ASSESS THE RISK FACTORS FOR HIGH - RISK PREGNANCY AND EFFECTIVENESS OF TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF HIGH-RISK PREGNANCY AMONG ANTENATAL MOTHERS ATTENDING ANTENATAL CLINICS IN SELECTED URBAN AREA

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Abstract

Aim: Study aimed to identify risk factors of high-risk pregnancy and effectiveness of teaching programme on knowledge regarding prevention of high-risk pregnancy among antenatal mothers.

Materials and Methods: In this study researcher selected quasi-experimental (one group pre-test post-test) research design. The present study was conducted in Urban Community Health Center (UCHC) Lucknow, Uttar Pradesh on antenatal mothers between the age group of 18 to 40 years. The sample size was 70. The tools used were demographic variables, risk assessing checklist, clinical variable and self- structured questionnaire regarding high-risk pregnancy High Risk factors were identified based on age, multiparity, High blood pressure (SBP>120 mmHg, DBP>80 mmHg), weight of mother at first antenatal visit, lower Hb level (<11 mg/dl) and previous history of pregnancy complications or adverse outcome. Post test structured teaching was given to impart knowledge in antenatal mothers on prevention of high- risk pregnancy. P<0.05 was considered as significance criteria. Paired t-test was used to examine the effectiveness of teaching programme. Mean, standard deviation and mean percentage were used to quantify the level of knowledge of antenatal mothers on prevention of high-risk pregnancy. Chi-square was used to determine the association of pre-test knowledge score with selected socio-demographic variables.

Results: Out of total 70 antenatal mothers attending UCHC, the result revealed that posttest mean knowledge score was significantly higher than the mean pretest knowledge score i.e., 7.4 and 5.5 which indicated that after giving teaching intervention there was an increase in posttest knowledge score. Researcher calculated the 't' value (12.72) and the tabulated value (2.00) for this study on 69 degree of freedom and at the level of significance (p=<0.05).

Conclusion: This study identified the various risk factors and provided structured teaching on prevention of high-risk pregnancy thus bringing a significant change in the posttest knowledge score of subjects. So, it was evident that the structured teaching programme on knowledge regarding prevention of high-risk pregnancy among antenatal mothers was effective.

Keywords: High risk pregnancy, Structured Teaching Programme, Knowledge, Risk Factors.

Introduction

Pregnancy is one of the wonderful experiences imposed by nature for women and a special event of happiness, expectancy, excitement, anxiety and fear. It is a normal physiological occurrence that encompasses pregnancy and childbirth. A change during pregnancy is common; sometimes the natural changes that happen during pregnancy can cause certain complications. These complications can be abortion, seizures, intrauterine death, intrauterine growth restrictions, preterm labor, still birth, anemia, high blood pressure etc.[1]

An MMR of 210 maternal deaths per 100,000 live births across 180 countries was achieved in 2020 as a result of the predicted 2, 87,000 maternal deaths worldwide. Around 800 women per day, or around one every two minutes, died in 2020 from pregnancy- and childbirth-related avoidable causes. According to the World Health Organization about 800 women die of pregnancy- related preventable causes daily, and 99% of these deaths occur in developing countries. The global prevalence of high-risk pregnancies has been reported to be 20%, also 50 percent of perinatal mortality is because of high-risk pregnancy. Despite the severeness of the risk factors and the high-risk pregnancy still very little awareness is present in antenatal mothers. It remains poorly diagnosed, informed resulting in negative consequences.[2]

It is estimated that 50% to 70% of deaths occurs due to various problems related to pregnancy, labor and puerperium can be prevented through detection. Previous studies have evaluated association of various risk factors to high-risk pregnancy. A national level government programme aimed at better pregnancy outcome named *Pradhan Mantri Swastha Matritva Abhiyaan* has delineated such risk factors as one of the high risk factor in pregnancies.[12] Timely diagnosis and screening of high risk pregnant women has great impact with reduction in number of deaths associated with such pregnancies.[13] Studies have considered clinical data from antenatal clinics as source of information of such risk prevalence estimation.[14,15] However, very few researchers have addressed rural population from northern region of India as target for studies. A woman with high-risk pregnancy needs close monitoring regarding antenatal visits (frequent visits are needed based on the case), blood tests and scanning. The prognosis depends largely on specific conditions. Therefore, this study was conducted in order to determine the numerous hazards that emerged in pregnant women as well as the result of these pregnancies nature of intervention given to them.[2]

The present study performed data analysis on 70 antenatal mothers attending UCHC between the age group of 18-40 years. The present study objective was to assess the risk factors for high- risk pregnancy, assess knowledge regarding risk factors, determine the effectiveness of teaching programme and find out association between pretest knowledge score regarding prevention of high-risk pregnancy among antenatal mothers attending urban community health centers in district Lucknow, UP.

Materials and Methods

This study was conducted in Urban Community Health Center (UCHC) Lucknow, Uttar Pradesh. For present study the data from 4 Feb to 27 April 2023 was analyzed. The pilot study was also carried out on 10 antenatal mothers during January and February. Quantitative research approach was selected for the present study.

The study was approved by KGMU's Ethics Committee (Registration. No. ECR/262/Inst/UP/2013/RR-19) Lucknow, UP. After ethical clearance, administrative permission was obtained from Medical Officer in-charge of UCHC to conduct a study in Urban Community Health Center Lucknow, Uttar Pradesh.

Research approach: A quantitative research approach
Research design: Quasi experimental one group pre-test post-test design.
Setting of the study: Study was conducted in urban areas of Lucknow.
Research variables:
Independent variable: Structured teaching programme on high- risk pregnancy among antenatal mothers. **Dependent Variables:** Knowledge of prevention of high- risk pregnancy among antenatal mothers.
Sample size: It consisted of 70 antenatal mothers. Samples were selected from urban areas of Lucknow.

Criteria for Samples Selection:

Inclusion criteria: Antenatal mothers of age group between 18-40 years. Women who are willing to participate in the study. Women who can read and write Hindi and English.

Exclusion Criteria: Women who are severely ill. Women who cannot read and write Hindi.

Data Collection Procedure: After Self- introduction, purpose of the study was explained and risk factor assessment for high-risk pregnancy was done, and then pre-test was done by using demographic variable and structured knowledge questionnaire.

On the same day health education regarding prevention of high-risk pregnancy was implemented with the help of flash cards and charts. Post-test was conducted using same structured knowledge questionnaire.

Questionnaire containing socio- demographic information, previous clinical history, details about history of current pregnancy with medical information, recommended clinical investigations during antenatal period and risk factors that associated with current pregnancy was filled by antenatal mothers at UCHC. Data were collected and raw data was entered in master data sheet. Analysis of data was done by using descriptive and inferential statistics based on objectives and hypothesis.

Mean, standard deviation and mean percentage were used to quantify the level of knowledge of antenatal mothers on prevention of high-risk pregnancy Paired t-test was used to examine the effectiveness of teaching programme on knowledge regarding high-risk pregnancy among antenatal mothers. Chi-square was used to determine the association of pre-test knowledge score with selected socio-demographic variables.

For summarized representation of baseline characteristics, descriptive statistics and inferential statistics was used. Variables' association was evaluated using Chi-Square test. P value less than 0.05 was considered as significance criteria. Outcomes were presented in form of level of significance and Odds ratio/risk ratio as applicable.

Results

Total 70 antenatal mothers between 18-40 years took part in this research at UCHC Lucknow, UP during February 2023 – April 2023. Majority 61% of antenatal mothers were found in age group of 18-35 years, whereas 38% were found in age group of more than 35. The details about demographic analysis are as follows:

Table 1: Depicts the frequency and percentage distribution of socio-demographic variables among antenatal mothers.

n = 70

S.No.	Demographic Variables	Frequency (f)	Percentage (%)
1.	**Age (in years)**		
	Less than 18	0	0%
	18-35	43	61%
	More than 35	27	39%
2.	**Marital Status**	70	100%
	Widow	0	0%
	Separated	0	0%
3.	**Religion**		
	Hindu	19	27%
	Muslim	51	73%
	Any other	0	0%
4.	**Education Level**		
	Illiterate	15	21%
	Primary Education	13	19%
	Secondary Education	22	31%
	Graduate	14	20%
	Postgraduate	6	9%
5.	**Occupational Status**		
	Private Job	17	24%
	Government Job	2	3%
	Housewife	51	73%
6.	**Types of Family**		
	Joint	20	29%
	Nuclear	40	57%
	Extended	10	14%
	Single Parent	0	0%
7.	**Monthly Family Income (in rupees)**		
	Below 5000	14	20%
	5000-10000	32	46%
	10001-15000	19	27%
	Above 15000	5	7%
8.	**Total number of members in family**		
	Two	5	7%

	Three	18	26%
	Four	28	40%
	More than 4	19	27%
9.	**Total No of Pregnancies**		
	One	15	21%
	Two	19	27%
	Three	16	23%
	More than three	20	29%
10.	**Trimester of Pregnancy**		
	First	13	19%
	Second	19	27%
	Third	38	54%
11.	**Health Services taken during antenatal period**		
	Sub-centre	4	6%
	Primary Health Centre	19	27%
	Community Health Centre	42	60%
	Private Hospital	2	3%
	District Hospital	3	4%
12.	**Source of Information regarding HRP**		
	Healthcare workers	12	17%
	Family member	41	59%
	Newspaper	9	13%
	Mass media	8	11%

It was observed that majority of antenatal mothers were 61% in age group of 18-35 years, whereas 38% were found in age group of more than 35. As per educational status, 18% were primary school pass, 22% were in secondary school. 20% were graduate, 8% antenatal mothers were post graduate and 21% were found to be illiterate. 80 % of the antenatal mothers live in nuclear families and 10% of the antenatal mothers live in joint families as well as in extended families respectively.

Around 80% of the antenatal mothers are in the third trimester of pregnancy and 20% of the antenatal mothers are in the second trimester of pregnancy. majority 50% of antenatal mothers lie in income range between 5000 and 10000 rupees, 30% of antenatal mothers have a monthly family income below 5000 rupees. Also, 10% of antenatal mothers have a monthly family income between 10001 and 15000. There are only 10% whose monthly family income is above.

Table 2: Frequency, percentage of risk factors for high-risk pregnancy variables among antenatal mothers.

Risk Status	Score	Frequency	Percentage
Low Risk	1-8	1	1%
Moderate Risk	9-13	22	32%
High Risk	≥14	47	67%

Risk in Pregnancies

Out of 70 antenatal mothers, total 67% pregnancies were found to be High Risk and 32% in moderate risk were identified in present study.

Table 3: Pretest and posttest knowledge scores with frequency and percentage among antenatal mothers

	Pre-test		Post-test	
Knowledge Level	**Frequency(f)**	**Percentage (%)**	**Frequency (f)**	**Percentage (%)**
Good (>7)	2	3%	28	40%
Average (6-7)	30	43%	41	59%
Poor (0-5)	38	54%	1	1%

In the study it was found that before the teaching intervention, most antenatal mothers had a poor knowledge level (54%), followed by average knowledge (43%) and a small percentage with good knowledge (3%). After the teaching intervention, there was a significant improvement in knowledge levels. The percentage of antenatal mothers with good knowledge increased to 40%, while those with average knowledge also increased to 59%.

Table 4: Effectiveness of structured teaching programme for prevention of high-risk pregnancy

Knowledge Score	N	Mean	S.D.	Df	Paired T-Value
Pre-Test	70	5.5	0.9	69	12.72
Post-Test		7.4	0.7		

In the study, H1- There is a significant effect of structured teaching programme for prevention of high-risk pregnancy among antenatal mothers.

Table values show that in the pretest and post test score was compared and to see the effectiveness paired ‘t’ test was applied. The calculated ‘t’ test value was (12.72) at the level

of significance i.e. ($p<0.05$) and tabulated with degree of freedom was (2.00).
Since the calculated 't'- value was greater than tabulated 't' value the researcher rejected the null hypothesis and accepted the alternative hypothesis. That means there is a significant change in the knowledge score of posttest value of antenatal mothers. So, this was evident that structured teaching programme regarding prevention of high-risk pregnancy among antenatal mothers in antenatal clinics in selected urban area was found effective.

Table 5: Association between pre-test knowledge scores with their selected socio-demographic variables.

S-No	Variables	Frequency	Level of Knowledge			P values (0.05)	df	X^2
1	**Age (in years)**		Good	Average	Poor			
	Between 18-35	43	1	16	26	5.99	2	1.72 Ns
	More than 35	27	1	14	12			
2	**Religion**							
	Hindu	19	1	11	7	5.99	2	3.37 NS
	Muslim	51	1	19	31			
3	**Education Level**							
	Illiterate	15	0	5	10	15.51	8	9.69 NS
	Primary Education	13	0	6	7			
	Secondary Education	22	0	10	12			
	Graduate	14	1	5	8			
	Post Graduate	6	1	4	1			
4	**Occupational Status**							
	Private Job	17	1	5	11	9.49	4	19.95 *S
	Government Job	2	1	1	0			
	Housewife	51	0	24	27			
5	**Types of Family**							
	Joint	20	1	9	10	9.49	4	7.95 NS
	Nuclear	40	1	13	26			
	Extended	10	0	8	2			
6	**Monthly Family Income (in rupees)**							
	Below 5000	14	1	7	6	12.59	6	5.39 NS
	5000-10000	32	1	15	16			
	10001-15000	19	0	5	14			
	Above 15000	5	0	3	2			
7	**Total number of members in family**							
	Two	5	1	2	2	12.59	6	10.41 NS
	Three	18	1	10	7			
	Four	28	0	9	19			
	More than 4	19	0	9	10			

8	**Total No of Pregnancies**							
	One	15	1	6	8	12.59	6	7.66 NS
	Two	19	0	11	8			
	Three	16	1	8	7			
	More than three	20	0	5	15			
9	**Trimester of Pregnancy**							
	First	13	1	9	3	9.49	4	12.55 *S
	Second	19	1	3	15			
	Third	38	0	18	20			

*S=Significant
NS= Non-Significant

The data given in table above shows that the Chi-square test was used to find out association between pre-test knowledge scores with their selected demographic variables. It was found with the chi-square test results that there is no association between the pretest knowledge score with Age, Religion, Education Level, Monthly income, Type of family, total number of members and pregnancies. Also, data present in above table showed the significant association found between antenatal mothers and their selected demographic variables in terms of trimester of pregnancy (12.55 S) and occupational status (19.95 S). Thus, we can conclude that there is a significant difference between pre-test knowledge score and demographic characteristic like occupational status and trimester of pregnancy.

Discussion

The data of 70 antenatal mothers who attended UCHC was analyzed. The study revealed that out of total population, majority of the (61%) mothers were in the aged between 18 -35-year, majority of the (31%) mothers were having secondary education, the majority of the mothers (100%) were married, the majority of the (40%) mothers were having four-member family, the majority of the (46%) mothers were having Rs 5001-10000 monthly income, the majority of the (73%) mothers were Muslims, the majority of the (73%) mothers was home maker, the majority (80%)of the antenatal mothers live in nuclear families and 10% of the antenatal mothers live in joint families as well as in extended families respectively.. Moreover, The association of pretest knowledge score with their selected demographic variables by using chi- square the result revealed that there was no significant association between, pretest knowledge score and selected socio demographic variables. A similar study was conducted on prevalence of high-risk pregnancy and some related socio-demographic factors in high-risk pregnancy in rural area of Nagpur district, Central India in 2017. In this study the variables were age, education, occupation, Family income and number of pregnancies. The chi-square calculated value was less than the tabulated value. Hence there was no significant association between pretest knowledge score and selected demographic variables.

The study revealed that this analysis provides an overview of the distribution of risk statuses within the given sample size of 70. The majority of the sample falls under the category of "High Risk," (67%) followed by "Moderate Risk."(32%) The categories of "No Risk" and "Low Risk" are relatively less represented in the sample. The data depicts that the mean score of the high-risk pregnancy group is 14.5. This indicates that, on average, the antenatal mothers in the sample scored 14.5 out of 8 questions. The standard deviation of the scores within the high- risk pregnancy group is 2.2. This value represents the variability or dispersion of scores around the mean. Vast difference in sample size could be the predictor for such outcome discrepancies. Majority of antenatal mothers had a poor knowledge level (54%), followed by average knowledge (43%) and a small percentage with good knowledge (3%). After the teaching intervention, there was a significant improvement in knowledge levels. The percentage of antenatal mothers with good knowledge increased to 40%, while those with average knowledge also increased to 59%. Thus, we can conclude that the teaching intervention had a significant positive impact on the knowledge levels of the antenatal mothers. The researcher calculated the paired t-test value (12.72) at the level of significance i.e. (<0.05) and compared it with tabulated t-value (2.00) with 69 degrees of freedom. Since the calculated 't'- value was greater than the tabulated 't'- value the researcher rejected the null hypothesis and accepted the alternative hypothesis. The association of pretest knowledge score with their selected demographic variables by using chi square, the result revealed that there is no association between pre-test level of knowledge score with other demographic variables.

A similar study was conducted, and the mean difference (6.76), S.D is (+0.56), and the "t29" value67.6 shows a highly significant improvement in the knowledge score; thus, the structure teaching programme was effective in improving knowledge of postnatal mothers. The result of the study proved that effectiveness of teaching programme on knowledge regarding prevention of high-risk pregnancy among antenatal mothers had significant effect in improving their knowledge. As a result, it is the duty of health professionals to raise knowledge about spotting high- risk illnesses during pregnancy and their origins, clinical manifestations, prevention, treatment, and consequences. The study's conclusions have consequences for nursing practice, nursing education, nursing research, community and public education, among other nursing-related sectors

The discussion of the finding of the study to assess the risk factors for high-risk pregnancy and effectiveness of teaching programme on knowledge regarding prevention of high-risk pregnancy among antenatal mothers attending antenatal clinics in selected urban area. In order to achieve the objectives of the study a quasi- experimental one group pretest and posttest research design was adopted. Purposive sampling technique was used to select the sample. Data was collected from 70 antenatal mothers attending antenatal clinics in selected urban area.

Our Study has the below **limitations:**

1) Inadequate sample size due to restricted setting and not getting permission from other concerned authorities. Initially the investigator has planned to take 150 samples but now the study is limited to 70 only.

2) The health center selected for the study was, Urban Community Health Centre, Chowk. So, the findings can be generalized only to the mentioned setting.

Conclusion

The present study assessed the risk factors for high-risk pregnancy and effectiveness of teaching programme on knowledge regarding prevention of high-risk pregnancy among antenatal mothers attending antenatal clinics in selected urban area. After implementation of structured teaching programme on prevention of high-risk pregnancy there was significant improvement on knowledge of the antenatal mothers attending antenatal clinics in selected urban area. The study concluded that the structured teaching programme was effective in improving the knowledge of antenatal mothers .

Conflict of Interest: None.

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