A Quasi-Experimental Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Postnatal Complications Among High-Risk Antenatal Mothers Attending Antenatal Outpatient Department At Index Medical College Hospital & Research Centre, Indore, Madhya Pradesh

Divya Pathak[1], Dr. Prabhanshu Vyas[2]

[1]Ph.D. Scholar, [2]Ph.D. Guide, Faculty of Nursing Sciences, Malwanchal University, Indore, India

ABSTRACT

Background:
High-risk pregnancy is a major public health concern and is associated with increased maternal morbidity and mortality. Factors such as anemia, gestational diabetes, antepartum hemorrhage, and hypertension increase the risk of postnatal complications like postpartum hemorrhage, puerperal sepsis, perineal injuries, and eclampsia. Early identification of risks and timely education can significantly reduce complications.

Aim:
The study aimed to assess the effectiveness of a structured teaching programme (STP) on knowledge regarding postnatal complications among high-risk antenatal mothers.

Methods:
A quasi-experimental, non-equivalent pre-test–post-test control group design was used. The study was conducted among **300 purposively selected high-risk antenatal mothers** (150 control, 150 experimental) attending the antenatal outpatient department of **Index Medical College Hospital & Research Centre, Indore, Madhya Pradesh**. Data were collected using a socio-demographic proforma and a structured knowledge interview schedule comprising 30 items. The experimental group received the STP, and post-test was conducted on day seven. Data were analyzed using descriptive statistics (frequency, percentage, mean, SD) and inferential statistics (paired t-test, Chi-square test).

Results:
In the experimental group, the mean knowledge score improved from **16.9 ± 3.2** (pre-test) to **23.2 ± 2.5** (post-test), showing a significant gain (t = 11.36, p < 0.05). Knowledge grading revealed that **56.7% of participants achieved excellent knowledge** post-intervention, compared to 0% in pre-test. In contrast, the control group showed no significant improvement (pre-test mean 16.8 ± 3.5; post-test mean 16.5 ± 3.6, p > 0.05). A significant association was found between post-test knowledge scores and education (p = 0.002) and occupation (p = 0.017).

Conclusion:
The structured teaching programme was effective in significantly improving knowledge regarding postnatal complications. Regular implementation of such educational interventions in antenatal clinics is recommended to reduce preventable maternal complications and improve maternal health outcomes.

Keywords: Structured Teaching Programme, High-Risk Pregnancy, Postnatal Complications, Maternal Knowledge, Antenatal Education

INTRODUCTION

Pregnancy is a natural physiological process, but some women face complications that categorize them as "high-risk." High-risk pregnancy may arise due to pre-existing conditions or complications that develop during gestation. Common risk factors include anemia, gestational diabetes, hypertension, antepartum hemorrhage, and adverse obstetric history. These conditions can lead to severe postnatal complications such as postpartum hemorrhage, puerperal sepsis, perineal trauma, and eclampsia, which remain leading causes of maternal morbidity and mortality in developing countries.

Providing focused, structured, and culturally sensitive health education during antenatal care can significantly improve awareness and empower women to prevent, recognize, and seek early treatment for complications.

NEED FOR THE STUDY

Pregnancy and childbirth are considered natural physiological processes, yet they are often associated with significant maternal risks, especially in high-risk pregnancies. According to the **World Health Organization (2023)**, approximately **287,000 women die every year** from pregnancy- and childbirth-related complications, most of which are preventable with timely interventions and education.

High-risk pregnancies—characterized by conditions such as **anemia, gestational diabetes mellitus (GDM), hypertension, antepartum hemorrhage, and adverse obstetric history**—are strongly associated with increased rates of postnatal complications, including **postpartum hemorrhage, puerperal sepsis, perineal injuries, pre-eclampsia, and eclampsia**. These complications contribute substantially to maternal morbidity and mortality, particularly in developing countries like India.

Despite the availability of antenatal services, studies have shown that **knowledge gaps** exist among antenatal mothers regarding postnatal warning signs, prevention, and management of complications. Lack of awareness often delays health-seeking behavior, resulting in preventable maternal deaths. The **Sample Registration System (SRS) 2022 report** indicates that India's maternal mortality ratio (MMR) is **97 per 100,000 live births**, and Madhya Pradesh is among the states with a higher MMR compared to the national average, emphasizing the urgent need for interventions targeting maternal health education.

Structured teaching programmes (STPs) have been proven to be effective, low-cost, and practical methods to improve awareness, empower mothers, and promote early recognition of complications. When delivered systematically during antenatal visits, STPs help mothers acquire knowledge, change attitudes, and adopt safer practices.

Given the high prevalence of high-risk pregnancies reported in tertiary care settings like **Index Medical College Hospital & Research Centre, Indore**, there is a strong need to evaluate the effectiveness of structured teaching programmes in improving knowledge regarding postnatal complications. This study is therefore an important step toward **bridging the knowledge gap**, **enhancing maternal outcomes**, and **contributing to the national goal of reducing maternal mortality** under the Sustainable Development Goals (SDG-3).

METHODOLOGY

Research Approach and Design

A **quantitative research approach** with **quasi-experimental non-equivalent pre-test–post-test control group design** was used.

Setting

The study was conducted at the **antenatal outpatient department (OPD)** of **Index Medical College Hospital & Research Centre, Indore, Madhya Pradesh**.

Sample and Sampling Technique

- **Sample Size:** 300 high-risk antenatal mothers (150 in control group, 150 in experimental group)
- **Sampling Technique:** Non-probability purposive sampling

Criteria for Selection

- **Inclusion:** Last-trimester high-risk antenatal mothers (anemia, hypertension, GDM, APH, bad obstetric history), willing to participate, able to understand Hindi/English
- **Exclusion:** Mothers with normal pregnancies or in 1st/2nd trimester

Tool Development

- **Section I:** Socio-demographic proforma (10 variables)
- **Section II:** Structured Teaching Programme (definition, complications, prevention, management)
- **Section III:** Structured Knowledge Interview Schedule (30 MCQs, max score = 30)

Validity & Reliability

Content validity was established by eight subject experts. Reliability was tested using test-retest method (Karl Pearson's coefficient = 0.8), indicating the tool was reliable.

Data Collection Procedure

- **Day 1:** Pre-test administered to both groups
- **Day 1:** Structured Teaching Programme delivered to experimental group (lecture + discussion + AV aids)
- **Day 7:** Post-test conducted for both groups

Ethical Considerations

- Ethical clearance obtained from Institutional Ethics Committee
- Written permission taken from hospital authorities
- Informed consent obtained from all participants
- Confidentiality and anonymity were maintained

Plan of Data Analysis

Data were analyzed using:

- **Descriptive statistics:** Frequency, percentage, mean, SD
- **Inferential statistics:** Paired t-test, Chi-square test, ANOVA
- Level of significance set at $p < 0.05$

RESULTS

Knowledge Grading of High-Risk Antenatal Mothers (N = 300)

| Level of Knowledge	Score Range	Control Group (n=150)		Experimental Group (n=150)	
		Pre-Test *(f, %)*	Post-Test *(f, %)*	Pre-Test *(f, %)*	Post-Test *(f, %)*
Poor	00–07	15 (10%)	18 (12%)	10 (6.7%)	0 (0%)
Average	08–15	42 (28%)	45 (30%)	50 (33.3%)	15 (10%)
Good	16–24	93 (62%)	87 (58%)	90 (60%)	50 (33.3%)
Excellent	25–30	0 (0%)	0 (0%)	0 (0%)	85 (56.7%)
Mean ± SD	–	**16.8 ± 3.5**	**16.5 ± 3.6**	**16.9 ± 3.2**	**23.2 ± 2.5**

Interpretation:

- **Control Group:** There was no significant change in knowledge levels from pre-test to post-test. Majority remained in the "Good" category (62% → 58%), and a slight increase in "Poor" category was observed.
- **Experimental Group:** There was a dramatic shift toward higher knowledge levels post-intervention — **56.7% achieved "Excellent" knowledge** compared to none in the pre-test.
- This demonstrates that the **Structured Teaching Programme** was highly effective in improving knowledge.
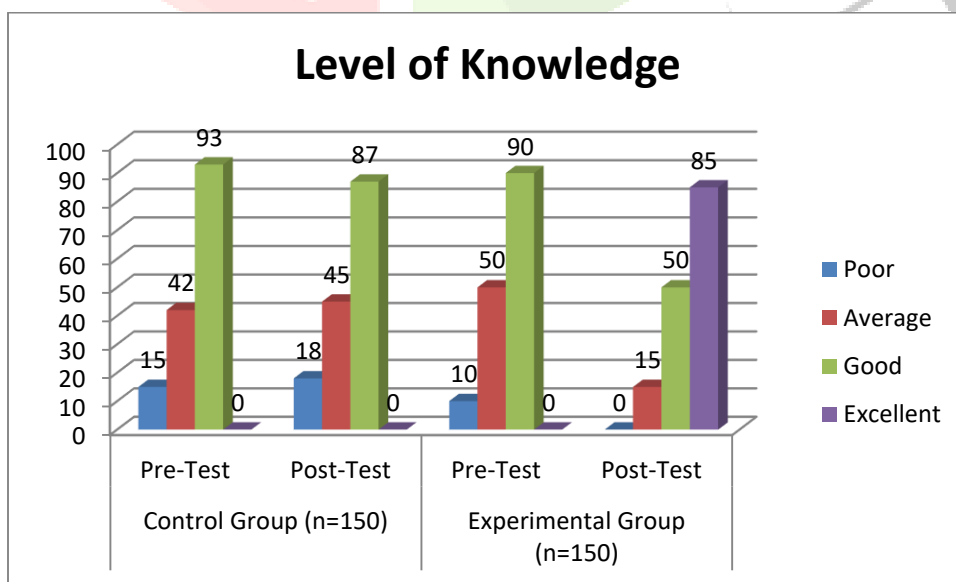
Comparison of Pre-Test and Post-Test Knowledge Scores

Group	Pre-Test Mean ± SD	Post-Test Mean ± SD	Mean Difference	t-value	p-value
Control (n = 150)	16.8 ± 3.5	16.5 ± 3.6	-0.3	0.42	> 0.05 (NS)
Experimental (n = 150)	16.9 ± 3.2	23.2 ± 2.5	+6.3	11.36	< 0.05 (S)

Interpretation: The mean knowledge score significantly improved in the experimental group, confirming the effectiveness of the intervention.
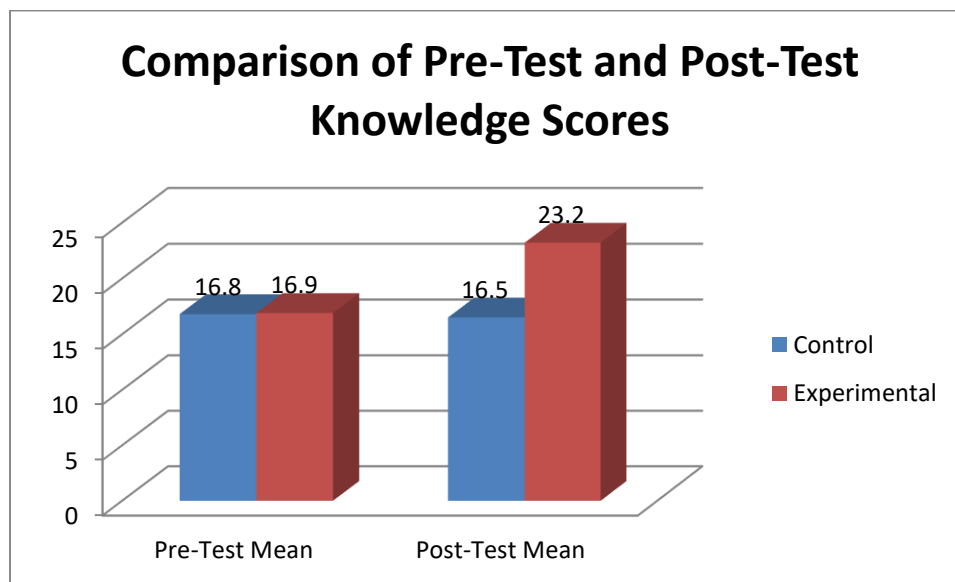
Association with Socio-Demographic Variables

Variable	χ^2 Value	p-value	Significance
Education	15.28	0.002	Significant
Occupation	10.91	0.017	Significant
Age	2.13	0.24	NS
Type of Family	1.85	0.31	NS

DISCUSSION

The present study aimed to assess the effectiveness of a **Structured Teaching Programme (STP)** on knowledge regarding postnatal complications among high-risk antenatal mothers. Findings revealed a significant improvement in knowledge scores in the experimental group following the intervention, whereas the control group showed no appreciable change.

The mean post-test knowledge score of the experimental group (23.2 ± 2.5) was markedly higher than its pre-test score (16.9 ± 3.2), indicating that the STP was effective. More than half of the participants (56.7%) in the experimental group achieved an "Excellent" level of knowledge after the intervention compared to none in the pre-test. This finding is consistent

with Mathew (2006), who reported a significant increase in mean knowledge scores following a structured teaching programme for antenatal women.

The study also demonstrated a statistically significant association between post-test knowledge scores and selected demographic variables such as **education** (p = 0.002) and **occupation** (p = 0.017). This highlights the influence of literacy and socio-economic factors on health knowledge acquisition. Similar associations have been reported by Kumari et al. (2019), who emphasized that education level is a strong predictor of maternal health awareness.

Overall, the findings confirm that structured health education is an effective, low-cost, and feasible intervention that can be incorporated into routine antenatal care to empower mothers with knowledge about potential postnatal complications and preventive strategies.

CONCLUSION

The study concludes that a **Structured Teaching Programme** significantly improves knowledge regarding postnatal complications among high-risk antenatal mothers. The intervention was found to be highly effective in shifting participants from "good" to "excellent" knowledge levels.

Improved knowledge can lead to early recognition of danger signs, better compliance with medical advice, and ultimately a reduction in maternal morbidity and mortality. Therefore, incorporating structured teaching programmes into routine antenatal services can play a pivotal role in achieving better maternal health outcomes.

SUMMARY

This quasi-experimental study was conducted among **300 purposively selected high-risk antenatal mothers** attending the antenatal OPD of **Index Medical College Hospital & Research Centre, Indore**. The sample was divided equally into control (n = 150) and experimental (n = 150) groups.

- **Tool:** Socio-demographic proforma and structured knowledge interview schedule (30 items).
- **Intervention:** Structured Teaching Programme on postnatal complications administered to experimental group.
- **Results:**
    - **Experimental Group:** Mean knowledge score improved from **16.9 ± 3.2** (pre-test) to **23.2 ± 2.5** (post-test).
    - **Control Group:** Mean score remained nearly unchanged (**16.8 ± 3.5 → 16.5 ± 3.6**).
    - Significant association was found between post-test knowledge scores and **education** & **occupation**.

Key Inference: The STP was **highly effective** in enhancing maternal knowledge regarding postnatal complications.

RECOMMENDATIONS

- Conduct similar studies with a **larger sample size** across multiple hospitals for generalization.
- Longitudinal studies to evaluate **knowledge retention** and **behavioral change**.
- Community-level health education sessions for husbands and family members to ensure holistic maternal care.

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