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Efficacy of Educational Intervention on Knowledge Regarding High-Risk Pregnancy and Its Management in Terms of Knowledge Gain Among Antenatal Women

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Abstract

Background: *High-risk pregnancies are associated with increased maternal and fetal complications and require timely identification and proper management. Many antenatal women have limited knowledge regarding high-risk conditions and the necessary precautions. Structured teaching programs can significantly improve awareness and empower mothers to take proactive steps for safe pregnancy outcomes.* ***Aim:*** *To assess the effectiveness of a structured teaching program on knowledge regarding high-risk pregnancy and its management among antenatal women attending selected clinics in District Hospital, Durg, Chhattisgarh.* ***Methods:*** *A pre-experimental one-group pre-test post-test design was adopted to assess the effectiveness of a structured teaching program on knowledge regarding high-risk pregnancy and its management. The study was conducted among antenatal women selected through purposive sampling at a designated healthcare facility. A structured knowledge questionnaire was administered before and after the educational intervention. The teaching program covered key areas such as types of high-risk pregnancy, associated signs and symptoms, preventive strategies, and the importance of regular antenatal care. Both descriptive and inferential statistical methods were employed for data analysis.* ***Results:*** *The study findings demonstrated a significant improvement in post-test knowledge scores compared to pre-test scores, indicating that the structured teaching program was effective in enhancing the knowledge of antenatal women regarding high-risk pregnancy and its management.* ***Conclusion:*** *The structured teaching program proved to be effective in improving knowledge levels among antenatal women. Incorporating such educational interventions into routine antenatal care services can strengthen maternal awareness, promote timely health-seeking behavior, and ultimately contribute to improved maternal and neonatal health outcomes.*

Keywords: Antenatal women, high-risk pregnancy, knowledge improvement, maternal health, structured teaching program.

INTRODUCTION

Most pregnancies progress naturally. After a full-term gestation, a woman typically goes into labor around her due date and gives birth to a healthy baby. Within a short period, she is discharged from the hospital and begins life with her newborn. However, not all pregnancies follow this smooth course. Some women experience what clinicians refer to as a high-risk pregnancy. A pregnancy is classified as high-risk when there are potential complications that may affect the mother, the fetus, or both. Such pregnancies require close monitoring and management by specialists to ensure the best possible outcomes.

The risk factors associated with high-risk pregnancies vary in severity. Several maternal behaviors and conditions – such as smoking, poor

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nutritional habits, substance, and alcohol abuse, domestic violence, and inadequate health care – significantly increase the likelihood of complications. Additionally, pre-pregnancy maternal health status, psychological factors, chronic medical conditions, a history of preterm births, multiple gestation, and fetal or placental abnormalities also contribute to increased risk. A woman with a high-risk pregnancy may experience early onset of labor or various symptoms depending on the underlying maternal or fetal condition. Because the placenta provides essential nutrients and oxygen to the fetus, any condition that compromises placental blood flow directly threatens fetal growth and development.

Motherhood is a vital and transformative aspect of a woman's life. Traditionally, maternal and child health services in developing countries have relied on vertical programs using standardized approaches. Alarmingly, 99 percent of all maternal deaths occur in developing nations. Limited resources, economic constraints, and shortages of qualified doctors, nurses, and necessary infrastructure hamper efforts to reduce maternal mortality. However, strengthening the skills of existing health workers and implementing cost-effective strategies can significantly reduce maternal deaths and obstetric complications.

Although every pregnancy carries some degree of risk, certain categories place the mother, fetus, and newborn at a particularly elevated risk for complications during pregnancy and labor. One of the core functions of a health care system is to ensure an efficient referral structure that promotes continuity of care and builds trust among service users. Unfortunately, in many developing countries, the referral system remains weak. Rural health units often lack skilled personnel, essential equipment, and facilities to manage obstetric emergencies. This leads to frequent referrals to district hospitals; however, these referrals are often delayed, resulting in preventable neonatal losses and increased maternal mortality.

LITERATURE REVIEW

A study was conducted to assess the condition of women with high-risk pregnancies who were being managed at home. The findings revealed that many women with complications, such as pregnancy-induced hypertension and preterm labor, were receiving care in the home setting. The use of specialized assessment tools designed to detect subtle changes in the health status of both the mother and the fetus enabled home health care nurses to play a crucial role in influencing treatment decisions and improving pregnancy outcomes [1].

Identification of Risk Factor and Health Care Acceptance in Perinatology

The goal of study was to develop a predictive model for pregnancy based on risk factors data recorded and the risk factors were identified during pregnancy. Then disease state and risk level are classified. The findings relevant that among single, malformations, diabetes, toxemia, IUGR, premature, rupture of membrane covered 25 percent of all pregnancy. But explained 64 percent of maternal hospitalized, 90 percent of mother hospitalized and who had the delivery before 37 percent had at least one of these disease states. But 85 percent of women did not have one of these disease classes, had a normal pregnancy and delivery [2].

Toxoplasmosis and Bad Obstetric History

Toxoplasmosis is a well-documented cause of bad obstetric history (BOH) and a major source of congenital infection. A study conducted at the antenatal clinic of Mamata General Hospital, Khammam, Andhra Pradesh, the seropositivity of toxoplasmosis among 105 antenatal women with BOH and 105 women with previous normal deliveries. Serological analysis for Toxoplasma gondii-specific IgG and IgM antibodies assessed using ELISA revealed a seropositivity rate of 49.52 percent in the study group compared to 12.38 percent in the control group, with a statistically significant difference (p=0.00). The prevalence increased with maternal age. Among affected women, abortion (51.92 percent) was the most common pregnancy wastage, followed by stillbirths (36.53 percent) and preterm deliveries (7.69 percent). The study concluded that toxoplasmosis seropositivity significantly influences fetal outcomes and recommended routine serological screening for all pregnant women due to the infection's often subclinical presentation [3].

Prevalence of Anemia Among Pregnant Women

A study conducted at an urban health center in Aurangabad examined the prevalence of anemia and associated sociodemographic factors among pregnant women. Anemia accounts for nearly one-fifth of maternal deaths globally and contributes significantly to low birth weight and preterm births. In India, approximately 16 percent of maternal deaths are attributed to anemia. Using systematic random sampling, 352 pregnant women were enrolled after pregnancy confirmation. The study found an alarmingly high prevalence of anemia (87.21 percent). Factors, such as religion, education level of the woman and her husband, and socioeconomic status, were significantly associated with anemia prevalence. This study highlighted the need for targeted interventions to address anemia among vulnerable populations [4].

Maternal Mortality Associated with Eclampsia and Pre-Eclampsia

A retrospective study conducted at PGI Chandigarh analyzed maternal mortality due to eclampsia and pre-eclampsia over a 17-year period. A total of 69 maternal deaths were reviewed – 61 of eclampsia and 8 from pre-eclampsia. The analysis examined maternal condition at admission, associated complications, and causes of death. Results indicated that the time interval between hospital admission and death ranged from 1–24 hours. Twenty women (28.9 percent) died undelivered, 23 (37.7 percent) presented in grade IV coma, and 52.4 percent experienced recurrent convulsions. Major complications included hemorrhage (30.4 percent), jaundice (18.8 percent), aspiration pneumonia (17.8 percent), and pulmonary edema (5.8 percent). The study emphasized that maternal mortality was significantly lower when magnesium sulfate was used as the anticonvulsant of choice [5].

Physical Activity and Risk of Gestational Diabetes Mellitus

A prospective cohort study conducted in Seattle and Tacoma, Washington, investigated the association between maternal physical activity and the risk of gestational diabetes mellitus (GDM). The study included 909 normotensive, non-diabetic women interviewed during early pregnancy regarding physical activities performed during the year before conception and the week prior to the interview. Compared with inactive women, those who engaged in any physical activity during the pre-pregnancy year showed a 56 percent risk reduction in GDM (RR = 0.44; 95 percent CI: 0.21–0.91). Women who participated in ≥4.2 hours/week of physical activity had a 76 percent risk reduction (RR = 0.24; 95 percent CI: 0.10–0.64), while those expending ≥21.1 MET-hours/week had a 74 percent reduction (RR = 0.26; 95 percent CI: 0.10–0.65). Physical activity during pregnancy further reduced risk, and women active during both time periods experienced a 69 percent risk reduction (RR = 0.31; 95 percent CI: 0.12–0.79). The findings suggest that promoting maternal physical activity may significantly lower the risk of GDM [6–8].

METHODOLOGY

A pre-experimental one-group pre-test post-test design was adopted to assess the effectiveness of a structured teaching program on knowledge regarding high-risk pregnancy and its management. The study was conducted among antenatal women attending clinics at a selected district hospital in Durg, Chhattisgarh. A total of 60 participants were selected through purposive sampling. Data were collected using a structured knowledge questionnaire developed for the study. Initially, a pre-test was administered to assess baseline knowledge. This was followed by the implementation of a structured teaching program focusing on types of high-risk pregnancy, associated risk factors, signs, and symptoms, preventive measures, and the importance of antenatal care. After a predetermined interval, a post-test was conducted using the same tool to evaluate knowledge gain among the participants. The collected data were analyzed using both descriptive and inferential statistical methods to determine the effectiveness of the intervention [9, 10].

RESULTS AND FINDINGS

The study included a total of 60 antenatal women. Pre-test knowledge scores revealed that 83.3 percent of participants had adequate knowledge, 16.6 percent had inadequate knowledge, and none of them had moderate knowledge regarding high-risk pregnancy and its management.

After the structured teaching program, post-test scores showed that 81.7 percent of participants moderate excellent knowledge, 18.3 percent had adequate knowledge, and none of them remained in average knowledge.

The mean pre-test knowledge score was 13.12 ± 3.13, whereas the mean post-test score increased significantly to 23.35 ± 2.43. The observed difference was statistically significant ($p < 0.05$), indicating that the structured teaching program was effective in enhancing the knowledge of antenatal women regarding high-risk pregnancy and its management.

Figures and Tables

Figures 1 and 2 show a significant improvement in knowledge among antenatal women after the intervention. In the pretest, 46.7 percent had inadequate knowledge and 53.3 percent had moderate knowledge, with no participants demonstrating adequate knowledge. Posttest findings revealed that 81.7 percent achieved adequate knowledge and 18.3 percent had moderate knowledge. The box plot (Figure 2) further demonstrates a clear increase in median and overall knowledge scores in the posttest compared to the pretest, confirming the effectiveness of the planned teaching program.

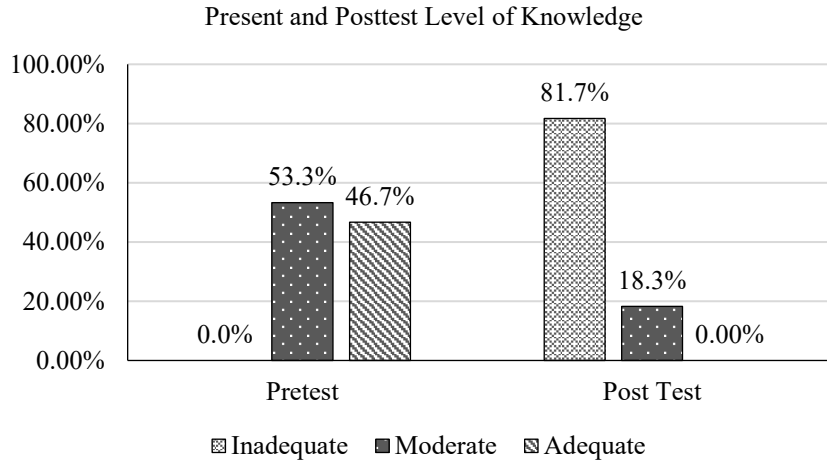

Figure 1. Pretest and posttest level of knowledge.

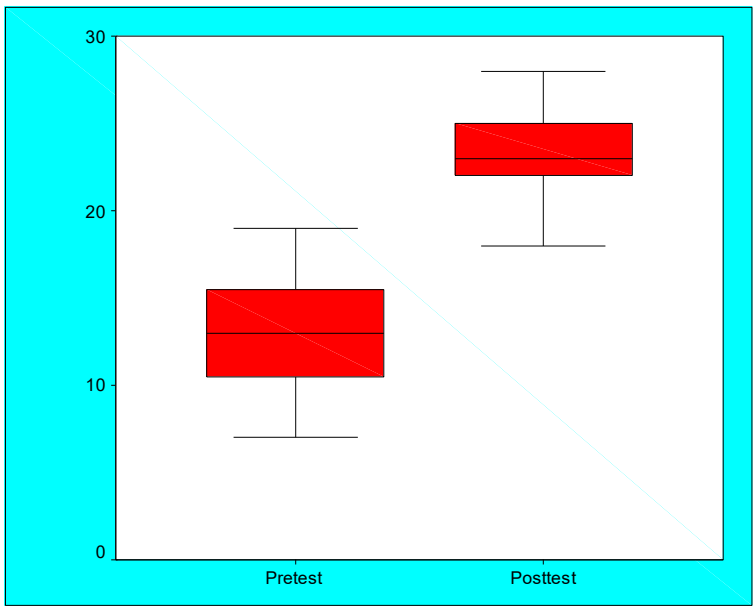

Figure 2. Comparison of pretest and posttest knowledge scores among antenatal women.

IMPLEMENTATION

The structured teaching program was implemented in the antenatal clinics of the selected district hospital in Durg, Chhattisgarh. The intervention was conducted in a group setting, where antenatal women were gathered and educated using a pre-designed teaching plan. The content covered key aspects of high-risk pregnancy, including definition, risk factors, warning signs, complications, and preventive measures.

Educational aids, such as charts, posters, and flipbooks, were used to make the session interactive and easy to understand. Each session lasted approximately 30–40 minutes, followed by a question–answer round to clarify doubts. The program was delivered in the local language (Hindi) to ensure better understanding and participation.

Follow-up evaluation was conducted using a post-test questionnaire to assess knowledge gain. The teaching program was found to be feasible, cost-effective, and well-accepted by the antenatal women.

CONCLUSIONS

The study shows that most subjects had excellent and good knowledge after structured teaching program. The structured teaching program facilitates them to update their knowledge regarding high-risk pregnancy and its management. The study findings revealed that the structured teaching program was effective in enhancing the knowledge of antenatal women regarding high-risk pregnancy and its management. The significant improvement in post-test knowledge scores compared to pre-test scores demonstrates that educational interventions play a vital role in empowering pregnant women with essential information. Integrating such programs into routine antenatal care can promote early identification, prevention, and management of complications, thereby improving both maternal and fetal outcomes. Thus, the structured teaching program proved to be an effective strategy for improving the knowledge of antenatal women regarding high-risk pregnancy and its management.

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