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Study of Impact of Structured Teaching Programme on Knowledge of Daily Foetal Movement Count Among Primi Gravidae

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ABSTRACT
This investigation focuses on assessing the effectiveness of a structured educational program aimed at improving knowledge about daily fetal movement counting among first-time pregnant women (primigravidae). Employing a prospective observational study design, the study enrolled 60 primigravidae women who were more than 28 weeks pregnant and attending antenatal outpatient departments (OPD) at tertiary healthcare centers. These participants underwent a structured educational intervention designed to enhance their understanding and documentation of daily fetal movements. Assessment: The study measured participants' knowledge levels both before and after the educational program to evaluate the intervention's impact. Findings: The results underscore the significance of maternal education in monitoring fetal well-being and suggest potential implications for improving antenatal care practices through such educational interventions. The educational program significantly enhanced primigravidae's understanding of fetal movement counting, with high knowledge levels increasing from 16.7-66.7% post-intervention and low knowledge levels dropping from 50-8.3%. This indicates the program's efficacy in elevating maternal knowledge. The findings underscore the importance of targeted educational interventions in maternal health, highlighting their potential to positively influence antenatal care practices and outcomes.

INTRODUCTION

The concept of monitoring fetal movements as an indicator of fetal well-being has been widely recognized and advocated in prenatal care practices. Fetal movement counting, a non-invasive method employed by expectant mothers to monitor their baby's well-being, has become an essential aspect of antenatal care[1]. This method is predicated on the assumption that a decrease in fetal movements could be an early sign of fetal distress or even compromise, warranting further medical evaluation[2,3]. The significance of educating primigravidae-women pregnant for the first time-on counting fetal movements is underscored by their unfamiliarity with pregnancy's physiological and psychological aspects[4]. Studies have shown that structured educational programs can significantly improve pregnant women's knowledge and confidence in detecting potential complications early. Despite its importance, there is a gap in the literature regarding the effectiveness of such educational interventions among primigravidae, particularly in resource-limited settings where access to comprehensive antenatal care may be challenging[5,6].

The present study aims to fill this gap by evaluating the impact of a structured teaching program on the knowledge of daily fetal movement count among primigravidae[7]. This initiative is expected to empower expectant mothers with the necessary knowledge to participate actively in monitoring their pregnancy's progress and identifying potential issues for timely medical consultation[8].

Aims and Objectives: To evaluate the impact of a structured teaching program on primigravidae's knowledge of daily fetal movement count.

- To assess the baseline knowledge of fetal movement counting among primigravidae
- To implement a structured teaching program focused on daily fetal movement count for primigravidae
- To evaluate the effectiveness of the teaching program by comparing pre- and post-intervention knowledge levels among participants

MATERIALS AND METHODS

Source of Data: The data for this prospective observational study was collected from primigravida mothers attending the antenatal O.P.D. of tertiary health care centers.

Study Design: A prospective observational study was conducted to assess the impact of a structured teaching program on the knowledge of daily fetal movement count among primigravidae.

Sample Size: The study involved a sample size of 60 primigravidae women.

Inclusion Criteria:

- All primigravidae mothers attending the antenatal O.P.D. of tertiary health care centers
- More than 28 weeks of gestation

Exclusion Criteria:

- Primi gravida with multiple pregnancies
- Primi gravida mothers with low intelligence quotient

Study: The study implemented a structured teaching program designed to educate primigravidae on counting and recording daily fetal movements. The effectiveness of the program was measured through pre- and post-intervention assessments of participants' knowledge.

Statistical Analysis: Data collected from pre- and post-intervention assessments were analyzed using appropriate statistical methods to evaluate the teaching program's effectiveness.

Data Collection: Data collection was conducted through structured questionnaires administered before and after the educational intervention. The questionnaires were designed to assess the knowledge level regarding the importance and method of daily fetal movement counting.

RESULTS AND DISCUSSIONS

The effectiveness of the teaching program aimed at enhancing primigravidae's knowledge on daily fetal movement counting was evaluated through a comparison of pre- and post-intervention knowledge levels among participants. Initially, half of the participants (50%, n = 30) were classified with a low level of knowledge regarding fetal movement counting. Following the intervention, this proportion dramatically decreased to 8.3% (n = 5), indicating a significant reduction in the number of participants with low knowledge levels. The odds ratio (OR) of 0.10, with a 95% confidence interval (CI) ranging from 0.03 to 0.33 and a $p<0.001$, signifies a substantial increase in knowledge levels among participants. Conversely, the proportion of participants with a moderate level of knowledge saw a slight decrease from 33.3% (n = 20) pre-intervention to 25% (n = 15) post-intervention. The odds ratio for moving from a moderate to a higher level of knowledge was 1.14, with a 95% CI of 0.44 to 2.94, indicating no statistically significant change, as reflected by a p-value of 0.782. Most notably, there

Table 1: Impact of structured teaching program on knowledge of daily fetal movement count

Knowledge Level	Pre-Intervention n(%)	Post-Intervention n(%)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Low	30 (50)	5 (8.3)	0.10	0.03-0.33	<0.001
Moderate	20 (33.3)	15 (25)	1.14	0.44-2.94	0.782
High	10 (16.7)	40 (66.7)	12.00	4.37-32.89	<0.001

was a remarkable increase in the proportion of participants classified with a high level of knowledge from 16.7% (n = 10) before the intervention to 66.7% (n = 40) after the intervention. The odds of participants achieving a high level of knowledge post-intervention were 12 times that of the pre-intervention period, with an OR of 12.00 and a 95% CI of 4.37-32.89. This increase is statistically significant, as demonstrated by a P-value of less than 0.001. The observed results from the study on the effectiveness of a teaching program to enhance knowledge of daily fetal movement counting among primigravidae show a significant improvement in participants' understanding post-intervention. Specifically, the data reveal a substantial decrease in the proportion of participants with low knowledge levels, from 50% pre-intervention to 8.3% post-intervention and a remarkable increase in those with high knowledge levels, from 16.7%-66.7. These changes are statistically significant, as evidenced by p-values of less than 0.001 for both the low and high knowledge categories.

Comparatively, other studies in the field have reported similar findings, emphasizing the efficacy of targeted educational interventions in improving pregnant women's knowledge and confidence regarding fetal health monitoring practices. For example, a study by Afefy *et al*.[9] and El-Adham *et al*.[10] demonstrated a significant increase in the awareness and understanding of fetal movements following an antenatal educational program, which aligns with the results observed in our study. Furthermore, Cunen *et al*.[11] and Mahmoud *et al*.[12]. found that structured teaching significantly improved knowledge retention about fetal movement counting, further supporting the notion that educational interventions can positively impact maternal health literacy.

However, it is worth noting that the moderate knowledge level group in our study did not show a statistically significant change (OR 1.14, 95% CI 0.44-2.94, p-value 0.782). This outcome suggests that while the program was effective in moving participants from low to high knowledge levels, it had less impact on those already at a moderate knowledge level. This finding mirrors the results of a study by Zhang *et al*.[13]. and Wouk *et al*.[14]. which suggested that educational programs might have variable effects on different baseline knowledge levels, indicating the need for tailored educational approaches. In light of these observations, our study contributes to the growing body of evidence supporting the effectiveness of structured teaching programs in antenatal care. It also highlights the importance of continually evaluating and adapting educational content to meet the diverse needs of pregnant women, ensuring all participants can achieve a high level of knowledge and confidence in monitoring fetal well-being.

CONCLUSION

The study on the impact of a structured teaching program on the knowledge of daily fetal movement count among primigravidae has yielded compelling evidence of the program's effectiveness. Our findings demonstrate a significant enhancement in the participants' understanding of how to monitor fetal movements-a crucial component of prenatal care that empowers expectant mothers to actively participate in the health and well-being of their unborn children. Before the intervention, a substantial portion of the study participants exhibited low levels of knowledge regarding daily fetal movement counting. However, following the structured teaching program, there was a remarkable shift, with a significant decrease in the proportion of participants with low knowledge and a corresponding increase in those with high knowledge. This transformation underscores the efficacy of the teaching program in not only elevating the overall knowledge base but also in potentially contributing to improved prenatal care outcomes by facilitating early detection of fetal distress. The study's results are in alignment with existing research, reinforcing the value of targeted educational interventions in antenatal care settings. By focusing on the specific needs of primigravidae, who may not have prior experience with pregnancy and fetal health monitoring, the structured teaching program successfully addressed a critical gap in maternal health education.

In conclusion, the structured teaching program has proven to be a vital tool in enhancing primigravidae's knowledge and understanding of daily fetal movement counting. Its success highlights the importance of incorporating such educational interventions into routine antenatal care practices. Moving forward, it is imperative to continue exploring and refining educational strategies to ensure that all pregnant women, regardless of their prior knowledge or experience, have the skills and confidence to monitor their pregnancy effectively. This study not only contributes valuable insights to the field of maternal and fetal health but also sets a precedent for future research and practice aimed at optimizing antenatal education and care.

Limitations of Study

Sample Size and Generalizability: The study was conducted with a relatively small sample size of 60 participants, which may limit the generalizability of the findings. Larger studies are needed to confirm these results across different populations and settings.

Single-Center Design: The research was carried out in a single geographical location, specifically within tertiary healthcare centers. This setting may not fully represent the diverse experiences and educational needs of primigravidae across different regions or healthcare systems, potentially affecting the applicability of the findings to broader populations.

Self-Reported Data: The study heavily relied on self-reported measures of knowledge, which can introduce bias. Participants might have provided socially desirable answers or may not accurately recall their level of understanding, impacting the validity of the results.

Lack of Control Group: The absence of a control group that did not receive the intervention limits the ability to attribute changes in knowledge solely to the structured teaching program. Other factors, such as personal research by participants or informal advice from healthcare professionals, could also influence knowledge levels.

Short-Term Follow-Up: The study evaluated the immediate impact of the teaching program on knowledge without assessing long-term retention. It remains unclear whether the increased understanding of daily fetal movement counting is sustained over time, which is crucial for ongoing fetal monitoring.

Heterogeneity of Participants: While the study targeted primigravidae, there might have been variability in the participants' educational backgrounds, health literacy levels and access to information resources. These factors could influence the efficacy of the teaching program and were not thoroughly examined.

No Assessment of Behavioral Change: The study focused on knowledge acquisition without directly measuring changes in behavior regarding fetal movement monitoring. An increase in knowledge does not necessarily translate to practical application, which is essential for the intended goal of enhancing prenatal care.

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