

# EFFECTIVENESS OF AN AWARENESS PROGRAM ON THE KNOWLEDGE REGARDING WARNING SIGNS OF HIGH-RISK PREGNANCY AMONG ANTENATAL MOTHERS

Ms. Ananya Mondal<sup>1</sup> Tanisha Sharma<sup>2</sup> Riya Patel<sup>3</sup> Zalak Chaudhary<sup>4</sup>

<sup>1</sup>Assistant Professor, Department of Obstetrics and Gynecology, Faculty of Nursing, Parul University, Vadodara, Gujarat India.

<sup>2-4</sup>BSc Nursing students, Parul Institute of Nursing, Parul University, Vadodara, Gujarat, India.

**Corresponding Author:** Ms. Ananya Mondal

Address:- A1- 302, Amardeep Heritage, Near Kamla Nagar, Nehru Chacha Nagar, Sayaji Park Society, Vadodara, Gujarat-390019, India. ORCID ID: 0009-0002-7226-3566.

Email Id: - [sepco.ananya@gmail.com](mailto:sepco.ananya@gmail.com)

DOI: 10.63001/tbs.2025.v20.i04.pp241-251

## KEYWORDS:

High-risk pregnancy, warning signs, awareness program, antenatal mothers, maternal health.

## Received on:

04-09-2025

## Accepted on:

08-10-2025

## Published on:

08-11-2025

## ABSTRACT

High-risk pregnancies contribute significantly to maternal and fetal morbidity and mortality. Early recognition of warning signs is essential for timely intervention. However, many antenatal mothers lack awareness of these signs. The objectives of this study is to evaluate the effectiveness of an awareness program in improving the knowledge regarding warning signs of high-risk pregnancy among antenatal mothers. A pre-experimental one-group pretest-posttest design was used. The study was conducted among 150 antenatal mothers selected through purposive sampling at hospital. A structured knowledge questionnaire was administered before and after the awareness program. Data were analyzed using descriptive and inferential statistics. The findings revealed that in the pretest phase, 72% of mothers had poor knowledge (scoring 0–4), and only 28% had average knowledge (5–8 score). A substantial 64% of mothers achieved a good knowledge level, and 36% scored in the average range in the posttest phase conducted for the experimental group after the educational intervention. Importantly, none of the participants remained in the poor knowledge category. This data clearly indicates that the nurse-led educational intervention provided to the experimental group was effective in significantly improving their understanding of warning signs related to high-risk pregnancy. The awareness program significantly improved the knowledge of antenatal mothers regarding warning signs of high-risk pregnancy. Health education initiatives should be integrated into routine antenatal care to promote maternal and fetal health.

## INTRODUCTION

Pregnancy is a natural and significant phase in a woman's life, but it is also a period that

demands careful attention and support to ensure the health and well-being of both

mother and baby. While most pregnancies proceed without serious complications, a certain percentage are classified as high-risk pregnancies. High-risk pregnancies pose a significant threat to maternal and fetal well-being. Globally complications during pregnancy and childbirth remain a leading cause of maternal mortality. Early detection of warning signs such as vaginal bleeding, severe headache, blurred vision, or reduced fetal movements can prevent adverse outcomes. These involve a greater chance of health problems either for the mother, the baby, or both. High-risk conditions may arise due to factors such as maternal age (below 18 or above 35 years), pre-existing medical conditions (like hypertension, diabetes, or anemia), multiple pregnancies, previous history of complications, or lifestyle-related issues.

Warning signs of high-risk pregnancy include symptoms that may indicate serious complications. These signs include vaginal bleeding, severe or continuous abdominal pain, persistent vomiting, blurred vision, swelling of hands and face, severe headache, fever, decreased or absent fetal movements, and leaking of amniotic fluid. Failure to recognize and respond to these symptoms

promptly can result in adverse outcomes such as miscarriage, preterm birth, stillbirth, or maternal death. Unfortunately, awareness about these warning signs is often low among antenatal mothers, particularly in rural areas or low-resource settings. Despite the availability of antenatal services, awareness among pregnant women about high-risk symptoms remains inadequate. Pregnancy is a natural physiological process, yet it can sometimes present complications that place both the mother and fetus at risk. These complications, known as high-risk pregnancy conditions, require timely detection and appropriate management. According to the World Health Organization (WHO), around 15% of all pregnant women are likely to experience a pregnancy-related complication. When unrecognized or unmanaged, such complications can lead to severe maternal and neonatal morbidity and mortality. Awareness and knowledge among expectant mothers are critical for early detection and timely medical intervention.

In this context, awareness and education play a crucial role in empowering women to recognize when to seek timely medical care. The role of antenatal care is not only to monitor the physical health of

the mother and fetus but also to provide health education, particularly about danger signs. A structured awareness program during pregnancy can significantly enhance the mother's knowledge, enabling them to identify risks early and seek appropriate medical assistance. When antenatal mothers are knowledgeable, they are more likely to report warning signs promptly, follow medical advice, and participate actively in their care, which ultimately reduces maternal and neonatal mortality. Educating pregnant women about warning signs during antenatal visits has shown significant improvement in health-seeking behavior and outcomes. This study aimed to assess the level of knowledge regarding warning signs of high-risk pregnancy among antenatal mothers before the awareness program and to evaluate the impact of a structured awareness program on improving antenatal mothers' knowledge about warning signs associated with high-risk pregnancies by comparing pretest and posttest scores.

## METHODOLOGY

The present study adopted a pre-experimental, one-group pretest-posttest research design to assess the awareness

regarding warning signs of high-risk pregnancy among antenatal mothers and to evaluate the effectiveness of a structured awareness program on knowledge about warning signs associated with high-risk pregnancies. The study was conducted in the antenatal outpatient departments (OPDs) of selected hospitals in Vadodara, with a total sample size of 150 antenatal mothers. A purposive sampling technique was employed to select participants who met the inclusion criteria. The inclusion criteria is antenatal mothers who are giving consent to participate in the study and all pregnant women attending antenatal OPD and admitted in Antenatal ward in selected hospitals of Vadodara and exclusion criteria is pregnant women not willing to participate, pregnant women with severe medical and obstetric complications.. Permission was obtained from the Parul University Institutional Ethics Committee for Human Research (PU-IECHR) for conducting the study with approval number PIIIECHR/PIMSR/00/081734/82352.

Informed consent was obtained from the participants before data collection. In this study, the tool used had two sections. Section A was Demographic profile which focused on demographic and obstetric

information of the participants, and section B was a Structured Knowledge Questionnaire (12 multiple-choice questions on warning signs). Intervention of this study was a structured awareness program including visual aids and pamphlets was conducted. Data Collection Procedure involved a Pretest which was conducted on the participants, followed by which awareness program was administered on the same day and after that post test was conducted on the same day.

## RESULTS

The present study aimed to evaluate the effectiveness of an awareness program on knowledge regarding warning signs of high-risk pregnancy among antenatal mothers. The results of the study demonstrated a significant improvement in knowledge levels following the intervention, indicating that structured educational programs can be highly effective in increasing awareness among pregnant women.

The majority of participants, around 77.3% were between 25–27 years of age. Majority participants were Hindu (82.7%), followed by a smaller proportion of Muslims and

Christians. Most participants (62.7%) were literate while a notable percentage had only primary education. Very few had secondary education, and none had higher secondary, graduate, or postgraduate qualifications. Occupational data showed that most antenatal mothers were housewives (52%) followed by those in jobs or businesses. No participants reported being students. A large proportion of the sample resided in rural areas (80%), and only 20 % of participants resided in rural areas. In terms of family structure, majority participants (70.7%) were in nuclear families followed by only 29% of participants in joint families.

The majority of participants in the group were *primigravida* mothers. Most mothers were in the first or second trimester — 45.3% in the first trimester and 46.7% in the second trimester. Over half of the participants (57.3%) had fewer than four ANC visits. A significant percentage of mothers 73.3% reported of not having received information about warning signs of high-risk pregnancy during ANC visits. Regarding the place of previous delivery (among multigravida mothers), the majority delivered in government hospitals (56%) . When asked whether they believed warning

signs and obstetric complications are the same, 61.3% answered yes — reflecting some confusion about terminology. Importantly, most participants (over 77.3%) agreed that ignoring warning signs during pregnancy could lead to complications.

This table presents data on the health-seeking behaviours of antenatal mothers in

response to warning signs of high-risk pregnancy. It highlights whom the mothers would contact upon noticing warning signs, the timing of their decision to seek healthcare, their perceptions of potential outcomes if warning signs are ignored, and the steps they believe should be taken to manage such signs.

Table 1 : Health seeking behaviours

Sr. No	Demographic Data	Category	Experimental Group	
			Frequency [F]	Percentage [%]
1	Who should I contact if I notice warning signs during pregnancy	Health care worker	106	70.7
		Health care facilities	44	29.3
		Neighbor	00	00
2	When should I visit a healthcare facility if I notice warning signs during pregnancy	Immediately	94	62.7
		Wait until the condition got serious	56	37.3
		Wait until the time of next appointment	00	00
3	What are the possible outcomes if warning signs during pregnancy are not addressed promptly?	Might lead to death	118	78.7
		Might not lead to death	32	21.3
4	What steps should be taken to manage	Contact with doctor	104	69.3
		Going to hospital	46	30.7

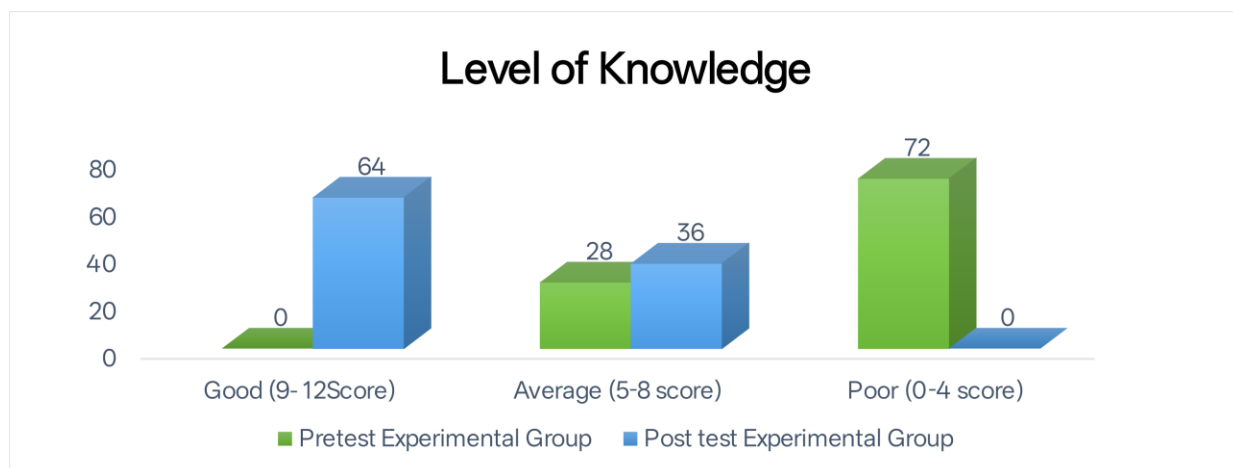
warning signs during the current Pregnancy	Take rest	00	00
--	-----------	----	----

A large proportion of mothers in experimental group demonstrated appropriate awareness of whom to contact upon noticing warning signs, with 70.7% in the experimental group indicating they would reach out to a healthcare worker. When asked about the timing of visiting a healthcare facility upon noticing warning signs, 62.7% reported they would seek care immediately, which is the recommended response. Regarding the consequences of not addressing warning signs, a majority understood the severity of neglecting such

signs, with 78.7% recognizing the possibility of death. In terms of the steps to be taken during high-risk situations, most mothers said they would contact a doctor (69.3%) and the remaining preferred going to the hospital. Notably, none opted for less effective responses such as "taking rest".

This following figure (Fig 1) presents a comparative analysis of antenatal mothers' knowledge levels concerning warning signs of high-risk pregnancy, measured before and after the implementation of a structured awareness program.

Fig 1: Level of knowledge regarding warning signs of high-risk pregnancy among antenatal mothers before and after implementation of awareness program.



The Figure demonstrated that in the pretest phase majority of the mothers (72%) had poor knowledge (scoring 0–4), and only 28% had average knowledge (5–8 score). But in the posttest phase conducted for the experimental group after intervention a substantial 64% of mothers achieved a good knowledge level, and 36% scored in the average range.

## DISCUSSION

The present study aimed to evaluate the effectiveness of an awareness program on knowledge regarding warning signs of high-risk pregnancy among antenatal mothers. The results of the study demonstrated a significant improvement in knowledge levels following the intervention, indicating that structured educational programs can be highly effective in increasing awareness among pregnant women.

This demographic information indicates that most antenatal mothers are young, Hindu, literate but not highly educated, housewives, and from rural and nuclear family settings. Understanding these characteristics is essential for tailoring health education programs on high-risk pregnancy warning signs effectively.

In the present study, most mothers were in the first or second trimester showing that early antenatal care was being accessed. Over half of the participants had fewer than four ANC visits, indicating a potential gap in recommended maternal care practices. A significant percentage of mothers reported having received information about warning signs of high-risk pregnancy during ANC visits suggesting reasonably good health education coverage. Importantly, most participants agreed that ignoring warning signs during pregnancy could lead to complications, showing a general understanding of the seriousness of maternal health issues.

A large proportion of mothers in experimental group demonstrated appropriate awareness of whom to contact upon noticing warning signs, with majority of mothers reported that they would reach out to a healthcare worker. When asked about the timing of visiting a healthcare facility upon noticing warning signs, majority reported they would seek care immediately, which is the recommended response. Regarding the consequences of not addressing warning signs, a majority understood the severity of neglecting such



signs would lead to death. In terms of the steps to be taken during high-risk situations, most mothers said they would contact a doctor and the remaining preferred going to the hospital. Notably, none opted for less effective responses such as "taking rest," which shows a good level of awareness about proper responses.

The mean pretest score revealed that many participants had limited prior knowledge about the warning signs of high-risk pregnancy. This aligns with the findings from a previous study conducted by Radha and Nandyala (2020) which reported that majority of the antenatal mothers were having inadequate knowledge in pretest.

However, the significant increase in posttest scores clearly illustrates that structured awareness programs are successful in bridging these knowledge gaps. The awareness program in this study focused on knowledge regarding the key warning signs such as vaginal bleeding, blurred vision, severe headache, reduced fetal movement, swelling of face or hands, and convulsions. These signs are crucial indicators of potentially life-threatening conditions like preeclampsia, placental abruption, and fetal distress. Many of these complications, if

recognized early, can be managed effectively, preventing maternal and neonatal mortality. Several studies supported these findings. Prabhavathi KP (2025) conducted a study which concluded that Post-test scores after implementation of structured teaching program revealed that 16.67% had inadequate knowledge and 83.33% had adequate knowledge on warning signs of pregnancy. Another study conducted by Yogi et al. (2023) reported that in posttest majority 80% of antenatal women had adequate knowledge level and 20% had moderately adequate knowledge level.

The effectiveness of the program may be attributed to the method of delivery. Visual aids, interactive discussions, and easy-to-understand language were used to engage participants and enhance retention. This aligns with adult learning principles, where involvement and simplicity improve understanding and memory.

## CONCLUSION

This study concluded that a structured awareness program significantly enhanced the knowledge of antenatal mothers regarding warning signs of high-risk



pregnancy. The findings revealed a marked improvement in posttest knowledge scores compared to pretest scores, demonstrating the effectiveness of health education in bridging information gaps. Early recognition of warning signs such as severe headache, vaginal bleeding, swelling, or reduced fetal movements is vital in preventing complications and improving maternal and fetal outcomes. The study supports the integration of targeted health education into routine antenatal care to empower expectant mothers with life-saving information. Additionally, the intervention was well-received and feasible, even among mothers with limited formal education, highlighting the program's adaptability across diverse populations. To strengthen maternal health strategies, similar educational initiatives should be scaled up, especially in rural and underserved areas. Further research with larger, diverse samples is recommended to generalize these findings and evaluate long-term impact.

### FINANCIAL SUPPORT

This study received no financial support from any funding agency, institution, or organization. The Research is self-funded.

### CONFLICTS OF INTEREST

There are no conflicts of interest declared by the authors.

### REFERENCES

1. World Health Organization. Managing complications in pregnancy and childbirth: a guide for midwives and doctors. 2nd ed. Geneva: WHO; 2017. (WHO/MCA/17.02).
1. Radha, Nandyala U. A study to evaluate the effectiveness of awareness program on identification of warning signs of high risk pregnancy among pregnant women in selected hospital. JETIR. 2020;7(2):1276-82.
2. Ashok K, Yadav G Zutshi V, Bodat S. A study to evaluate the effectiveness of awareness program on identification of warning signs of high risk pregnancy among pregnant women in selected hospital. IJR COG. 2019;8(9):3738-43.
3. Al-Ali ZAH, Kadhum S. Knowledge about Obstetric Warning Signs during Pregnancy among Mothers Attending the Primary Health Care Centers in Hilla City. Indian J

- Forensic Med Toxicol. 2020;14(2):894–899.
4. Patel S, Thakur R. Effectiveness of planned teaching programme on knowledge regarding warning signs in pregnancy among primigravida mothers. *Paripex Indian J Res.* 2021;10(1):1–5. doi:10.36106/paripex.
5. Thapa B, Manandhar K. Knowledge on obstetric danger signs among antenatal mothers attending a tertiary level hospital, Nepal. *JCMS Nepal.* 2017;13(4):383–387. doi:10.3126/jcmsn.v13i4.18093.
6. Prabhavathi KP. Effectiveness of a Structured Teaching Programme on Warning Signs of Pregnancy among Primigravida women in selected Maternity Hospital. *International Journal of Nursing Education and Research.* 2025;13(2):112-6. doi: 10.52711/2454-2660.2025.00023
7. Yogi P, Pujari T, Chaturvedi D, Zachariah J, Paliwal C, Paliwal H. Learning package on antenatal and gynecological women's health. Unpublished manual. Indore: SAIMS College of Nursing; 2023.
8. Parthasarathy K, Prasath R, Krishnaraj P. A study to assess the effectiveness of structured teaching program on warning signs during pregnancy in terms of knowledge, practice, and attitude among antenatal mothers. *J Sci Nurs.* 2012;2(1):1–5.
9. Atre S, Keithellakpam M. To assess the knowledge regarding warning signs during pregnancy and subsequent health care seeking actions among primi para mothers in selected health care institutes with the view to develop self-instructional module. *Drugs Cell Ther Hematol.* 2021;10:90–101.
10. M AA. A Study to Assess the Effectiveness of Video Assisted Teaching Programme on Warning Signs of Pregnancy among Primi Gravid Women Attending Outpatient Department of Primary Health Centre, Ariyankuppam at Puducherry. *Pondicherry journal of nursing.* 2017; doi:10.5005/PJN-11-1-8
11. Keithellakpammemchoubi, Mrs & Atre, Mrs.Sonali. (2021). To Assess the Knowledge Regarding Warning

Signs During Pregnancy and  
Subsequent Health Care Seeking  
Actions Among Primi Para Mothers  
in Selected Health Care

Instituteswith The View to Develop  
Self-Instructional Module. Drugs and  
Cell Therapies in Hematology. 10. 1.