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RESEARCH ARTICLE
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EVALUATE THE EFFECTIVENESS OF A HEALTH INSTRUCTIONAL MODULE ON PRETERM LABOUR KNOWLEDGE AND PREVENTION AMONG ANTENATAL MOTHERS IN OPD AT A SELECTED HOSPITAL AT JHANSI, UTTAR PRADESH.

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BACKGROUND OF THE STUDY:

Preterm labour is defined as labour that occurs before the 37th week of pregnancy. It happens in about 9% of all pregnancies. Preterm labour is defined as uterine contractions that generate cervical effacement and dilatation in a woman. Any woman who has a pattern of labour lasting more than an hour with contractions lasting 30 seconds and occurring as frequently as every 10 minutes should be considered to be in labour. Preterm labour is dangerous because it leads in the birth of a preterm baby. Women who give birth prematurely may experience more painless contractions, backache, and more vaginal discharge than others. Preterm birth causes for 75% of all perinatal deaths and up to 50% of infancy neurological handicaps. Preterm birth occurs at varying rates in different populations, with the lowest incidence occurring in the socioeconomically advantaged population and the highest incidence occurring in the medically impoverished community. Preterm labor will be managed after identifying the women who are at risk for this complication.

Objectives of the Study

1. Asses the level of knowledge regarding antecedents of preterm labor and its prevention among antenatal mothers.
2. Prepare a self instructional module on antecedents of preterm labor and its prevention.
3. Evaluate the effectiveness of self instructional module on antecedents of preterm labor and its prevention.
4. Determine association between the mean pretest knowledge scores regarding antecedents of preterm labor and its prevention among antenatal mothers with their selected demographic variables.

Method: This was experimental study total 40 subjects were selected through non probability convenient sampling technique. Pre-experimental research design was used. Data was collected by structured interview technique. Data collected under the 2 sections (socio-demographic data, knowledge questionnaire).The reliability of the tool was established by split half method formula. The realibity result of knowledge was r=0.904.prepared self instruction module regarding antenatal care.

Result: In pre test 16 (40%) of the antenatal mothers had average knowledge only and remaining 24(60%) had low knowledge. Post test scores compared to pre test scores showed an observable increase in the knowledge of antenatal mothers as 12 (30%) of them had high knowledge and remaining 28(70%) had average knowledge. The mean of knowledge score in pre test was increased from 16.2 $\pm$ 2.85 to 22.45 $\pm$ 2.13 in post test.

Conclusion: The study proved that health instructional module on antecedents of preterm labor and its prevention among primipara mothers was scientific, logical and cost effective strategy.

Keywords: Effectiveness, Self Instructional Module, Antecedents, Preterm labor

Introduction:

Preterm labour is defined as labour that occurs before the 37th week of pregnancy. It happens in about 9% of all pregnancies. Preterm labour is defined as uterine contractions that generate cervical effacement and dilatation in a woman. Any woman who has a pattern of labour lasting more than an hour with contractions lasting 30 seconds and occurring as frequently as every 10 minutes should be considered to be in labour. Preterm labour is dangerous because it leads in the birth of a preterm baby. Women who give birth prematurely may experience more painless contractions, backache, and more vaginal discharge than others.[1]

Preterm birth causes for 75% of all perinatal deaths and up to 50% of infancy neurological handicaps. Preterm birth occurs at varying rates in different populations, with the lowest incidence occurring in the socioeconomically advantaged population and the highest incidence occurring in the medically impoverished community. Preterm labour will be managed after identifying the women who are at risk for this complication.[2]

Previous history of preterm labour, infections, smoking habits, lack of nutritional status, maternal complications such as pregnancy complications (preeclampsia, antepartum haemorrhage, premature rupture of membrane) and uterine anomalies such as cervical incompetence and malformation of the uterus, foetal complications such as intra uterine death, placenta previa, iatrogenic and idiopathic causes are the major risk factors for preterm labour.[3]

In affluent countries, preterm birth is a major cause of perinatal illness and mortality. The health care providers who work with women must be informed of the risk factors and tools available to anticipate preterm labour, as well as the interventions available to delay preterm labour. Preterm labour has been predicted using vaginal examination to assess cervical status and ultrasound visualization of cervical length and dilatations. This will aid in the reduction of prenatal morbidity and mortality.[4]

The focus on treatment for preterm labor lies in risk screening, assessment, patient education, and use of various tocolytic drug regimens. During past years, preterm labor mothers were treated in the hospital with Intravenous tocolytic drug therapies. However mother can receive oral subcutaneous tocolytics while remaining in their homes. So nurses play an integral role in providing homecare and

education to these mothers who comply with lifestyle changes to prolong the pregnancy towards term gestation.[5]

Good antenatal care is important in the prevention of preterm labor. Advice on bed rest and abstinence from sexual intercourse should be given to high risk mothers. In selected mothers, prophylactic cervical cerclage and antibiotic treatment of women with bacterial vaginosis may be associated with a reduction in preterm delivery.[6]

Preterm birth remains one of the biggest challenges in perinatal health care globally. Every year 15 million preterm babies are being born. At least one million of these babies die annually form conditions related to preterm birth . Preterm birth rate is on the rise in almost all countries worldwide. The rate ranges from 5% to 18% . The greatest percentage (35%) of the neonatal deaths worldwide is a result of preterm birth . Preterm birth is the second leading cause of under 5 mortality. More than 60% of these births occur in Sub Saharan Africa and South Asia.[7] Malawi has the highest (18.1%) preterm birth rate followed by Comoros (16. 8%), Congo (16.7%) and Zimbabwe (16.6%) . In Africa 24% of neonatal deaths are directly a result of complications of preterm birth which include breathing difficulties, intracranial bleeds, and jaundice . In high income countries almost all preterm babies survive as 1 out of 10 dies whist 9 out of 10 babies die . Preterm babies born in Africa have a risk of death that is around 13 times higher than full term babies . This disparity could be due to lack of feasible, cost effective interventions like warmth, breastfeeding support, basic care for infections and breathing difficulties in the developing countries are the main reasons for the difference in preterm baby survival rate.[8]

Material and Methods

Study area and period: Study conducted at Jhansi area and 1 months

Study design

A institutional based pre experimental one group pre test post test research design was conducted

Inclusion criteria and Exclusion criteria:

Inclusion Criteria: The study includes the antenatal mothers who are:
i.) Able to understand and read/write Hindi,
(ii). Available at the time of data collection,
(iii). Willing to participate in the study.

Exclusion Criteria: The study excludes the antenatal mothers who are**:**

- (ii) Cannot understand and read/write Kannada.
- (iii) Are suffering from chronic diseases.
- (iv) are not willing to participate in the study

Sample size determination

40 Antenatal mothers in selected antenatal OPD hospitals at Jhansi were considered as sample for the present study.

Operational Definition

- **Evaluate:** It refers to the estimation of knowledge among antenatal mothers regarding antecedents of preterm labor and its prevention.
- **Effectiveness:** It refers to the desired change brought about by the self instructional module and is measured in terms of significant knowledge gain in the post test

- **Self instructional module:** It refers to the learning material regarding antecedents of preterm labor and its prevention developed by the investigator for the purpose of achieving pre specified objectives.
- In this study it refers to an independent learning material, which has an organized content that enhances the knowledge of antenatal mothers regarding antecedents of preterm labor and its management.
- **Management:** It refers to the nursing interventions to prevent, control or treat the antecedents of preterm labor.
- **Preterm labor:** It refers to the labor that starts before the 37^{th} completed weeks of gestation counting from the day of the last menstrual period.
- **Antenatal mothers:** Pregnant women more than 24 weeks of gestational age.

Selected Variables

Variable is an attribute of a person or object that varies and that which taken on different values.[21]

Dependent variable

The outcome of interest. The variable that is hypothesized to depend on or caused by another variable.[21]

In this study the knowledge among antenatal mothers regarding antecedents of preterm labor and its prevention was considered as dependent variable.

Independent Variable

The variable that is believed to cause or influence the dependent variable.[21]

In this study the self instruction module on prevention of preterm labour was considered as independent variable.

Extraneous Variables

These are the variables other than independent variables, which can influence the dependent variable.

Assumptions

It refers to the beliefs that are held to be true, but have not necessary to be proven[21]. The present study was assumed that:

1. The knowledge regarding antecedents of preterm delivery and its prevention will help the mothers to prevents these factors in their antenatal period.
2. Self instructional module is an accepted teaching strategy that can enhance the knowledge of antenatal mothers regarding Antecedents of preterm labor.
3. Antenatal mothers will have interest to participate in the study.

Hypotheses

H_1. The mean post test knowledge scores of the antenatal mothers regarding antecedents of preterm labor and its preventions will be significantly higher than their mean pre test knowledge scores.

H_2. There is a significant association between the mean pre test knowledge scores of the antenatal mothers regarding antecedents of preterm labor and its prevention and their selected demographic variables.

Population

Population is a complete set of persons or objects that possess a common characteristic that is of interest to the researcher.

The target population of the present study was refers to the antenatal mothers attending at selected antenatal OPD.

Sample
Sample is a subset of population, selected to represent the population.
In present study the sample consists of 40 antenatal mothers in selected OPD hospitals at Jhansi.

Sampling Technique
Sampling is a process of selecting the portion of the population to represent the entire population.
Convenient Sampling Technique was used to select the sample for the present study

Sample Size
40 Antenatal mothers in selected antenatal OPD hospitals at Jhansi uttarpradesh were considered as sample for the present study.

Data collection instrument and procedure
Structured and semi-structured English version questionnaire was prepared from the literature review by principal -investigators. Translation to hindi version and again translated to English version were used by the principal investigators before starting the data collection time. It includes about antenatal mothers socio-demographic factors, Assertiveness training programme towards the prevention of abuse.

Data collection instrument and methods:-The data collector was the group members. Face to face interview held privately after verbal consent is obtained from each participant. The data was collected until the required sample size achieved.

RESULT:

Table 1: Frequency distribution of antenatal mothers according to their socio demographic characteristics.

N = 40

Socio-Demographic variables	No of respondents(f)	% of respondents
Age (in years)		
18-22	22	55.00
23-27	14	35.00
28 &above	4	10.00
Educational status		
No formal education	2	5.00
Primary	12	30.00
Secondary	6	15.00
PUC	10	25.00
Diploma or/and graduation	8	10.00
Post Graduation	2	5.00
Occupation		
House wife	10	25.00
Coolie	16	40.00
Government employee	6	15.00
Private employee	8	20.00
Family Income(monthly)		
Rs. 1000/--Rs.2000/-	2	5.00
Rs.2001/--Rs.4000/-.	24	60.00

Rs.4001/--Rs.6000/-.	6	15.00
Rs.6001/--and above	8	20.00
Place of Residence		
Urban	18	45.00
Rural	22	55.00
Source of Information		
News paper	4	10.00
Mass media	10	25.00
Magazine	6	15.00
Others	20	50.00
Gestational age at the time of data collection		
Below 3 months	1	2.5
3-5 months	19	47.5
6-8 months	13	32.5
8 months and above	7	17.5

Table.1 Represents the percentage distribution of study subjects. As per age out of 40 subjects, 22(55%) of the subjects belong to 18-22 years, followed by 14(35 %) in the age group of 23-27 years and 4(10 %) were 28 and above years of age. Out of 40 subjects, 2(5%)of the subjects had no formal education, 12(30%) up to primary education, 6(15%) had secondary education, 10(25%)had PUC, 2(5%) had diploma,6(15%) had degree and remaining 2(5%) of the subjects had post graduation.10(25%)of the subjects, were housewives, 16(40%) were coolie, 6(15%) were government employee, and remaining 8(20%) of the subjects were private employee. 2(5%) subjects had an income of Rs.1000/--Rs2000/-, followed by 24(60%) subjects with income between Rs. 2001/--4000/-,6(15%) had about Rs 4001/- -6000 and 8(20%) had about Rs.6001/-and above.

Majority-22 (55%) of subjects were staying in rural area and remaining 18(45%) were in urban area. The following diagram represents the percentage distribution of study sample by source of information regarding health. 4(10%) subjects were getting information from news paper, followed by 10(25%) subjects were getting from mass media,6(15%) were getting from magazine and 20(50%) were getting from others like friends, neighbours, relatives, etc.

TABLE 2: Percentage distribution of knowledge levels of antenatal mothers on prevention of premature labour in pre test and post test

N = 40

Levels of knowledge	**Pre test**		**Post test**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
High knowledge	00	00	12	30
Average knowledge	16	40	28	70
Low knowledge	24	60	__	__

Table 2 presents the overall knowledge levels of antenatal mothers on prevention on premature labour. In pre test 16 (40%) of the antenatal mothers had average knowledge only and remaining 24(60%) had low knowledge.

Post test scores compared to pre test scores showed an observable increase in the knowledge of antenatal mothers as 12 (30%) of them had high knowledge and remaining 28(70%) had average knowledge.

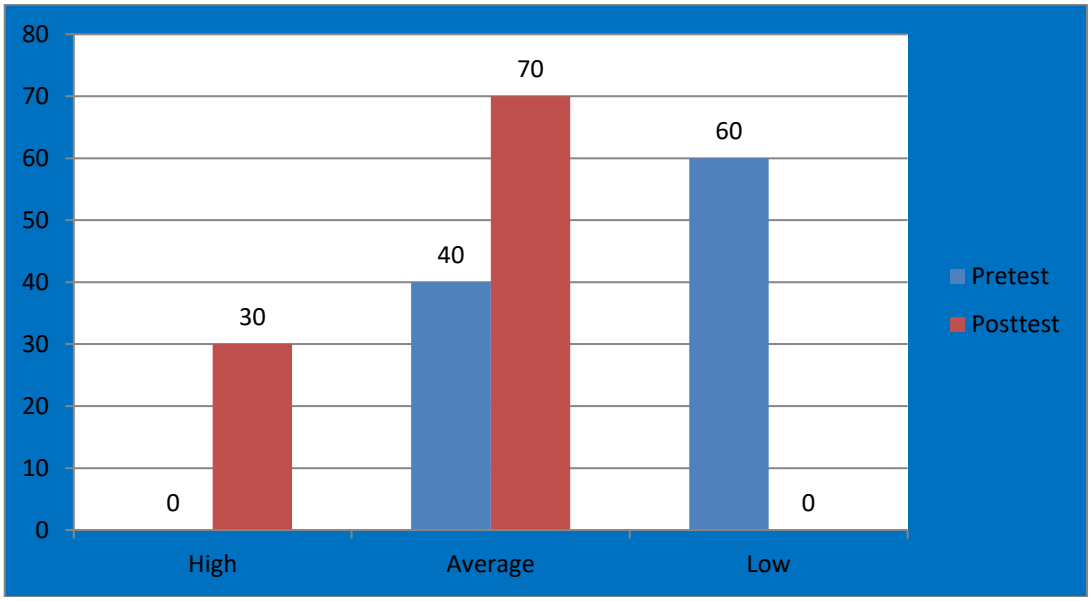

Fig no. 1 Percentage distribution of antenatal mothers by their knowledge on prevention on premature labour in pre test and post test

TABLE 3: Comparison of knowledge scores of antenatal mothers before and after intervention of self instruction module on premature labour.

N = 40

Mean Difference	Standard error of difference	Paired 't' test value	
		Calculated value	Table value
08.66	**2.4**	**17.49**	**1.96**

(Table value of 't' for 39 df at 0.05 level of significance is 2.26)

Table 3 reveals that the overall mean difference was 08.66 with paired 't' value 17.49. Thus it was revealed that the post test mean score was significantly higher than the pre test mean score. The table value of paired't' test at 39 degree of freedom and at 0.05 level of significance is 2.26. Since the calculated value was higher than the table value, the research hypothesis H_3 was accepted. Hence there was a significant difference between the pre test and post test practice scores on prevention of premature labour.

Table 4: Association between knowledge scores and selected socio demographic variables

SL. NO	Socio demographic variables	Df	Chi-square value	Table value	Level of significance
1.	Age	1	3.523	3.84	0.05
2.	Educational status	1	12.2	3.84	0.05
3.	Occupation	1	7.29	3.84	0.05
4.	Place of residence	1	6.532	3.84	0.05
5.	Source of information regarding health	1	2.434	3.84	0.05

Table no. 4 depicts the association between socio demographic variables of sample and their knowledge scores.

- For age the calculated χ^2 value was 3.523 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was less than the table value the research hypothesis related to Age of the sample and pre test knowledge score was accepted. Hence no significant relationship was observed between the Age of the antenatal mothers regarding prevention of premature labour
- The calculated χ^2 value was 12.2 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was more than the table value the research hypothesis

related to Educational status of the sample and pre test knowledge score was rejected. Hence significant association was observed between the Educational status of the antenatal mothers and their pre test knowledge score on selected premature labour and their prevention.

- For education the calculated χ^2 value was 7.29 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was more than the table value the research hypothesis related to occupation of the sample and pre test knowledge score was rejected. Hence significant association was observed between the occupation of the antenatal mothers and their knowledge score on prevention of premature labour.
- For family monthly the calculated χ^2 value was 6.532 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was more than the table value the research hypothesis related to family income of the sample and pre test knowledge score was rejected. Hence significant association was observed between the family income of the antenatal mothers and their pre knowledge score on selected prevention of premature labour and their prevention.
- The calculated χ^2 value was 2.434 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was less than the table value the research hypothesis related to source of information of the sample and pre test knowledge score was accepted. Hence no significant relationship was observed between the source of information of the antenatal mothers and their pre test knowledge score on selected premature labour and their prevention.

Table 5 Association between practice scores and selected socio demographic variables

SL. NO	Socio demographic variables	df	Chi-square value	Table value	Level of significance
1.	Age	1	2.732	3.84	0.05
2.	Educational status	1	4.905	3.84	0.05
3.	Place of residence	1	5.633	3.84	0.05
4.	Occupation	1	3.346	3.84	0.05
5.	Source of information regarding health	1	1.346	3.84	0.05

Table no.5 depicts the association between practices scores and socio demographic variables.

- For age of sample the calculated χ^2 value was 2.732 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was less than the table value the research hypothesis related to age of the sample and practice score was rejected. Hence no significant relationship was observed between the age of the antenatal mothers.
- For educational status of sample the calculated χ^2 value was 4.905 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was more than the table value the hypothesis related to educational status of the sample and practice score was accepted. Hence a significant relationship was observed between the educational status of the antenatal mothers and their prevention of premature labour.
- For place of residence the calculated χ^2 value was 5.633 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was less than the table value the research hypothesis related to place of residence of the sample and practice score was accepted. Hence a significant relationship was observed between the place of residence of antenatal mothers and their prevention of premature labour.
- For occupation status of sample the calculated χ^2 value was 3.346 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was less than the table value the research hypothesis related to occupation of the sample and practice score was rejected. Hence no significant relationship was observed between the occupation of the antenatal mothers and their prevention of premature labour.
- For source of information of sample the calculated χ^2 value was 1.346 and table value of χ^2 at 5% level of significance with degree of freedom 1 is 3.84. As the calculated value was less than the

table value the research hypothesis related to source of information of the sample and practice score was rejected. Hence no significant relationship was observed between the source of information of the antenatal mothers and their prevention of premature labour.

Conclusion: After providing self instructional module helps to antenatal mothers regarding prevention of premature labour**.** Encourage the nurses to use the self instructional module in imparting knowledge of the women and also the media can help the public to find out how the knowledge can be given to the mothers. They can also find other methods of imparting knowledge to the mother

Discussion:

- This was supported by the study conducted to evaluate the effectiveness of a set of information, education and communication (IEC) strategies designed to increase the awareness of danger signs in pregnancy, postpartum period among pregnancy or recently pregnant women. They concluded that safe motherhood programs can effectively increase knowledge of danger signs through clinic and community based education strategies.[9]
- This objective was supported by the study conducted on the effectiveness of the self instruction module on self care activities of pregnancy induced hypertension and maternal outcome was researched and published. . It was concluded that self instruction module was effective in prim parity. The knowledge and practice on self care activities is also in the effective control of pregnancy induced hypertension among primigravida with pregnancy induced hypertension.[10]
- Similar study conducted to assessed the level of knowledge of PE and evaluated the factors associated with knowledge adequacy among pregnant women attending antenatal care at a University Hospital in Kumasi-Ghana. A validated closed-ended questionnaire was used to collect socio-demographic information and history of PE. Knowledge of PE was assessed based on a series of questions regarding the awareness, signs/symptoms, risk factors and complications of PE. Responses were scored percentage-wise and grouped into low (< 60%), moderate (60–80%) and high (80–100%). Knowledge score was then re-stratified into adequate (% score of ≥60%) and inadequate knowledge of PE (% score of < 60%).Result showed that the prevalence of inadequate and adequate knowledge of PE was 88.6% (mean score = 55.5 ± 4.3%) and 11.4% (mean score = 76.3 ± 5.9%), respectively. For participants with adequate knowledge of PE, 9.1% (mean score = 67.4 ± 6.9%) and 2.3% (mean score = 85.2 ± 5.1%) had moderate and high knowledge, respectively. Study concluded that the knowledge of PE among pregnant women in Ghana is low. The prominent factor that facilitates adequacy of knowledge of PE is higher level of education.[11]

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