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Effectiveness of a Planned Educational Program on Preeclampsia for Primigravida Women

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Effectiveness of a Planned Educational Program on Preeclampsia for Primigravida Women

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Abstract

A Quazi-experimental one group pre-test post-test design was adopted. The study was conducted at an antenatal clinic of a primary health center of periyampatti, Dharmapuri Dt, Mangalore. Thirty primigravida women in first and second trimester attended the antenatal clinic were recruited purposively. A structured closed ended questionnaire was prepared by the researchers and used to assess: the knowledge level of the participants regarding preeclampsia by developing a research instrument through a pre-test and the effectiveness of the Planned educational program (PEP) after implementation through a posttest. The highest percentage of the respondents (63%) had poor knowledge and only 37% had average knowledge regarding preeclampsia. With regard to the pre-test knowledge level, the mean percentage of total knowledge score was 32.23% with a mean ± SD of 9.67 ± 3.79, which increased to 84.9% with a mean ± SD of 25.47±2.46 in the post-test. The PEP may be effective in improving the knowledge of primigravida women ($t= 3.66$, $P<0.001$) regarding preeclampsia.

Keywords: Preeclampsia, Planned educational program, Primigravida

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Introduction

Pregnancy is a long and private journey for a woman; it can be a thrilling and wonderful part of her life. Generations of women have travelled the same route, but each journey is unique. Some women have problem-free pregnancies, but others are at risk of developing life-threatening complications during pregnancy or childbirth.

According to the Key facts published by WHO, 303,000 women died worldwide in 2015 due to maternal causes. Almost 99% of all maternal deaths occur in developing countries and nearly one third is represented in South Asia. About 15% of this number occurred in India. Maternal mortality is higher in women living in rural areas and among poorer communities. Hypertensive disorders of pregnancy still one of the direct causes of maternal death accounting for (10%) globally[1] and 40% to 60% in developing countries (Omole-Ohonsi and Ashimi 2008). Among the hypertensive disorders that complicate pregnancy, preeclampsia and eclampsia stand out as major causes of maternal and perinatal mortality and morbidity (Steegers et al. 2010, Männistö et al. 2013). Moreover, their incidence has continued to increase worldwide, accounting for about 50,000 deaths worldwide annually (WHO Recommendations 2011). Further, they are the second leading cause of stillbirths and early neonatal deaths in developing nations (Ngoc et al. 2006). In addition, HELLP syndrome occurs in about 10% to 20% of all women with severe preeclampsia or eclampsia[2].

Incidence of hypertensive disorders among Indian pregnant women was 7-8% with the highest incidence occurred in the age group of 18-22 years old and primigravida (Sajith et al. 2014a). 14% of maternal deaths is reported to occur due to hypertensive disorders in pregnancy (Say et al. 2014). Regarding preeclampsia in specific, findings of an Indian study revealed that, the incidence of preeclampsia was 4.4%, also majority of patients were in an age group of 18-22 years with gestational age of 31-36 weeks. In another study conducted in South India, the reported incidence was 5% (Aabidha et al. 2015). Additionally, negative neonatal outcomes were preterm delivery, low birth weight (LBW) and neonatal death (Aabidha et al. 2015, Sajith et al. 2014b). Determinants of preeclampsia in India as reported by a case–control study were pre-pregnancy body mass index (BMI > 25); history of chronic hypertension, diabetes, renal disease, and preeclampsia; family history of hypertension; and multiple pregnancy (Ganesh et al. 2010). Considering maternal outcomes, a cohort prospective study was carried out on l96 patients diagnosed with gestational hypertension showed that (6.6%) progressed to chronic hypertension (Denise et al. 2008).

Maternal mortality from preeclampsia is mainly due to eclampsia. Preeclampsia is often silent, showing up unexpectedly during a routine blood pressure check and urine test. It can develop gradually or come on quite suddenly, even flaring up in a matter of hours, though the signs and symptoms may have been present for months undetected or unnoticed. In a pregnancy complicated by preeclampsia there is a marked vasospasm, which reduces blood flow and alters function of virtually all organ systems; this vasospasm causes endothelial damage (Murray and McKinney 2013).

The majority of deaths due to preeclampsia and eclampsia are avoidable through the provision of timely and effective care to the women presenting with these complications. Optimizing health care to prevent and treat women with hypertensive disorders is a necessary step towards achieving the Millennium Development Goals.

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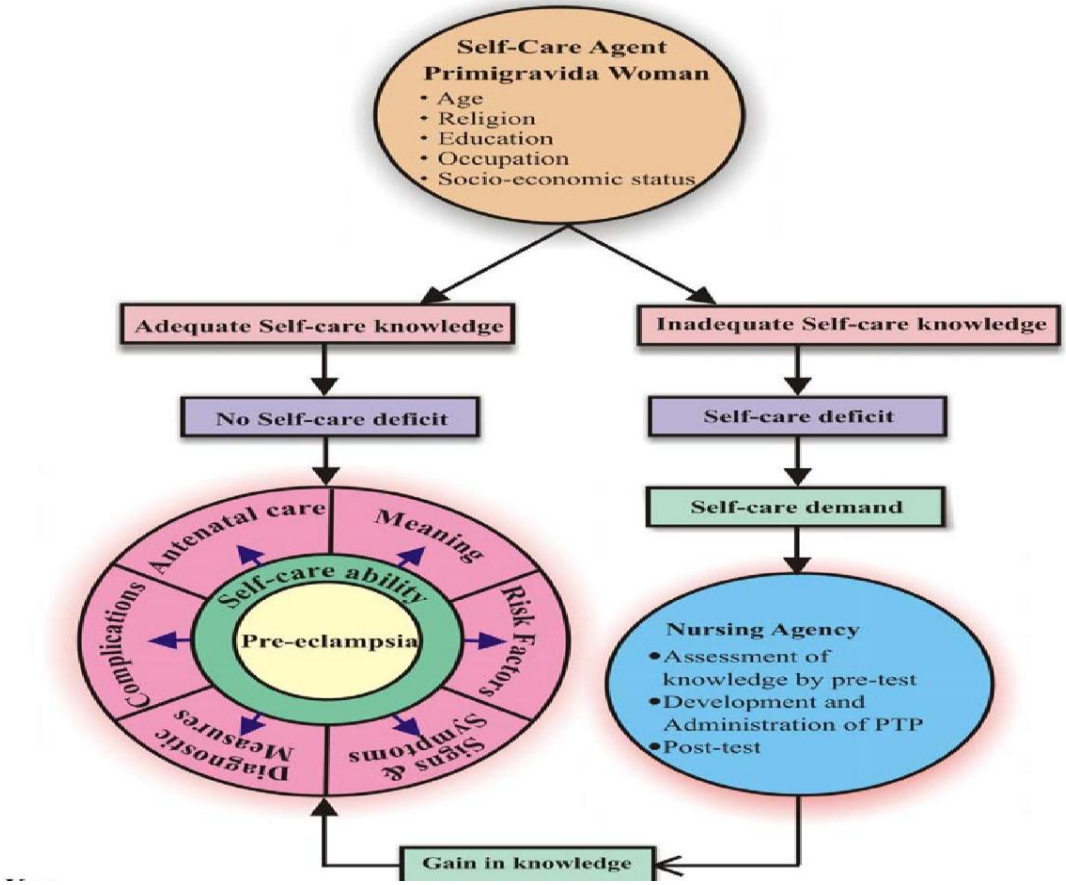
[1] www.who.int. WHO/Maternal Mortality. Fact sheet N°348. Updated November 2015. [Accessed: 1 January 2016]

[2] PubMed Health (2011) *HELLP syndrome*. Retrieved from goo.gl/uk8Caz. [Accessed: 21 May 2012]

The conceptual framework of the present study was developed by the investigator based on Orem's self-care deficit model (Figure 1). This theory was applied to the study framework to determine the effectiveness of a PEP on preeclampsia for primigravida women. The overall purpose of framework is to make the study well developed and thus the scientific findings meaningful and generalized.

Figure 1. *Conceptual Framework Based on Orem's Self-Care Deficit Model*



Antenatal care is obviously important in early pregnancy but closer clinical monitoring is necessary in the presence of predisposing factors for preeclampsia. Prevention of preeclampsia necessitates an appreciation of the predisposing factors such as presence of pre-existing disease (e.g., chronic hypertension, renal disease, or diabetes mellitus), multifetal pregnancy, family history of PIH, previous history of preeclampsia, obesity, age less than 20 years and older than 35 years. Identification of women at increased risk of preeclampsia is important because increased antenatal surveillance may allow early detection and prompt management of the disease, thereby preventing potentially fatal sequelae for mother and baby.

The investigator during her past clinical experience in a selected community has come across antenatal women with signs and symptoms of preeclampsia having limited knowledge regarding preeclampsia. Additionally, in rural India, women often report for antenatal care only in the latter half of pregnancy, hence their earlier blood pressure status is often not known. This has motivated the investigator to conduct a PEP on preeclampsia for primigravida women.

Methodology

Aim

The aim of this study was divided into two parts: 1) to determine the knowledge level regarding preeclampsia by developing a research instrument; and 2) to evaluate the effectiveness of a planned educational program (PEP) on preeclampsia in terms of gain in knowledge score.

Design

A one group pre-test post-test quazi-experimental design was adopted. Intervention was the PEP conduction with the same group being as a control on itself.

Sample Size, Sampling and Setting

Thirty primigravida women in first and second trimester who were willing to participate in the study and able to understand English were recruited purposively while their attendance at an antenatal clinic of primary health center in periyampatti, Dharmapuri Dt, Mangalore.

Hypothesis

The mean post-test knowledge scores of study participants regarding preeclampsia will be significantly higher than the mean pre-test knowledge scores and it was tested at 0.001 level of significance.

Instrument

To accomplish the objectives of the study, a PEP on preeclampsia and a structured closed ended questionnaire were prepared by the researchers after extensive review of the related literature. The steps involved in the development were:

1. Review of literature.
2. Preparation of blue print.
3. Preparation of the first draft.
4. Development of criteria checklist.
5. Content validity.
6. Pre-testing.
7. Preparation of final draft.

The blue print included three domains: knowledge, comprehension and application. The three areas included were meaning and risk factors of preeclampsia (33%), signs and symptoms and complications (30%), diagnostic measures and antenatal care-high risk for preeclampsia (37%) (Appendix 1).

Validity and Reliability

A panel of seven experts in the obstetrics and gynecology nursing ascertained the content validity of the tool, the PEP and the audiovisual aids through rating the adequacy, relevance, organization, presentation, language, practicability, accuracy and appropriateness of the content against a 3-point criterion rating scale (strongly agree,

agree and disagree) (Appendix 2). Modifications as deleting management of preeclampsia since the sample consists of primigravida women and including contents about antenatal care in addition to simplifying the language were suggested and carried out. The tool was divided into two parts: part I to collect demographic data (5 items) such as age, religion, educational level, occupation and monthly income; part II to assess the knowledge on preeclampsia (30 items) under the following areas: A meaning and risk factors (10 items); B signs and symptoms and complications (9 items) and C diagnostic measures and antenatal care-high risk for preeclampsia (11 items) (Appendix 3). Reliability of the tool was tested by using Karl Pearson's correlation formula (r=0.89).

Data Collection, Piloting and Statistical Analysis

After obtaining the official permissions from the hospital authorities and informed consent from the participants, data was collected through 3 phases (Table 1). The average time taken to complete the interview schedule was 25 minutes for each woman and one hour for the PEP. Purpose of the study was explained and confidentiality was assured. It was not costing to develop and conduct the PEP. A pilot study was conducted by administering the structured questionnaire and the PEP to ten respondents who fulfilled the inclusion criteria. The tool was found to be feasible and practicable and the PEP was acceptable and no changes were made. Thus, these instruments can be applied to other Indian areas. The obtained data was analyzed using descriptive and inferential statistics. Demographic data was analyzed in terms of frequency and percentage. The knowledge scores of women before and after the PEP were analyzed in terms of frequency, percentage, mean, median and standard deviation. The significant difference between the mean of pre and post-test knowledge scores was determined by paired "t" test.

Table 1. *The Schematic Representation of Study Design Presented in 3 Phases*

Group	**Phase I** **Pre-test O1** Administration of structured interview schedule (1st day)	**Phase II** **Treatment X**
30 primigravida women	**Phase III** **Post-test O2** Administration of structured interview schedule (7th day)	Planned educational Program (1st day)

Findings/Results

As regards the description of the study participants, majority of them were in the age group of 20-27 years, Muslims, had primary education, housewives and had a monthly income of 1,000-2,000 Rs. (represented as 77%, 63%, 60%, 67% and 57%) (Table 2).

With regard to the pre-test knowledge assessment, the highest percentage (63%) of the respondents had poor knowledge and only (37%) of them had average knowledge regarding preeclampsia after interpretation of their score (Table 3). The mean percentage of total scores was (32.23%) with a mean ± SD of 9.67 ± 3.79. Area-wise mean percentage was (38.33%) in the area of meaning and risk factors with a mean ± SD of 3.83 ± 1.15, (26.29%) in the area of signs and symptoms and complications with a

mean ± SD of 2.37 ± 1.56 and (31.51%) in the area of diagnostic measures and antenatal care-high risk for preeclampsia with a mean ± SD of 3.47 ± 1.76 (Table 4). With regard to meaning and risk factors of preeclampsia, item-wise analysis showed that, the highest percentage (60.0%) of respondents knew that "high blood pressure occurs as a direct result of pregnancy" and the least percent of women (20.0%) knew that "high blood sugar is associated with preeclampsia". In the area of signs and symptoms and complications of preeclampsia, most of the women (63.3%) had the knowledge that "presence of swelling in mild preeclampsia can be assessed by tightness of the finger ring" and minority (20.0%) of women knew "the total weight gain during pregnancy", "that swelling persists with bed rest in mild preeclampsia" and "that the effect of untreated preeclampsia is fits". With regard to diagnostic measures and antenatal care, item-wise analysis showed that the highest percentage (46.6%) of women knew that, "adequate rest during pregnancy helps in decreasing the blood pressure" and least percent (20.0%) of women knew that "ultrasonography is essential during pregnancy", "fetal movements can be assessed by monitoring kick count" and "frequent antenatal checkups are required for a woman who is high risk for preeclampsia".

Table 2. *Frequency and Percentage Distribution of the Demographic Variables N=30*

Variables	**Frequency**	**Percentage**
Age (in years)		
Below 20	4	13
20-27	23	77
28-35	2	7
Above 35	1	3
Religion		
Hindu	8	27
Muslim	19	63
Christian	3	10
Educational level		
Illiterate	3	10
Primary education	18	60
High school	5	17
Pre-university and above	4	13
Occupation		
Housewives	20	67
Daily wage earners	7	23
Employed	3	10
Monthly income		
<Rs. 1,000/-	1	3
Rs. 1,000-2,000	17	57
Rs. 2,001-3,000	9	30
More than Rs. 3,000	3	10

Table 3. *Level of Knowledge of Primigravida Women Regarding Preeclampsia*

Level of Knowledge	Range of Scores	Percentage of Scores	No. of Respondents	Percentage (%)
Poor	0-10	0-34	19	63.00
Average	11-20	34-64	11	37.00
Good	21-30	64-100	-	-
Total			**30**	**100**

Concerning the post-test knowledge assessment, the mean percentage of total scores was 84.9% with a mean ± SD of 25.47 ± 2.46. Item-wise effectiveness of PEP with regard to percentage of correct responses by study participants revealed that, the highest percent of effectiveness (63.3%) was seen in the item "low socio-economic status leads to preeclampsia" and only (36.6%) of effectiveness was seen in the item "high blood pressure occurs as a direct result of pregnancy". Items related to signs and symptoms and complications of preeclampsia, findings revealed that, highest percentage (60.0%) of effectiveness was observed for the items "In mild preeclampsia, swelling persists with bedrest and in sever preeclampsia, headache is located in the area of forehead and back of the head". Further, only (36.7%) of effectiveness was seen in the response to the item "presence of swelling in mild preeclampsia can be assessed by tightness of the finger ring". Items related to "diagnostic measures and antenatal care-high risk for preeclampsia": highest percentage of effectiveness (66.6%) was seen in item "urine test helps in the diagnosis of severe preeclampsia". The mean percentage of effectiveness was (52.67%). However, overall mean percentage of knowledge score had improved from (32.23%) in pre-test to (84.9%) in post-test (Table 4).

Table 4. *Area-Wise Mean, SD and Mean Percentage of Pre-Test and Post-Test Knowledge Scores of Primigravida Women in Selected Areas of Preeclampsia*

Areas	Max. Possible Score	Pre-test (x)		Post-test (y)		Effectiveness (y-x)	
		Mean ± SD	Mean %	Mean ± SD	Mean %	Mean ± SD	Mean %
Meaning and risk factors	10	3.83 ± 1.15	38.33	8.93 ± 1.41	89.67	5.10 ± 1.47	51.34
Signs and symptoms and complications	9	2.37 ± 1.56	26.29	7.57 ± 0.94	84.07	5.20 ± 1.42	57.78
Diagnostic measures and antenatal care-high risk for preeclampsia	11	3.47 ± 1.76	31.51	8.97 ± 1.09	81.52	5.50 ± 1.48	50.01
Total	30	9.67 ± 3.79	32.23	25.47 ± 2.46	84.9	15.80 ± 2.42	52.67
P-value	***0.001***						

The pre-test median score was 9 whereas post-test median score was 25 (Figure 2). Further effectiveness of PEP was tested by inferential statistics using paired "Wilcoxon" test. A significant (P=0.001) difference was found between pre-test and post-test knowledge scores of the respondents indicating significant increase in knowledge after PEP (Table 5). Hence the null hypothesis H_0 was rejected and the research hypothesis was accepted.

Figure 2. *Pre-Test and Post-Test Knowledge Scores of Primigravida Women Regarding Preeclampsia*

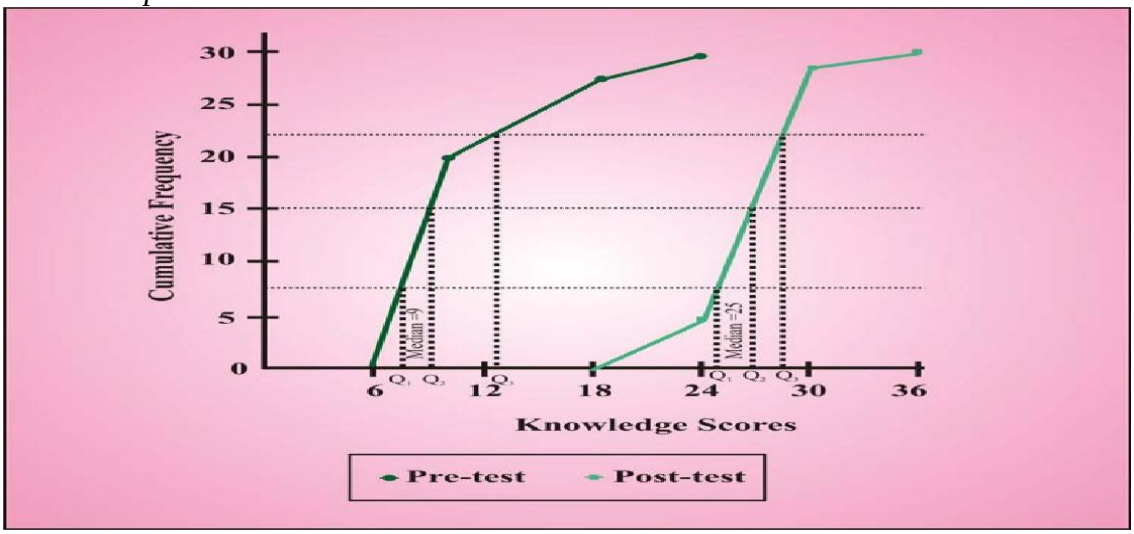


Table 5. *Significance of Difference Between the Pre-Test and Post-Test Knowledge Scores of Primigravida Women regarding Preeclampsia*

Areas	**Mean effectiveness**	**"t" value**
Meaning and risk factors	5.10	18.9*
Signs and symptoms and complications	5.20	20.0*
Diagnostic measures and antenatal care-high risk for preeclampsia	5.50	20.3*
Total	15.80	35.89*

* Significant; P=0.001.

Discussion

Findings Related to Participant's Description

The current study findings revealed that, majority of the participants were in the age group of 20-27 years, housewives, Muslims, had primary education and had a monthly income of 1000-2000 Rs. Nearly, similar findings were seen in a study conducted by Jose et al. (2010) to assess the knowledge regarding preeclampsia and its self-care measures, where majority of the participants were in the age group of 21-25 years (47%), housewives (55.6%) and had a monthly income of less than 2,000 Rs (35.2%). In contrast, majority of the participants were Hindus (56.5%) and had a secondary education (55.6%). In the same perspective, another Indian study conducted to assess the effectiveness of a structured teaching program on pregnancy induced hypertension (PIH) among primigravida mothers had found that, majority of mothers (40%) were aged between 18-22 years, (50%) were graduate and above, (60%) were housewives and 15% of mothers had a monthly income of <5,000 (Nayak 2015).

Findings Related to the Pre-test Knowledge Assessment of Primigravida Women Regarding Preeclampsia

Findings regarding the pretest knowledge level revealed that, most of the primigravida women had poor knowledge regarding preeclampsia in all areas. Thus, primigravida women need to be educated regarding preeclampsia in congruence with the

2014 Preeclampsia Awareness Survey that highlighted a need for education[3]. These results are consistent with the findings of Maputle et al. (2015) who found knowledge deficit about (PIH) symptoms, prevention of complications and its fetal impact. Furthermore, Nayak (2015) reported that, most of the mothers had poor knowledge about PIH. In contradiction, Jose et al. (2010) concluded that majority of mothers (74%) had average knowledge regarding preeclampsia.

Findings Related to the Effectiveness of the PEP Regarding Preeclampsia

The current study concluded that, the pre-test median score was 9 whereas post-test median score was 25. This indicates that there is significant increase in the knowledge scores of primigravida women regarding preeclampsia after implementation of the PEP. These findings are congruent with Nayak who reported a median of 7 for the pretest knowledge score which had been significantly increased to 15 in the posttest ($P = 0.04$) (Nayak 2015). Additionally, a significant increase in knowledge was found in all the areas in the post-test. In addition to being matching to the findings reported in another study where the mean knowledge score of the posttest (27.25) was found to be significantly higher than the mean knowledge score of the pretest (13.96) with a mean difference of 13.29 (Nayak 2015).

Conclusion

From the study findings, it can be concluded that, most of the primigravida women had poor knowledge regarding preeclampsia in all areas. In addition to, there was a significant increase in the knowledge of primigravida women regarding preeclampsia. Thus, PEP may be effective in improving the knowledge of primigravida women regarding preeclampsia.

Nursing Implications

The present study was conducted to find out the effectiveness of PEP on preeclampsia for primigravida women. Several implications for nursing practice, education, administration and research can be stated based on the findings of this study.

Nursing Practice

From the present study, it was found that PEP was a very effective teaching method. Since patient teaching is one of the functions of nursing personnel, its accountability should be stressed. PEP can be used as a teaching strategy in the hospitals as well as in the community so that the antenatal women are aware of the risk factors of preeclampsia and they can take care of themselves in preventing the complications.

Nursing Education

Nursing curriculum should be equipped with knowledge and skills to prepare prospective nurses to assist clients and community in developing their self-care potential. Every student should be motivated to provide care and opportunities must be

[3] *2014 Preeclampsia Awareness Survey Highlights Need for Education*. Retrieved from goo.gl/YfVB8s.

provided during the training to plan and conduct health education for antenatal women on preeclampsia.

Nursing Administration

The nursing administrators should plan in-service education and continuing education program for nurses and motivate them to participate in such activities. They also can encourage the higher authorities to establish the outreach programs in the community to improve the knowledge on preeclampsia. Nursing administration must awaken to the fact that patient education is a necessity and should provide resources in terms of manpower, money and material should be provided.

Recommendations

The study indicates the need for emphasizing more on nurse's responsibility to teach the primigravida women regarding preeclampsia in their teaching program and in their respective clinical setting. Prepared PEP can be used to provide mass health education to antenatal women on preeclampsia in the community.

Appendix 1

Criteria Rating Scale for Evaluating and Validating the Planned Teaching Program on Pre-Eclampsia

	Criteria	I	II	III	Remarks
No.		**Strongly Agree**	**Agree**	**Disagree**	
1.	**Objectives**				
	Formulation of objectives				
	1.1. General objective is comprehensive in terms of i) understanding, ii) application				
	1.2. Specific/ Instructional objectives stated in terms of learners outcome (behavioral terms)				
2.	**Content**				
	Selection of content				
	2.1 Is the content on pre-eclampsia: a) Appropriate? b) Adequate? c) Accurate?				
3.	**Organization of the content**				
	Is the content organized in logical sequence?				
4.	**Presentation**				
	Does the teaching plan have: a) An Introduction? b) Specific/ Instructional Objective? c) Content outline? d) Teaching learning activities?				
5.	**Language**				
	5.1. Is the language used easy to understand? 5.2. Are the Instructions and questions in simple language?				
6.	**Practicability**				
	6.1. The teaching program may be interesting to the learner 6.2. The teaching program contains answers to the questions asked				
	Suggestions, if any				

Signature

Name of the valuator

Appendix 2

Blue Print of the Structured Interview Schedule to Assess the Knowledge of Primigravida Women on Pre-Eclampsia

Content	**Knowledge**	**Comprehension**	**Application**	**Total**	**Weightage**
Meaning and risk factors of pre-eclampsia	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	-	-	10	33%
Signs and symptoms and complications of pre-eclampsia	11, 14, 15, 16, 17,19	12, 18	13	9	30%
Diagnostic measures and antenatal care-high risk for pre-eclampsia	20, 23, 30	21, 22, 25, 26, 29	24, 27, 28	11	37%
Total	**19**	**7**	**4**		
Weightage	64%	23%	13%		100%

Appendix 3

Description of the Tool
Structured interview schedule mainly consists of 2 parts

Part I: Structured interview schedule to collect the demographic data.
Primigravida women's profile consists of 6 items such as code number, age, religion, educational level, occupation, and socio-economic status

Part II: Structured interview schedule to assess the knowledge of primigravida women on pre-eclampsia.

1. *Section A*: Meaning and risk factors of pre-eclampsia (10 items).
2. *Section B*: Signs and symptoms and complications (9 items).
3. *Section C*: Diagnostic measures and antenatal care-high risk for pre-eclampsia (11 items).

PART - I
Structured interview schedule to collect the demographic data

Instructions to the interviewer
Place a tick mark (√) in the space provided in the bracket against the following items as per the responses of the primigravida woman.

Code No.		
1.	**Age (in years)**	
1.1.	*Below 20*	[ ]
1.2.	*20-27*	[ ]
1.3.	*28-35*	[ ]
1.4.	*Above 35*	[ ]
2.	**Religion**	
2.1.	*Hindu*	[ ]
2.2.	*Muslim*	[ ]
2.3.	*Christian*	[ ]
3.	**Educational level**	
3.1.	*Illiterate*	[ ]
3.2.	*Primary*	[ ]
3.3.	*High school*	[ ]
3.4.	*Pre-university and above*	[ ]
4.	**Occupation**	
4.1.	*Housewife*	[ ]
4.2.	*Daily wage earner*	[ ]
4.3.	*Employed*	[ ]
5.	**Socio-economic status (monthly income)**	
5.1.	*< Rs. 1000*	[ ]
5.2.	*Rs. 1000-2000*	[ ]
5.3.	*Rs. 2001-3000*	[ ]
5.4.	*More than Rs. 3000*	[ ]

PART – II
Structured interview schedule to assess the knowledge of primigravida women on pre-eclampsia

Instructions to the interviewer
Place a tick mark (√) against the appropriate items as per the responses of the primigravida woman.

SECTION A: MEANING AND RISK FACTORS OF PRE-ECLAMPSIA		
1.	**What is the normal blood pressure of an adult person?**	
1.1.	*100/60 mm Hg*	[ ]
1.2.	*120/80 mm Hg*	[ ]
1.3.	*150/100 mm Hg*	[ ]
2.	**Do you think whether some women are prone to develop high blood pressure during pregnancy?**	
2.1.	*Yes*	[ ]
2.2.	*No*	[ ]
3.	**Does high blood pressure occur as a direct result of pregnancy?**	
3.1.	*Yes*	[ ]
3.2.	*No*	[ ]
4.	**Which of the following is true regarding pre-eclampsia?**	
4.1.	*Normal blood pressure with swelling*	[ ]
4.2.	*Low blood pressure with swelling*	[ ]
4.3.	*High blood pressure with swelling*	[ ]
5.	**At what stage is the onset of pre-eclampsia?**	
5.1.	*At 12^{th} week*	[ ]
5.2.	*Between 13-20 weeks*	[ ]
5.3.	*After 20^{th} week*	[ ]
6.	**Which of the following illness based on family history is associated with pre-eclampsia?**	
6.1.	*High blood sugar*	[ ]
6.2.	*High blood pressure*	[ ]
6.3.	*High blood urea*	[ ]
7.	**Which of the following condition is associated with pre-eclampsia?**	
7.1.	*High blood sugar*	[ ]
7.2.	*Asthma*	[ ]
7.3.	*Stomach ulcer*	[ ]
8.	**Who is more prone to pre-eclampsia?**	
8.1.	*Lean person*	[ ]
8.2.	*Medium built person*	[ ]
8.3.	*Obese person*	[ ]
9.	**Do you believe low socio-economic status leads to pre-eclampsia?**	
9.1.	*Yes*	[ ]
9.2.	*No*	[ ]
10.	**Which age group is at risk for developing pre-eclampsia?**	
10.1.	*Above 35 years and below 20 years*	[ ]
10.2.	*Between 20 and 23 years*	[ ]
10.3.	*Between 24 and 27 years*	[ ]
SECTION B: SIGNS AND SYMPTOMS AND COMPLICATIONS OF PRE-ECLAMPSIA		

11.	**What is the average total weight gain during pregnancy?**	
11.1.	*9 kg*	[ ]
11.2.	*10 kg*	[ ]
11.3.	*11 kg*	[ ]
12.	**What is the relation between swelling and bed rest in mild pre-eclampsia?**	
12.1.	*Swelling increases with bed rest*	[ ]
12.2.	*Swelling decreases with bed rest*	[ ]
12.3.	*Swelling persists with bed rest*	[ ]
13.	**How can you assess the presence of swelling in mild pre-eclampsia?**	
13.1.	*Tightness of the clothes*	[ ]
13.2.	*Tightness of the finger ring*	[ ]
13.3.	*Tightness of the earring*	[ ]
14.	**What is the location of headache in severe pre-eclampsia?**	
14.1.	*Forehead and back of the head*	[ ]
14.2.	*Left side of the head*	[ ]
14.3.	*Right side of the head*	[ ]
15.	**What happens to the amount of urine output in severe pre-eclampsia?**	
15.1.	*Remains unaffected*	[ ]
15.2.	*Decreases*	[ ]
15.3.	*Increases*	[ ]
16.	**Does pre-eclampsia affect mother and foetus?**	
16.1.	*Yes*	[ ]
16.2.	*No*	[ ]
17.	**Mrs. Nafisa was diagnosed with pre-eclampsia in her first pregnancy. Is she prone to develop pre-eclampsia in her next pregnancy?**	
17.1.	*Yes*	[ ]
17.2.	*No*	[ ]
18.	**Why is the foetus less nourished in a woman with pre-eclampsia?**	
18.1.	*Due to nausea and vomiting*	[ ]
18.2.	*Due to excretion of protein in urine*	[ ]
18.3.	*Due to decreased blood flow to the placenta (an organ that*	[ ]
19.	**What is the effect of untreated pre-eclampsia?**	
19.1.	*Fever*	[ ]
19.2.	*Fits*	[ ]
19.3.	*Backache*	[ ]
SECTION C: DIAGNOSIS AND ANTENATAL CARE - HIGH RISK FOR PRE-ECLAMPSIA		
20.	**Does urine test help in diagnosis of severe pre-eclampsia?**	
20.1.	*Yes*	[ ]
20.2.	*No*	[ ]
21.	**How will you assess the foetal movements?**	
21.1.	*By checking blood pressure*	[ ]
21.2.	*By monitoring weight*	[ ]
21.3.	*By monitoring "kick count"*	[ ]
22.	**Why is ultrasonography essential during pregnancy?**	
22.1.	*To monitor blood pressure of foetus*	[ ]
22.2.	*To monitor growth of foetus*	[ ]
22.3.	*To monitor temperature of foetus*	[ ]
23.	**Do regular antenatal checkups help in controlling pre-eclampsia?**	
23.1.	*Yes*	[ ]
23.2.	*No*	[ ]

24.	**How many antenatal checkups are required for a woman with high risk for pre-eclampsia?**	
24.1.	*Four*	[ ]
24.2.	*Six*	[ ]
24.3.	*Ten*	[ ]
25.	**What is the need for restricting activities during pregnancy?**	
25.1.	*To help in circulation of blood to the hands*	[ ]
25.2.	*To help in circulation of blood to the placenta*	[ ]
25.3.	*To help in circulation of blood to the feet*	[ ]
26.	**Why is adequate rest required during pregnancy?**	
26.1.	*Helps in better digestion*	[ ]
26.2.	*Helps in better breathing*	[ ]
26.3.	*Helps in decreasing the blood pressure*	[ ]
27.	**How many hours of sleep should a pregnant woman have daily?**	
27.1.	*8-12 hours*	[ ]
27.2.	*7-9 hours*	[ ]
27.3.	*6-8 hours*	[ ]
28.	**Which position should a pregnant woman assume during sleep?**	
28.1.	*Right lateral*	[ ]
28.2.	*Left lateral*	[ ]
28.3.	*Supine*	[ ]
29.	**Why should a pregnant woman assume left lateral position during sleep?**	
29.1.	*To decrease the compression on the vein*	[ ]
29.2.	*To increase the blood supply to the stomach*	[ ]
29.3.	*To increase the blood supply to the lungs*	[ ]
30.	**Is it necessary to monitor weight regularly during pregnancy?**	
30.1.	*Yes*	[ ]
30.2.	*No*	[ ]

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