self-assessment of fetal well-being with their obstetrical variables.

S.No	Obstetrical variables	Pre- test level of knowledge		χ^2	df	p- value
		Inadequate knowledge	Moderate knowledge			
1	Weeks of gestation			6.225	3	0.0126*
	12-16weeks	10	8			
	17-21weeks	4	9			
	22-26weeks	2	11			
	27-32weeks	8	8			
2	Number of pregnancies			0.724	1	0.3948 ^{NS}
	1	12	22			
	2	12	14			
3	Number of antenatal visits			1.1184	2	0.2903 ^{NS}
	-	-	-			
	1	9	11			
	2	5	12			
	3	10	13			
	4 or more					

n=60

p<0.05 level of significance

NS- Non significant, *-significant

Table 5 shows the association between pre-test scores of levels of knowledge regarding self -assessment of fetal wellbeing among antenatal mothers with their selected obstetrical variables like weeks of gestation, number of pregnancy and number of antenatal visits. The result shows that except for ‘weeks of gestation’, all the other obstetrical variables are statistically non-significant at 0.05 level of significance, with pre-test scores of level of knowledge among antenatal mothers. This is so because except for the gestation variable weeks of gestation’, p-value is greater than 0.05. Hence, it can be concluded that there is no significant association between the pre- test level of knowledge regarding self -assessment of fetal wellbeing among antenatal mothers with their selected gestation variables. So, the research hypothesis H₃ is rejected.

DISCUSSION

The present study, during pre-test (40%) of participants had inadequate knowledge and (60%) had moderate knowledge whereas in post-test majority (76.67%) had adequate knowledge and (23.33%) had moderate knowledge regarding self-assessment of fetal wellbeing. The present study finding supported by the study conducted by Thulasamma N, Varalakshmi K (2017) “Effectiveness of Structured Teaching Programme on self- assessment of fetal well- being among Primigravida Mothers.”The research study results shows that pre-test knowledge score was the majority 58.3% (35) had poor knowledge whereas 16.7% (10) had average knowledge and 25% (15) had good knowledge on self-assessment of fetal well-being. In post-test knowledge scores on self-assessment of fetal well-being among primi mothers the findings shows that the majority 68.3% (41) gain fair knowledge whereas least 6.7% (4) had average knowledge on self-assessment of fetal well-being.¹¹

In the present study, the result shows the the effectiveness of structured teaching programme on knowledge regarding self-assessment of fetal wellbeing among antenatal mothers. The findings shows that the pre-test mean score was 8.5667±2.683. After administering the structured teaching programme the post-test mean score was 15.2±2.7358 Paired t test with obtained p-value (2.966*10⁻¹⁸) is less than 0.05 (at t value of -12.5186) and hence found to be statistically difference between the pre -test and post- test level of knowledge regarding self- assessment of fetal well-being among antenatal mothers at 0.05 level of significance. Thus, hypothesis H₁ was accepted. The current study supported by research study conducted by Hemavathy V, Sarathy S, Christina A (2019) conducted a study to” Assess the effectiveness of structured teaching programme on knowledge regarding self- assessment of daily fetal movement count, among normal and high risk primigravida mothers at Sree Balaji medical college and hospital.” 40The study result shows that the pre-test mean score was 32.2 and the standard deviation is 16.1. Post-test mean score was 82.6 and standard deviation is 6.3. The paired “t” value is 38.8 which is statistically significant at p<0.001. Hence the structured teaching programme is found to be more effective regarding assessment on daily fetal movement count.¹²

In the present study, the association between pre-test knowledge score with their selected demographic variables which was tested using chi-square test. The result revealed that, except for source of information, all the other demographic variables are statistically non-significant at 0.05 level of significance, with pre-test scores of levels of knowledge among antenatal mothers. The present study findings supported by a study conducted by Algobashy EAR,

Kassam KAI, Eshra MKD (2020) conducted a study on effectiveness of structured teaching programme on knowledge about self- assessment of fetal wellbeing among primigravida women. Results of the research study shows that primigravida mothers and their demographic variables on age in years, education of the mothers and their occupation at $P < 0.05$ and the other variables as income, duration of marital life in years and previous use of any family planning method had no significant association with the total knowledge score on self- assessment of fetal well- being.⁵

• In the present study, the association between pre-test knowledge score with their obstetrical variables which was tested using chi-square test. The result of the study revealed that, except for 'weeks of gestation', all the other obstetrical variables are statistically non-significant at 0.05 level of significance, with pre-test scores of levels of knowledge among antenatal mothers. The present study finding supported by the study conducted by Thulasamma N, Varalakshmi K (2017) Effectiveness of Structured Teaching Programme on self- assessment of fetal well- being among Primigravida Mothers. The research study results shows that there was non-significant association between the obstetrical variables except medical illness during pregnancy at $p < 0.05$ with pre-test score of level of knowledge among antenatal mothers.¹¹

CONCLUSION

From the findings of the study, it can be concluded that structured teaching program on knowledge regarding self-assessment of fetal well-being was effective in increasing knowledge of antenatal mothers. Prior the intervention many participants lacked adequate knowledge about important practice such as fetal movement count, monitoring mothers' weight. Following the structured teaching program, there is a increase in knowledge score was observed. The result revealed that specific education programme had a significant effect in improving knowledge on the self-assessment of fetal well-being among antenatal mothers.

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