International Journal of Enhanced Research in Medicines & Dental Care (IJERMDC),
ISSN: 2349-1590, Vol. 13 Issue 3, March 2026

"A Study to Assess the Knowledge Regarding Selected Warning Signs in Pregnancy among Primi-Gravida Mothers Attending Antenatal Clinic at Selected Hospital of Bangalore with View to Develop Structured Teaching Programme"

Sukanya[1], Chaitan Mary George[2]

[1]Associate Professor, Deopt. of OBG Nursing, Sarvani College of Nursing, Bangalore, India
[2]Associate Professor, Deopt. of Pediatric Nursing, Sarvani College of Nursing, Bangalore, India

ABSTRACT

BACKGROUND: Pregnancy is a natural and beautiful process through which a woman brings new life into the world. However, it is not always free from risks. A significant number of women—nearly 40%—experience some form of complication during pregnancy. Among them, about 15% may face serious, life-threatening conditions that require immediate medical attention. Because of this, it becomes very important for expectant mothers, especially first-time mothers (primi-gravida), to recognize early warning signs. This study was conducted to assess the level of knowledge regarding selected warning signs of pregnancy among primi-gravida mothers in selected hospitals in Bangalore, with the aim of developing a structured teaching programme to improve their awareness.

METHODS: Nnon experimental descriptive design was used in the study. The data was collected from 60 subjects in K C General Hospital, through convenient sampling technique. Data was collected using structured questionnaire.

MAJOR FINDINGS OF THE STUDY: The findings of the study revealed that Majority 51.7% of the Primi-gravida mothers had inadequate knowledge and 46.7% had moderate knowledge and 1.7% had adequate knowledge. The overall analysis of level of knowledge of primi-gravida mothers regarding selected warning signs in pregnancy showed that mean knowledge score obtained by the subjects was 11.93 (47.72%) with standard deviation 5.115.

INTERPRETATION AND CONCLUSION: The study found a significant association between knowledge levels and certain demographic variables such as age, religion, and education ($p < 0.05$). This highlights the need for targeted educational interventions. Overall, the findings suggest that many first-time mothers lack sufficient knowledge about pregnancy warning signs, emphasizing the importance of structured teaching programmes to promote early recognition and timely medical care.

Keywords: Knowledge, primi-gravida mothers; selected warning signs in pregnancy; knowledge; structured teaching programme.

INTRODUCTION

Motherhood is a significant and meaningful phase in a woman's life. When a woman conceives and gives birth, she is often viewed as fulfilling an important role, both personally and socially. Across cultures and countries, pregnancy and childbirth are widely celebrated, as they mark the beginning of new life and strengthen family bonds.

According to the World Health Organization (WHO), pregnancy and childbirth are special events not only for women but also for their families. This period is often filled with hope, excitement, and anticipation. However, it can also bring fear, complications, and, in some cases, life-threatening situations. Although pregnancy is a normal physiological process and not a disease, it carries certain risks that can affect both the mother and the baby. These risks exist in all societies, but in developed countries, they are largely minimized due to better healthcare services and regular antenatal

care. In contrast, in many developing countries, pregnancy can still be unpredictable and dangerous due to inadequate healthcare facilities and limited access to skilled care.[1]

Research highlights that while nature has given women the ability to bear children, this process is not without challenges. Nearly 40% of pregnant women experience some form of complication during pregnancy, and about 15% develop serious conditions that require immediate medical attention. Maternal death not only affects the woman but also has a lasting impact on her children and family. It is therefore not just a health issue but also a matter of social inequality and injustice.[2]

Globally, maternal mortality remains a major concern. The WHO reports that there are approximately 430 maternal deaths per 100,000 live births worldwide. This number rises to around 480 per 100,000 live births in developing countries, compared to only 27 per 100,000 live births in developed nations, highlighting a wide disparity in maternal health outcomes.[3]

In India, many women still lack adequate knowledge regarding antenatal, intranatal, and postnatal care. Factors such as illiteracy, poverty, poor transportation, and limited communication facilities increase their vulnerability to complications. Despite being central to family health and wellbeing, many women are unable to access their basic right to healthcare. The loss of a mother significantly affects the survival and wellbeing of her children, as her role cannot easily be replaced within the family.

Data from the ***Textbook of Preventive and Social Medicine*** indicates that India has historically had a high maternal mortality rate. Although there has been a decline over time, it still remains a serious issue, with hundreds of maternal deaths occurring per 100,000 live births. A large number of these deaths are linked to home deliveries conducted by untrained personnel and the lack of timely access to emergency obstetric care.[4]

Maternal mortality continues to be a serious concern in India, including in Karnataka. The maternal mortality rate in Karnataka has been reported as 460 per 100,000 live births. Major contributing factors include anemia, poverty, lack of awareness, malnutrition, infections, and other health conditions. Among the direct causes, hemorrhage accounts for the highest proportion (25.6%), followed by sepsis (13%), toxemia of pregnancy (11.9%), abortions (8%), and obstructed labor (6.2%), while other causes together contribute to 35.3% of maternal deaths.[5]

Although both central and state governments have implemented various maternal and child health (MCH) programs and awareness campaigns through mass media, many women—especially those in rural and remote areas—remain unaware of these services. This is mainly due to illiteracy, lack of awareness, and prevailing socio-cultural practices, which continue to act as barriers to accessing proper maternal healthcare.

NEED FOR STUDY

Women represent strength, resilience, and continuity of life. Their contribution to society goes far beyond measurable limits, especially through their role in reproduction and nurturing future generations. It is often said that educating a woman contributes to the development of an entire nation, emphasizing the importance of empowering women with knowledge and awareness. Despite their vital roles as mothers, wives, and caregivers, women often carry multiple responsibilities, sometimes at the cost of their own health. In this context, the present study focuses on assessing the knowledge of primi-gravida women and providing health education regarding selected warning signs during pregnancy.[6]

Globally, maternal mortality continues to be a major public health concern. A large proportion of maternal deaths occur in Africa (53%) and Asia (42%), while Latin America accounts for about 4%, and less than 1% occur in developed countries. In fact, nearly 99% of maternal deaths take place in developing nations, reflecting inequalities in access to healthcare services.

According to the World Health Organization, approximately 150 million pregnancies occur worldwide each year. Disturbingly, every minute, a woman dies due to pregnancy-related complications, amounting to nearly 600,000 deaths annually, with 99% occurring in developing countries. Additionally, for every maternal death, about 30 women suffer from long-term illness or disability related to pregnancy and childbirth. In India alone, one woman dies every five minutes due to pregnancy-related complications, totaling around 1,21,000 deaths annually. Furthermore, about 15% of women develop life-threatening complications during pregnancy.

Studies indicate that India's maternal mortality rate has been around 420 per 100,000 live births. The leading causes include hemorrhage (29%), anemia (19%), sepsis (16%), obstructed labor (10%), unsafe abortion (9%), and hypertensive disorders (8%). Most of these causes are preventable with timely and appropriate care. Maternal mortality is closely linked with poverty and lack of access to healthcare, affecting not only women but also their families and communities.[7]

Awareness regarding danger signs of pregnancy remains inadequate. Research shows that knowledge about warning signs among both men and women is far from satisfactory. Due to this lack of awareness, many women fail to seek timely medical care for complications, leading to preventable morbidity and mortality. Without widespread awareness and proper guidance on recognizing complications and seeking care, reducing maternal deaths remains a challenge.[8]
A descriptive study conducted in Hyderabad revealed that 67.5% of women experienced pregnancy-related problems during the antenatal period, with pre-eclampsia being a leading cause.[9] This highlights the need for early detection and proper management of complications.

Safe motherhood is defined as a state in which a woman can undergo pregnancy and childbirth with confidence, supported by adequate care to ensure the wellbeing of both mother and newborn.[10] National policies such as the National Population Policy (2000) and National Health Policy (2002) have set goals to reduce the maternal mortality rate to 100 per 100,000 live births from previously higher levels.[11]

Although pregnancy is a natural physiological process, complications can arise even with good antenatal care. Common warning signs include vaginal bleeding, reduced fetal movements, poor weight gain, high blood pressure, and swelling of the face, hands, and legs. Hemorrhage remains one of the leading causes of maternal death in India and can lead to death within hours if not managed promptly.[12]

Educational interventions have shown promising results in improving awareness. A study conducted among 33 primi-gravida women using an information booklet demonstrated a significant improvement in knowledge, with post-test scores (88.79%) much higher than pre-test scores (25.58%).[13]

Similarly, a long-term study in Northern India reported 116 maternal deaths among 126,083 live births, with a maternal mortality rate of 445 per 100,000 live births. The majority of deaths were due to direct obstetric causes, while others were due to indirect or unrelated factors.[14] Another survey in Tamil Nadu identified hemorrhage, toxemia, severe anemia, and obstructed labor as major causes of maternal mortality.[15]

A pre-experimental study on high-risk pregnancies among 120 antenatal mothers revealed that 93.33% had obstetric risk factors, 66.7% had medical risks, and 60% had physical risks. These findings emphasize the importance of early identification and timely intervention to prevent complications.[16]

During clinical postings, it was observed that many pregnant women lacked adequate knowledge about warning signs and their consequences. This gap in awareness highlights the need for effective educational strategies. Therefore, the present study was undertaken to assess the knowledge of primi-gravida women regarding selected warning signs during pregnancy and to enhance their understanding through appropriate health education.

STATEMENT OF THE PROBLEM

"A study to assess the knowledge regarding selected warning signs in pregnancy among primi-gravida mothers attending antenatal clinic at selected hospital of Bangalore with view to develop structured teaching programme''.

OBJECTIVES OF THE STUDY

1. To assess the knowledge of the primi-gravida mothers regarding selected warning signs in pregnancy.
2. To develop structured teaching programme on selected warning signs in pregnancy.
3. To determine the association between knowledge scores of primi-gravida mothers with selected demographic variables.

HYPOTHESIS

$H_{1:}$ There will be significant association between the knowledge of primi-gravida mothers regarding selected warning signs in pregnancy with their selected demographic variables.

$H_{2:}$ There will be no significant association between the knowledge of primi-gravida mothers regarding selected warning signs in pregnancy with their selected demographic variables.

ASSUMPTIONS

1. Primigravida mothers may not have adequate knowledge regarding warning signs of pregnancy .
2. The structured teaching programme may update the existing knowledge of primi-gravida mothers

DELIMITATIONS

The study is delimited to primi-gravida mothers who are willing to participate and who are present during the time of data collection.

CRITERIA FOR SELECTION OF SAMPLES

Inclusion Criteria

The primi-gravida mothers who are

- Registered from any state nursing council of India.
- Willing to participate in the study.
- Available during the period of data collection.

Exclusion Criteria

- Mothers who are not available at the time of data collection.
- Primi-gravida mothers with complicated pregnancy

METHODOLOGY

A descriptive research design was adopted to assess the knowledge of primi-gravida mothers regarding selected warning signs in pregnancy at K.C. General Hospital, Bangalore.

The main variable of the study was the knowledge of primi-gravida mothers. The demographic variables included age, type of family, religion, education, occupation, duration of married life, and family history of pregnancy-related complications.

The study sample consisted of 60 primi-gravida mothers, selected using a convenient sampling technique. Data were collected using a structured interview schedule developed by the researcher to assess knowledge regarding selected warning signs in pregnancy.

The questionnaire comprised 25 multiple-choice questions, each with four options, including one correct answer and three distractors. Each correct response was awarded a score of '1', while incorrect responses were given a score of '0'. The maximum possible score was 25. Based on the total score, knowledge levels were categorized as follows: **Adequate knowledge**: More than 75% (scores above 18), **Moderately adequate knowledge**: 50–75% (scores between 13–18) and **Inadequate knowledge**: Less than 50% (scores below 12).

Content validity of the tool was established through expert review by specialists in Obstetrics and Gynecological Nursing. Reliability of the instrument was determined using the Spearman-Brown prophecy formula, yielding a reliability coefficient of 0.84, indicating that the tool was reliable.A pilot study was conducted on 6 subjects at the same hospital to assess the feasibility of the study. The main data collection was carried out over a period of four weeks at K.C. General Hospital, Bangalore. The collected data were analyzed using both descriptive and inferential statistical methods.

RESULTS

These are presented under the following sections.

SECTION – I: DEMOGRAPHIC CHARACTERISTICS OF PRIMI-GRAVIDA MOTHERS

N = 60

Sl No	Demographic Character	Particulars	**Frequency**	**Percentage**
1	Age	Less than 25 years	17	28.3
		26-30 years	20	33.3
		31-35 years	16	26.7
		More than 36 years	7	11.7
2	**Family type**	Joint family	17	28.3
		Nuclear family	43	71.7
3	**Religion**	Hindu	38	63.3
		Muslim	5	8.3
		Christian	17	28.3
4	**Education**	Primary education	26	43.3
		Secondary education	23	38.3
		PUC and above	7	11.7
		Illiterates	4	6.7
5	**Occupation**	House wife	31	51.7
		Working in private sector	20	33.3
		Working in government sector	9	15.0

6	**Duration of married life**	0-5 years	36	60.0
		6-10 years	4	6.7
		11-15 years	15	25.0
		More than 16 years	5	8.3
7	**Family history of pregnancy complications**	Yes	12	20.0
		No	48	80.0
		Total	**60**	**100**

SECTION II: KNOWLEDGE LEVEL OF PRIMI-GRAVIDA MOTHERS REGARDING THE SELECTED WARNING SIGNS IN PREGNANCY.

N = 60

Knowledge level	**Frequency**	**%**
a. Inadequate knowledge	31	51.7
b. Moderate knowledge	28	46.7
c. Adequate knowledge	1	1.7
Total	**60**	**100**

Table : knowledge scores of Primi-gravida mothers regarding selected warning signs in pregnancy.

N = 60

Knowledge aspects	**Number of Items**	**Maximum Score**	**Mean**	**Mean %**	**Median**	**SD**
a. General information	4	4	1.65	41.25	1	0.917
b. Bleeding per vagina	9	9	4.6	51.11	5	2.366
c. Severe Nausea/Vomiting	6	6	2.57	42.83	3	1.609
d. Unusual Swelling	6	6	3.12	52	3	2.358
Overall	25	25	11.93	47.72	12.5	5.115

SECTION III: ASSOCIATION OF THE KNOWLEDGE SCORES OF PRIMI-GRAVIDA MOTHERS WITH SELECTED DEMOGRAPHIC VARIABLES

N= 60

Variables	**Below Median**	**Median and above**	**Chi square**	**Df**	**P value (0.05)**	**Inference**
1. **Age in years**						
a. less than 25 years	5	12	24.668	3	0.001	S
b. 26-30 years	18	2				
c. 31-35 years	2	14				
d. More than 36 years	3	4				
2. **Family type**						
a. Joint family	6	11	1.233	1	0.325	NS
b. Nuclear family	22	21				
3. **Religion**						
a. Hindu	18	20	7.755	2	0.015	S
b. Muslim	5	0				
c. Christian	5	12				
4. **Education**						
a. Primary education	13	13	20.608	3	0.001	S
b. Secondary education	4	19				
c. PUC and above	7	0				
d. Illiterates	4	0				
5. **Occupation**						
a. House wife	8	23	11.241	2	0.001	S

b. Working in private sector	14	6				
c. Working in government sector	6	3				
6. **Duration of married life**						
a. 0-5 years	17	19	8.147	3	0.022	S
b. 6-10 years	2	2				
c. 11-15 years	4	11				
d. More than 16 years	5	0				
7. **Family history of pregnancy complications**						
a. Yes	4	8	2.012	1	0.125	NS
b. No	24	24				

DISCUSSION

The findings of the study are discussed under following headings.
Section I: Description of demographic characteristics of Primi-gravida mothers.
Section II: Knowledge level of Primi-gravida mothers regarding the selected warning signs in pregnancy
Section III: Association between knowledge scores of Primi-gravida mothers and selected demographic variables.
Section I: Demographic characteristics of Primi-gravida mothers.

- In the study 28.3% of subjects were in the aged less than 25 years, 33.3% of subjects were in the age group of 26-30 years.
- Majority 71.7% of the subjects lives in nuclear family and remaining 28.3% were living in Joint family.
- Majority 63.3% subjects belong to Hindu religion, 8.3% were Muslims and 28.3% were Christians.
- Majority 43.3% of subject's had primary education, 38.3% have completed Secondary education, 11.7% of them completed PUC and above and 6.7% were illiterates.
- Among Primi-gravida mothers 51.7% were housewives, 33.3% were working in private sector and 15% were working in government sector.
- Majority 60% of subjects had married life less than 5 years, 6.7% had 6-10 years of married life.
- 20% of the subjects had family history of pregnancy complications.

Section II: Knowledge level of Primi-gravida mothers regarding the selected warning signs in pregnancy.

The findings of the study revealed that majority 51.7% of the Primi-gravida mothers had inadequate knowledge and 46.7% had moderate knowledge and 1.7% had adequate knowledge.

The overall mean knowledge score obtained by the Primi-gravida mothers was 11.93 (47.72%) with standard deviation 5.115.

Section III: Association between knowledge scores and selected demographic variables.
It was evident that there was a statistically significant association between the knowledge scores of the Primi-gravida mothers with demographic variables such as age, religion, education, occupation and duration of married life at the probability level of $p<0.05$. Hence the research hypothesis stated that there will be significant association between the knowledge scores of Primi-gravida mothers regarding the selected warning signs in pregnancy with selected demographic variable was accepted.

IMPLICATIONS OF THE STUDY

The findings of the study can be used in the following areas of nursing profession.
Nursing Practice: Nurses are the key persons of the health team, who play a major role in health promotion and maintenance. The nursing personnel need to provide information regarding the prevention of pregnancy related complications accurately and precisely. The education through structured teaching programme should be clear and understandable that can be referred by any family members. Providing health information is an integral part of nursing services.

Nursing Education: As a nurse educator, there are abundant opportunities for nursing professionals to educate the Primi-gravida mothers regarding selected warning signs in pregnancy. The study emphasizes significance of short term in-service education programmes for nurses related to prevention and management of warning signs of pregnancy. Nursing personnel working in hospitals as well as in community areas should be given in-service education.

Nursing Administration: Nursing administrators should take interest in motivating the nursing personnel's especially nurses in all the hospital to improve their professional knowledge and skill by attending the health conferences, workshops, seminars and training program on selected warning signs in pregnancy. The nursing administrator should arrange regular in-service education program on selected warning signs in pregnancy.

Nursing Research: Research provides nurses credibility to influence decision making, policy and protocol formulation regarding selected warning signs in pregnancy among Primi-gravida mothers. Findings of the present study suggest that educators and administrator should encourage nurses to read, discuss and conduct research studies so as to enable the nurse to make data based decision and maintaining health records.

LIMITATIONS OF THE STUDY

- Only knowledge was considered in the present study.
- The study was conducted in one hospital, which restricts the generalization.

RECOMMENDATIONS

- On the basis of the findings of the study following recommendations have been made:
- A similar study can be replicated on large sample to generalize the findings.
- A similar study can be conducted in different setting.
- A study can be conducted to assess the effectiveness of innovative teaching methods.

BIBLIOGRAPHY

1. Gita R. Being pregnant today, Health Action: February 1998; 17-8.
2. Gupta N. Maternal Mortality: magnitude causes and concerns. Journal of obstetrics & Gynaec today: September 2004; 9: 555-8.
3. Division of Reproductive Health. World Health Organization. Safe motherhood: Maternal Mortality: Switzerland; 1998(CH-1211)
4. Park K. Text book of Preventive and Social Medicine. 17th ed. Jabalpur: Banarsidas Bhanots; 2002.
5. The Journal of Family Welfare; 1997: 42 (1); 2-5.
6. Benett R, Linda K Brown. Myles Text book for Midwives. 12th ed. Edinburgh: Churchil Living Stone; 1993.
7. Mathai. M. Improving Maternal and Child survival in India. Indian Journal of Medical Resident: May 2005; 121: 624-7.
8. Ram. F, Singh A. Safe motherhood and millennium development goals in India. The Journal of Family Welfare; special issue 2004: 26-30.
9. Swarna. Maternal Morbidity. Nurses of India: September 2004; 11-4. 10. Safe motherhood. Health Action: April 1998.
10. Department of Health. National Population Policy: Ministry of India; 2000.
11. Department of Family Welfare Service. Safe motherhood: Government of India: 1997-1999; 94-9.
12. Noronha. J. Teaching Primigravida women about warning signs in pregnancy using a specially designed information booklet. The Indian Journal of Nursing & Midwifery: December 1998; 1 (3): 27-34.
13. Anandalakshmy PN, Buckshee K. Maternal Mortality in a referral hospital of northern India - A sixteen year review. The Journal of Family Welfare: September 1997; 43 (3): 1-4.
14. Ramchandran L, Muthuswamy P. An assessment of maternal mortality and its causes. The Journal of Family Welfare: September 1994; 40 (3): 51-8.
15. Sarvamangala. To identify the risk factors related to pregnancy among the pregnant women attending antenatal clinic in a selected hospital. M.Sc(N) Thesis, Rajiv Gandhi University: 1998.
16. Frabko DL, Spurrell EB. Detection and management of eating disorders during pregnancy. Journal of Obstetrics and Gynaecology. June 2000; 95 (6): 942-6. (cited on June 8) Available from URL: http://www.pubmed.com