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RESEARCH ARTICLE

EFFECTIVENESS OF EDUCATIONAL INTERVENTION PROGRAMME REGARDING PRACTICES ON BIRTH PREPAREDNESS AMONG PRIMIGRAVIDA WOMEN

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ABSTRACT

Introduction: Birth preparedness is a key component of globally accepted safe motherhood programmes & is widely promoted. Birth preparedness helps ensure that women can reach professional delivery care when, Labour begins. Each year, worldwide, approximately 8 million women suffer from pregnancy-related complications more than half a million women die from these complications. Maternal mortality refers to deaths due to complications from pregnancy or childbirth. (Chinmaya Kumar Mohapatra and Hiranmaya Nanda, 2015) The issue was given prominence in MDG goal 5 to improve maternal health, with one of its bold targets the reduction of the MMR by three quarters between 1990 & 2015. Out of the 2, 73,500 global maternal deaths in 2011, India accounts for 50,648 around 19% of the global burden. (The Federation Of Obstetric & Gynecological Societies Of India, 2015) Majority of these deaths could be prevented through proven, effective, and affordable actions. Apart from medical causes, there are numerous interrelated socio-cultural factors which delay care-seeking and contribute to these deaths. Care-seeking is delayed because of the delay in (a) identifying the complication, (b) deciding to seek care, (c) identifying and reaching a health facility, and (d) receiving adequate and appropriate treatment at the health facility (Tabassum Barnagarwala, 2014) Medical causes are often taken care of, if the mother identifies the complication & approaches the health facility at the earliest, but majority of them fail to do so.

Objectives of the study:

- To explore about practices of pregnant women on preparation for delivery & obstetrical emergencies in study and control group.
- To identify association of demographic variables with practices on birth preparedness in study and control group.
- To correlate practices on birth preparedness with outcome of pregnancy in study and control group

Research methodology:

Study approach adopted for study was evaluative, study design was experimental (RCT) two group pre test post test design. Study was conducted in selected urban health center. Simple random sampling was used to select the groups.

Results:

Major findings:

Section 1: Analysis of Demographic variables

Distribution of demographic variables in study and control group shows that, majority of the participants in study (53.14 % & 42.85%) and control group (46.85% & 44%) are less than 25 yrs of age, (87%) in study group & (88%) in control group were found to be Hindu by religion, (49%) from study group and 104 (59%) from control group had completed secondary education, 167 (94%) from study group & 167 (95%) from control group were housewife, (47%) in study group and (45%) in control group were found with monthly income ranging between Rs 10,000 to 15,000/month & (57%) from study group and (55%) from control group had nuclear family. Sources of information wise distribution of participants in study and control group describes, majority of participants 154 (87%) from study group identified electronic media as their basic source of information for birth preparedness & (77.71%) from control group identified family as their source of information for birth preparedness.

Section 2: Analysis of self reported Practices on preparation for delivery & obstetrical emergencies

Description of score based on item wise analysis of practices on preparation for delivery & obstetrical emergencies illucates that, majority of participants were not practicing on preparation of delivery in study & control group before intervention, whereas after intervention increase in practice score in study group was seen but no change in control group practice score. Thus we reject Null hypothesis and accept research hypothesis. Distribution of overall practice score on preparation for delivery & obstetrical emergencies in study & control group table describes, practice score among study group in pre test was poor and it increased to good in post test, whereas Practice score among control group in pre test and post test was average. Comparison of overall practice score on birth preparedness in study and

control group shows a significant difference pre test, post test score between study and control group as P<0.0001. Thus we reject null hypothesis and accept research hypothesis. Association of Practice Score with demographic variables among study group shows association with education, type of family & occupation. & in control group shows association with religion, education and occupation.

Section 3: Analysis of labor preparedness with outcome of pregnancy

Distribution of labor preparedness with outcome of pregnancy in study and control group illustrates that majority of participants in study group had planned for health facility (99.38%), transportation (93.83%) , birth companion (95%) and arranged for blood donor (91.97%) whereas only (20.37%) of participants identified danger signs and only (4.94%) sought care in obstetric emergency. In control group (38.27%) of participants had a birth companion during delivery, (45.06%) sought care in obstetric emergency, (12.96%) had planned transportation, (11.73%) planned health facility only (3.70%) identified warning signs and (3.09%) had arranged blood donor. On comparison of outcome in study and control group it showed highly significant difference on all elements of birth preparedness. Thus we reject null hypothesis and accept research hypothesis.

Highly statistical significant association was found between post test practice score and outcome of pregnancy (primary) in study group i.e. identification of danger signs, birth companion & care seeking in obstetric emergency as P<0.005 and rest were not statistically significant as P>0.05. Thus we reject null hypothesis and accept research hypothesis. No association was found between post test practice score and outcome of pregnancy in control group as P>0.05. Thus we accept null hypothesis and reject research hypothesis.

Section 4: Analysis of birth preparedness with mode of delivery

In mode of delivery wise distribution of participants in Study and control group shows slight difference but not statistical significance (borderline). In comparison of pre and post test practice score according to mode of delivery in Study & control group does not shows a significant difference as P>0.05.

Section 5: Analysis of labor preparedness with maternal condition on delivery

Distribution of participants based on mother condition on delivery in study and control group illucates that, majority 59.87% of mother's condition was normal & 40.12% of mother's condition was complicated in study group, whereas 58.64% of mother's condition was complicated & 41.35% of mother's condition was normal in control group. And on comparison of mother's condition on delivery wise distribution of participants in Study and control group shows a significant difference as P<0.001. In comparison of maternal complication of participants in study and control group, found to be significant in complications like decreased fetal movement in study group as P<0.05 but not statistical significant and does not show any significance with other complications as P>0.05. In Comparison of pre and post test mean practice score according to maternal complication in Study & control group does not show any significant difference as P>0.05.

Section 6: Analysis of labor preparedness with fetal condition on delivery

Distribution of participants based on fetal condition on delivery study and control group illustrates that, majority 91.97% of fetal condition was normal & 8% of fetal condition was complicated in study group, whereas 33.95% of fetal condition was complicated & 62.34% of fetal condition was normal in control group. And on comparison of fetal condition on delivery wise distribution of participants in study and control group shows a significant difference as P<0.0001. Distribution of participants based on fetal findings at the time of delivery in study and control group showed that Low APGAR, Prematurity, NICU on delivery was statistically significantly in study group than control group. LBW, IUGR was not statistical significant in study group than control group. In Comparison of pre and post test practice score according to fetal complication in Study & control group does not show any significant difference as P>0.05.

Conclusion: Education has always played a vital role in behavioral change. Educational intervention programme was found to be effective as results of the study suggest there was significant increase in practice score among study group as compared to control group. On correlating birth preparedness with outcome of pregnancy showed a highly significant difference in practice score among study group as compared to control group. Association of demographic variables with birth preparedness showed significant association with education, type of family and monthly income among study and control group.

INTRODUCTION

Birth preparedness includes antenatal care, intranatal care & postnatal care. However more emphasis is given on antenatal care & postnatal care whereas intranatal care is neglected. It is assumed that it is a natural process, as pain will start she will undergo the labor process & delivery will take place irrespective of its outcome. Labor preparedness (Intranatal care) will help pregnant women to acquire skills and confidence needed to make birth a positive experience as it dissolves fears and makes pregnancy a time to remember. India accounts for the maximum number of maternal deaths in the world about 17 per cent or nearly 50,000 of the 2.89 lakh women who died as a result of complications due to pregnancy or childbearing in 2013. Nigeria is the next with nearly 40,000, stated the UN report on maternal deaths. (Tabassum Barnagarwala, 2014) From 1990 to 2013, the global maternal mortality ratio declined by 45 per cent – from 380 deaths to 190 deaths per 100,000 live births, according to UN inter-agency estimates. (Chinmaya Kumar Mohapatra and Hiranmaya Nanda, 2015) Majority of these deaths could be prevented through proven, effective, and affordable actions. Apart from medical causes, there are numerous interrelated socio-cultural factors which delay care-seeking and contribute to these deaths. Care-seeking is delayed because of the delay in (a) identifying the complication, (b) deciding to seek care, (c) identifying and reaching a health facility, and (d) receiving adequate and appropriate treatment at the health facility (Tabassum Barnagarwala, 2014). Medical causes are often taken care of, if the mother identifies the complication & approaches the health facility at the earliest, but majority of them fail to do so. However interrelated socio-cultural factors which delay care seeking are neglected by everyone i.e. mother, family members & health care professionals. Childbirth education can simplify pregnancy and birth and help women navigate the maze of modern obstetrics in order to have a safe, healthy birth. Pregnancy is complex and fraught with potential for worry and confusion. It is easy to fall into the trap of thinking that things can go terribly wrong. Excellent

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childbirth education can help women learn how simple birth can and should be, how to stay confident in their ability to grow and birth their babies, and how to avoid "spoiling the pregnancy" with worry and fear. (Maternal mortality in 2000) The investigator during her clinical postings and interaction with primigravida women observed that they had poor knowledge regarding various aspects of birth preparedness. Hence, the investigator felt the need to assess the knowledge on birth preparedness among primigravida women and feels it is mandatory to educate the primigravida mothers and their family members regarding birth preparedness. This study will help to identify the awareness of birth preparedness among primigravida women.

Title of the study

"Effectiveness of educational intervention programme regarding knowledge on birth preparedness among primigravida women".

Objectives of the study

- To determine knowledge of primigravida women on various elements of birth preparedness in study and control group.
- To identify association of demographic variables with knowledge on birth preparedness in study and control group.
- To correlate knowledge on birth preparedness with outcome of pregnancy in study and control group.

Assumption: Primigravida women

- May have some knowledge regarding birth preparedness.
- Who are older may be more knowledgeable regarding birth preparedness.
- With higher educational status may be more knowledgeable regarding birth preparedness.
- Belonging higher economic status may be more knowledgeable regarding birth preparedness.
- Staying in joint families may be more knowledgeable regarding birth preparedness.
- Educational intervention programme may enhance the knowledge of primigravida women regarding birth preparedness.

Hypothesis

H0 (1): There is no difference in the knowledge regarding birth preparedness before and after intervention in study and control group.

Delimitations

- Study is done only in a selected urban health center
- Limited to primigravida women attending antenatal OPD at selected urban health center
- The study is delimited to primigravida women who are above 27 weeks of pregnancy

Limitations

The data collected depends upon the information given by the participants which may be false.

Ethical consideration

- The study proposal was sanctioned by RRC & Ethical committee of the MGMIHS.
- Permission was obtained from the concerned authority of the selected corporation Hospitals, Pune.
- Informed consent was taken from the participants.

In the process of carrying out the present study, the investigator has reviewed the following literature which has been categorized under the following headings.

Solomon Suglo, Mate Siakwa, conducted a cross-sectional study on knowledge and practices on birth preparedness among expectant mothers seeking antenatal care at the tamale teaching hospital, Ghana. The aim of this study was to assess the awareness and intention to use maternity services among pregnant women. The study was conducted from February 2016 to April, questionnaires, expectant mothers were assessed on knowledge regarding the risks associated with pregnancy as well as delivery and birth plan arrangements. Demographics (age, ethnicity, education, marital status, occupation, etc) were summarized using frequency tables while the $\chi 2$ test was used to determine associations between respective variables. Variables that displayed significant associations were entered into a multiple logistic regression model to ascertain the strength of association (Odds Ratios) between respective variables. At the 95% confidence interval, a p-value less than 0.05 were deemed statistically significant. Strong determinants of women's choice of facility delivery included: higher education (AOR=1.9, 95% C.I. 1.16-3.04, p=0.01), women with four or more (4+) ANC visits (AOR=5.4, 95% C.I. 2.54-11.29, p<0.01), women who disagreed to 'home birthing tradition' (AOR=2.4, 95% C.I. 1.18-4.85, p=0.02). Despite women having high level of knowledge on obstetric risk factors, preparedness for birth was shown to be low in this study. It is therefore critical for stakeholder to redefine strategies towards improving birth preparedness among women if the Sustainable Development Goals are to be attained. (Solomon Suglo and Mate Siakwa, 2016)

Chetna Mehta, Poonam Sheoran, conducted a co-relational descriptive study was conducted with the aim to assess birth preparedness in terms of knowledge and practices among primigravida mothers in selected hospitals of Ambala, Haryana. The objective of the study was to assess the knowledge, practice, determine the correlation between knowledge and practice score of primigravida mothers and to determine the association of knowledge and practices with their demographic variables regarding birth preparedness. Purposive sampling is used to collect data from 100 primigravida mothers. Setting of the study was Civil Hospital Ambala, Haryana. The data was collected by administering the structured knowledge questionnaire and express practice checklist. More than half of primigravida mothers (52%) had below average knowledge and majority of primigravida mothers (99%) had good level of expressed practices. There is a negligible positive non significant co-relation between the knowledge and practice score of primigravida mothers regarding birth preparedness. This study concluded that primigravida mothers had below average knowledge but following good practices regarding birth preparedness. (Chetna Mehta and Poonam Sheoran, 2016)

Rajesh P, Swetha R., Rajanna M. S., Krishna Iyengar, Mahesh S. H., Cheluve Gowda (2016), conducted a study to assess the birth preparedness and complication readiness among antenatal women attending district hospital in Tumkur, Karnataka, India. Globally, more than 40% of pregnant women may experience acute obstetric problems. A cross-sectional study was done among 371 antenatal women attending antenatal clinic in a District hospital. After getting consent, all of them were interviewed with a structured questionnaire. Out of 371 pregnant mothers, only 133 (35.85%) were well prepared for child birth. 28.03% of women didn't know even a single danger sign and 24.26% mentioned at least one danger sign. Only 23% of the pregnant women were sensitized by the health worker regarding the danger signs. Among the socio-demographic characteristics collected in this study, parity, education status of mother and husband and women who had child birth within 2 years was significantly associated with well preparedness status of BPACR. BPACR - preparedness was observed among 35.85%of pregnant mother. Awareness regarding danger signs during pregnancy, child birth and postpartum period were very poor. Preparedness was observed to improve with mother's and spouse education status, increase in parity and women had child birth within two years were better prepared. (Rajesh *et al*., 2016)

Nwankwo, Clementina U; Okafor, Jerome O; Makachi, Monica C; Anieche, John E; Chiejina, Edith N and Egboka, Oluchukwu L (2016), carry out a research on effect Of Maternal Health Education On The Health Knowledge Of Pregnant Mothers Attending Ante-Natal Clinics In Anambra State, Nigeria. This study was designed to determine the effect of maternal health education on the health knowledge of pregnant mothers attending antenatal clinics in Anambra State, Nigeria. Demographic variables of age group and location were considered in this study. Quasi-experimental pre-test, post-test, control non randomized design was used for the study. The sample consisted of 211 pregnant women attending antenatal clinics in the sampled health facilities in Anambra State. Purposive sampling technique was adopted for the study. A validated and reliable Maternal Health Knowledge Questionnaire (MHKQ) was the instrument for data collection. Data collected were analyzed using descriptive statistic of means for answering the research questions (mean difference). The null hypotheses were tested using Analysis of Covariance (ANCOVA) at .05 level of significance. The results among others showed that mothers in experimental group recorded higher mean difference health knowledge scores (8.99) more than those in control group (mean difference for health knowledge scores = 1.11). Maternal health education had significant influence on health knowledge of pregnant mothers ($P < .05$). Researchers therefore concluded that maternal health education increased health knowledge of pregnant mothers. Hence, they recommended among others that maternal health education must be upheld in every antenatal clinic. (Nwankwo, Clementina *et al*., 2016)

Mandar K Sadawarte, Deepika Y Nandanwar, Aftab Siddiqui, Sumit G Wasnik, Abhishek U Joshi (2015), an interventional study to assess the change in knowledge and attitude regarding health care of pregnant women among adolescents of Tribal Ashram Shala, Sakwar, Palghar, by four-pronged approach. The objective of the study was to assess knowledge and attitude of adolescent school children about health care of women during pregnancy and the change following specific interventions and to identify the areas of maternal health care that revealed a good retention among study subjects for 1 calendar year in developing a model among adolescent boys and girls. Baseline information about health care of pregnant women was collected using a structured questionnaire. Health education sessions comprising of chalk-and-talk method of 2 h each were conducted over a period of 2 weeks. Again, questionnaires were given at 1, 6, and 12 months after the session to determine the retention of knowledge among the students. About 57.14% students chose ANC registration within first 3 months of pregnancy, and about 69.84% said that three ANC visits are necessary before health education. Knowledge regarding importance of spacing between two pregnancies, change in diet, IFA tablets, and TT injections in pregnancy was substantial. Four-pronged education method is useful in sustaining the change of knowledge and attitude regarding maternal health care in adolescents. (Mandar, 2016)

Radhika (2015), conducted a study to assess effectiveness of structured teaching programme on knowledge regarding prevention of leg cramps among antenatal mothers at Maternal Child Health Center, Tirupathi. Leg cramps is a common problem in pregnancy particularly at night. The causes are usually due to a sluggish circulation in the legs because of the pregnancy and it is made with the increased pressure as baby grows. This study is conducted to assess the effectiveness of structured teaching programme on prevention of leg cramps by comparing pre test and post test. Pre experimental one group pre test and post test design was adopted to conduct study among ante natal mothers at Maternal Child Health Centre, Tirupati. Non probability convenience sampling technique was utilized to select the samples of the study. The tool was validated by experts and modifications were made according to experts suggestions. Overall pretest mean was 9.800 and standard deviation was 3.805 and post test mean was 29.860 and standard deviation was 1.600. The findings of this study revealed that structured teaching programme was effective in enhancing the knowledge regarding prevention of leg cramps among antenatal mothers. (Radhika, 2015)

Research methodology

Study approach: Evaluative

Study design: Experimental (RCT) Two group pre test post test design

Setting: Selected Urban Health Center

Variables

In the present study, three variables are identified they are independent variable, dependent variable and demographic variable.

Independent variable:	In the present study, independent variable is Educational intervention on Birth Preparedness
Dependent variable:	In present study, the dependent variable is Outcome of Pregnancy
Demographic variable:	In the present study, demographic variable are Age, Religion, Education, Income, Occupation, Type of family, source of Information

Population

The population of the present study comprises of Primigravida Women.

Target population: The target population for present study comprises of Primigravida Women above 28 weeks of pregnancy.

Accessible population: The accessible population for the present study consists of Primigravida women above 28 weeks of pregnancy attending ANC OPD.

Sample & Sampling technique

Sample: In present study, the sample selected were the Primigravida women in selected maternity set up.

Sample size

Sample size is calculated on the basis of prevalence i.e 37%

$$n = t^2 \times \frac{P(1-P)}{m^2} = 290,$$

10 % drop out was considered and final sample size was 300.
t = Z value (1.96 for 95% Confidence level), P = % of picking a choice prevalence, M = CI Expressed on decimal (0.05)

Study population: Primigravida women attending ANC OPD

Sampling technique: Simple random sampling

Sampling process: For pre and post test sample size was 178 (study group) & 175 (control group), but while assessing outcome drop out cases were reported i.e 16 (study group) & 13 (control group), thus outcome was assessed for 162 (study group) & 162 (control group).

Inclusion criteria

- Registered Primigravida women
- Primigravida women accessible during the study
- Mothers Above 28 wks of pregnancy

Exclusion criteria

- Not Willing to Participate
- Mothers attending antenatal classes.

Tool preparation

The tool was developed by the researcher in context to the Primigravida women attending ANC OPD. a) Extensive review of literature, b) Consultation with experts

Description of tool

The tool consisted of four sections:

- Section I : Demographic Variables
- Section II : Self reported practices on BP
- Section III: Outcome of pregnancy

Technique

- Phase I: Consent, Interview, Socio Demographic data
- Phase II: Pre Test
- Phase III: Focus Group Teaching on BP
- Phase IV: Post test (After 15 to 30 days)
- Phase V: Assess outcome

Feasibility of the study

Tool was tested on 30 subjects, found eligible for the study and investigator found that the study is feasible in terms of time, money, ethics and availability of subjects.

Validity

To ensure the content validity of the prepared tool, it was validated by the tool validation committee of MGMIHS.

Reliability

Cronbach's alpha was used to calculate for knowledge questionnaire was 0.95 and as value was above 0.7the tool was considered reliable.

Pilot study

A pilot study was conducted from 05-10-2015 to 29-10-2015 with the purpose of testing the proficiency of the tool to be used for data collection, and to assess the feasibility of the study and to decide the statistical analysis and practicability of research.

Data collection method

Process of data collection

The data collection process began from 04-01-2016 to 07-05-2016. It was planned to select the subjects for study who attended ANC OPD. To select the sample needed for the study, the investigator approached the proper authorities for obtaining the necessary permission and cooperation. The nature of the study was briefly explained and it was ensured by the investigator that the normal routine of the hospital won't be disturbed. Then simple random sampling was used to assign subject in experimental and control group. Consent was taken before pre test & using interview technique questionnaire was filled followed by planned health teaching. Further date for follow up was asked and post test was taken approximately after 15 to 20 days. Data was recorded in the format developed for the purpose.

Analysis of the study is organized in the following manner:

Section 1: Analysis of Demographic variables

- **Section 1a:** Distribution of demographic variables in study and control group.
- **Section 1b:** Sources of information wise distribution in Study and control group

Section 2: Analysis of self reported Practices on preparation for delivery & obstetrical emergencies

- **Section 2a:** Item wise practice score on elements of birth preparedness in study and control group.

- **Section 2b:** Distribution of overall practice score on preparation for delivery & obstetrical emergencies in study & control group.
- **Section 2c:** Comparison of overall practice score on birth preparedness in study and control group.
- **Section 2d:** Comparison of overall knowledge and practice mean score in study & control group.
- **Section 2e:** Association of Practice Score with demographic variables among study & control group.

Section 3: Analysis of birth preparedness with outcome of pregnancy

- **Section 3a:** Distribution of labor preparedness with Outcome of pregnancy in Study and control group.
- **Section 3b**: Association between post test practice score and outcome of pregnancy in Study & control group

Section 4: Analysis of birth preparedness with mode of delivery

- **Section 4a**: Distribution of participants based on mode of delivery in study and control group.
- **Section 4b**: Comparison of mean practice score according to mode of delivery in study and control group

Section 5: Analysis of birth preparedness with maternal condition on delivery

- **Section 5a**: Distribution of participants based on maternal condition on delivery in study and control group
- **Section 5b**: Comparison of participants with maternal complication in study and control group.
- **Section 5c**: Comparison of mean practice score according to maternal complication in study and control group

Section 6: Analysis of labor preparedness with fetal condition on delivery

- **Section 6a**: Distribution of participants based on fetal condition on delivery study and control group
- **Section 6b**: Distribution of participants based on fetal findings at the time of delivery in Study and control group
- **Section 6c**: Comparison of mean practice score according to fetal complication in Study and control group

Section 1: Analysis of Demographic variables

The above table shows that majority of the participants in study (53.14 % & 42.85%) and control group (46.85% & 44%) are less than 25 yrs of age, (87%) in study group & (88%) in control group were found to be Hindu by religion, (49%) from study group and 104 (59%) from control group had completed secondary education, 167 (94%) from study group & 167 (95%) from control group were housewife, (47%) in study group and (45%) in control group were found with monthly income ranging between Rs 10,000 to 15,000/month & (57%) from study group and (55%) from control group had nuclear family.

Table No 1a: Distribution of demographic variables in study and control group

Parameters	Age (Yrs)	Study n=178)		Control (175)	
		f	%	f	%
Age	≤20	93	53.14	82	46.85
	21 – 25	75	42.85	77	44
	>25	10	5.71	16	9.14
Religion	Hindu	154	86.51	154	88
	Muslim	17	9.55	14	8
	Christian	7	4	7	4
Education	Illiterate	14	7.86	21	12
	Primary	2	1.14	1	1
	Secondary	87	48.87	104	59.42
	Higher secondary	53	29.77	32	18.28
	Graduate & PG	22	12.35	17	9.71
Occupation	Housewife	167	93.82	167	95.42
	Service	11	6.17	8	4.57
Family Income	6000 – 10000	68	41	72	45
	10001 – 15000	79	47	78	45
	>15000	31	12	25	10
Type of Family	Nuclear	102	57.30	96	54.85
	Joint	76	42.69	79	45.14

Table No 1.b: Sources of information wise distribution of participants in study and control group

Sources	Study (n=162) (%)		Control (n=162) (%)		Z Value	P Value
	f	%	f	%		
Print media	65	36.52	28	16	4.51	<0.0001
Electronic media	154	86.52	124	70.86	3.66	<0.005
Health worker	12	6.74	28	16	2.76	<0.01
Family	153	85.96	50	28.57	13.36	<0.0001
Friend	145	81.46	136	77.71	0.87	>0.05

Above table describes, majority of participants 154 (87%) from study group identified electronic media as their basic source of information for birth preparedness & (77.71%) from control group identified family as their source of information for birth preparedness.

Section 2: Analysis of self reported Practices on preparation for delivery & obstetrical emergencies

Above table illucates that, majority of participants were not practicing on preparation of delivery in study & control group before intervention, whereas after intervention increase in practice score in study group was seen but no change in control group practice score. Thus we reject Null hypothesis and accept research hypothesis.

Above table describes, practice score among study group in pre test was poor and it increased to good in post test, whereas Practice score among control group in pre test and post test was average.

In comparison of pre and post test practice score in Study and control group, shows a significant difference pre test, post test score between study and control group as $P<0.0001$. Thus we reject null hypothesis and accept research hypothesis.

Above table describes, association of Practice Score with demographic variables among study group shows association with education, type of family & occupation.

Table No 2a. Description of score based on item wise analysis of practices on preparation for delivery & obstetrical emergencies

S. No.	ITEMS	Q. NO	Pre test Practice score				Post test Practice score			
			Study (178)		Control (175)		Study (178)		Control (175)	
			Y	N	Y	N	Y	N	Y	N
1	Information on present pregnancy	1 & 2	53 (14.88%)	303 (85.11%)	486 (13.71%)	302 (86.28%)	352 (98.87%)	4 (1.19%)	48 (13.71%)	302 (86.28%)
2	Family Involvement	3	21 (11.77%)	157 6(88.20%)	20 (11.42%)	155 (88.57%)	178 (100%)	0	20 (11.42%)	155 (8.57%)
3	Learning about delivery	4 & 5	0	356 (100%)	1 (0.28%)	349 (99.71%)	356 (100%)	0	1 (0.29%)	349 (99.71%)
4	Awareness on Warning signs	6	0	178 (100%)	06	175 (100%)	178 (100%)	0	0	175 (100%)
5	Place for delivery/ Health Facility	7	1 (0.56%)	177 (99.43%)	0	175 (100%)	178 (100%)	0	0	175 (100%)
6	Financial Preparations	8	16 (8.98%)	162 (91.01%)	0	175 (100%)	178 (100%)	0	6 (3.43%)	169 (96.57%)
7	Transportation	9 & 10	33 (9.266%)	323 (90.73%)	0	350 (100%)	356 (100%)	0	15 (4.28%)	160 (45.71%)
8	Birth Companion	11	17 (9.55%)	161 (90.44%)	3 (1.71%)	172 (98.28%)	178 (100%)	0	0	175 (100%)
9	Blood donor	12	0	178 (100%)	0	175 (100%)	178 (100%)	0	0	175 (100%)
10	Articles for delivery	13 &14	32 (8.98%)	324 (91.02%)	0	350 (100%)	356 (100%)	0	0	175 (100%)

Table No 2b: Distribution of overall practice score on preparation for delivery & obstetrical emergencies in study & control group

Practice score	Study				Control			
	Pre test	(%)	Post test	(%)	Pre test	(%)	Post test	(%)
0 – 4 (Poor)	144	80.89	0	0	34	19.42	28	16
5 – 9 (Average)	17	9.55	0	0	130	74.28	136	77.71
10 – 14 (Good)	17	9.55	162	100	11	6.28	11	6.28
Total	178	100	178	100	175	100	175	100

Table No 2c: Comparison of overall practice score on birth preparedness in study and control group

Practice score	Study (n=15)			Control (n=15)			MW test Z Value	P Value
	Mean	Median	SD	Mean	Median	SD		
Pre test	4.89	2	2.309	5.07	5	2.115	7.64	<0.0001
Post test	13.98	2	.183	5.21	5	2.105	17.82	<0.0001

Table No 2dI: Association of practice score with demographic variables among study group

Predictor	Coefficient	SE coefficient	T	P Value
Constant	-0.949	1.062	-.894	.373
Age (Yrs)	-0.015	0.039	-.372	.710
Religion	0.095	0.225	.425	.671
Education	2.095	0.148	14.158	.000
Type of family	-0.683	0.232	-2.944	.004
Monthly income (Rs)	-0.0000003	0.000	-.078	.938
Occupation	1.773	0.582	3.047	.003

Table No 2d II: Association of practice Score with demographic variables among control group

The regression equation of pre test practice score on age, religion, education, monthly income, occupation in control group is

Predictor	Coefficient	SE coefficient	T	P Value
Constant	6.691	1.114	6.006	.000
Age (Yrs)	.029	.045	.640	.523
Religion	-1.693	.244	-6.934	.000
Education	1.687	.163	10.364	.000
Type of family	-.301	.235	-1.281	.202
Monthly income (Rs)	0.000063	.000	1.723	.087
Occupation	-4.252	.651	-6.529	.000

Above table describes, association of Practice Score with demographic variables among control group shows association with religion, education and occupation.

Section 3: Analysis of labor preparedness with outcome of pregnancy

Above table illustrates distribution of participants based on primary outcome in Study and control group Majority of participants in study group had planned for health facility (99.38%), transportation (93.83%) , birth companion (95%) and arranged for blood donor (91.97%) whereas only (20.37%) of participants identified danger signs and only (4.94%) sought care in obstetric emergency. In control group (38.27%) of participants had a birth companion during delivery, (45.06%) sought care in obstetric emergency, (12.96%) had planned transportation, (11.73%) planned health facility only (3.70%) identified warning signs and (3.09%) had arranged blood donor. On comparison of outcome in study and control group it showed highly significant difference on all elements of birth preparedness. Thus we reject null hypothesis and accept research hypothesis.

Table No 3a: Distribution of labor preparedness with outcome of pregnancy in study and control group

Primary outcome	Study (n=162)	(%)	Control (n=162)	(%)	Z Value	P Value
Identification of warning signs	33	20.37	6	3.70	4.77	<0.0001
Plan for health facility	161	99.38	19	11.7	33.69	<0.0001
Plan for transportation	152	93.83	21	12.96	24.91	<0.0001
Arrangement of blood donor	149	91.97	5	3.09	35.13	<0.0001
Birth companion	154	95.06	62	38.27	13.58	<0.0001
Care seeking in obstetric emergency	8	4.94	73	45.06	9.41	<0.0001

Table No 3bI: Association between post test practice score and outcome of pregnancy in study group

Primary outcome		Post test practice score		MW test Z Value	P Value
		Mean	SD		
Identification of danger signs	Identified (n=33)	13.91	0.384	2.81	0.005
	Not Identified (n=129)	14.00	0		
Plan for health facility	Planned (n=161)	13.98	0.176	0.11	0.91
	Not planned (n=1)	14	0		
Plan for transportation	Planned (n=152)	13.98	0.181	0.36	0.72
	Not planned (n=10)	14	0		
Arrangement of blood donor	Planned (n=149)	13.98	0.183	0.42	0.68
	Not planned (n=13)	14	0		
Birth companion	Planned t (n=154)	13.99	0.161	2.93	0.003
	Not planned (n=8)	13.88	0.354		
Care seeking in obstetric emergency	Seeked care (n=8)	13.88	0.354	2.93	0.003
	Did not Seeked care (n=154)	13.99	0.161		

Table No 3bII: Association between post test practice score and outcome of pregnancy in control group

Primary outcome		Post test practice score		MW test Z Value	P Value
		Mean	SD		
Identification of danger signs	Identified (n=6)	6.00	2.966	0.26	0.80
	Not Identified (n=156)	5.35	1.816		
Plan for health facility	Planned (n=19)	5.68	2.262	0.98	0.33
	Not planned (n=143)	5.33	1.807		
Plan for transportation	Planned (n=21)	5.57	2.158	0.54	0.59
	Not planned (n=141)	5.34	1.820		
Arrangement of blood donor	Planned (n=5)	6.40	3.130	1.24	0.22
	Not planned (n=157)	5.34	1.814		
Birth companion	Planned (n=62)	5.35	1.793	0.36	0.72
	Not planned (n=100)	5.38	1.911		
Care seeking in obstetric emergency	Seeked care (n=73)	5.27	1.750	0.82	0.41
	Did not Seeked care (n=89)	5.45	1.954		

Highly statistical significant association was found between post test practice score and outcome of pregnancy (primary) in study group i.e. identification of danger signs, birth companion & care seeking in obstetric emergency as P<0.005 and rest were not statistically significant as P>0.05. Thus we reject null hypothesis and accept research hypothesis.

No association was found between post test practice score and outcome of pregnancy in control group as P>0.05. Thus we accept null hypothesis and reject research hypothesis.

Section 4: Analysis on mode of delivery

Table No 4a: Distribution of participants based on mode of delivery in study and control group

Mode of delivery	Study	(%)	Control	(%)	Total
LSCS	47	29.01	67	41.35	114
Instrumental	5	3.08	5	3.08	10
Normal	110	67.90	90	55.55	200
Total	162	100	162	100	324

Chi-square = 5.51, P=0.064

In mode of delivery wise distribution of participants in Study and control group shows slight difference but not statistical significance (borderline).

Table No 4bI: Comparison of practice score according to mode of delivery in study group

Mode of delivery	N	Practice score			
		Pre test		Post test	
		Mean	SD	Mean	SD
LSCS	47	4.64	2.363	13.94	0.323
Instrumental	5	3.60	.894	14.00	0
Normal	110	4.46	1.890	14.00	0
F Value		0.62		2.25	
P Value		0.54		0.11	

In comparison of pre and post test practice score according to mode of delivery in Study group does not shows a significant difference as P>0.05.

Table No 4bII: Comparison of practice score according to mode of delivery in control group

Mode of delivery	N	Practice score			
		Pre test		Post test	
		Mean	SD	Mean	SD
LSCS	67	5.31	1.819	5.31	1.819
Instrumental	5	5	0	5	0
Normal	90	5.43	1.949	5.43	1.949
F Value		0.18		0.18	
P Value		0.83		0.83	

In Comparison of pre and post test practice score according to mode of delivery in control group does not show any significant difference as P>0.05.

Section 5: Analysis on maternal condition on delivery

Table No 5a. Distribution of participants based on mother condition on delivery in study and control group

Mother condition	Study	(%)	Control	(%)	Total
Complicated	65	40.12	95	58.64	160
Normal	97	59.87	67	41.35	164
Total	162	100	162	100	324

Chi-square = 11.11, P=0.001

The above table illustrates participants based on mother condition on delivery study and control group. Majority 59.87% of mother's condition was normal & 40.12% of mother's condition was complicated in study group, whereas 58.64% of mother's condition was complicated & 41.35% of mother's condition was normal in control group. And on comparison of mother's condition on delivery wise distribution of participants in Study and control group shows a significant difference as P<0.001.

Table No 5b: Comparison of participants with maternal complication in study and control group

Maternal complication	Study (n=162)	(%)	Control (n=162)	(%)	Z Value	P Value
PROM	16	11.11	21	12.96	0.54	>0.05
PIH	12	7.40	17	10.49	1.23	>0.05
Dec fetal movement	8	4.94	20	12.35	2.39	<0.05
Severe bleeding	4	2.47	8	4.94	1.18	>0.05
Labour >12Hrs	9	5.56	13	8.02	0.88	>0.05
High fever	1	0.62	0	0	1.003	>0.05
Post term	1	0.62	3	1.85	1.01	>0.05
Preterm labour	13	8.02	23	14.20	1.78	>0.05
MSL	2	1.23	0	0	1.42	>0.05
Uterine Inertia	4	2.47	5	3.09	0.34	>0.05

In comparison of maternal complication of participants in study and control group, found to be significant in complications like decreased fetal movement in study group as P<0.05 but not statistical significant and does not show any significance with other complications as P>0.05.

Table No 5cI: Comparison of practice score according to maternal complication in Study group

Practice score	Maternal complication				MW test Z Value	P Value
	Present (n=65)		Absent (n=97)			
	Mean	SD	Mean	SD		
Pre test	4.49	2.18	4.48	1.91	0.54	0.59
Post test	13.95	0.28	14	0	1.73	0.083

In Comparison of pre and post test Practice score according to maternal complication in Study group does not show any significant difference as P>0.05.

Table No 5cII: Comparison of practice score according to maternal complication in control group

Practice score	Maternal complication				MW test Z Value	P Value
	Present (n=65)		Absent (n=97)			
	Mean	SD	Mean	SD		
Pre test	5.36	1.827	5.39	1.922	0.23	0.82
Post test	5.36	1.827	5.39	1.922	0.23	0.82

In Comparison of pre and post test knowledge according to maternal complication in control group does not show any significant difference as P>0.05.

Section 6: Analysis on fetal condition on delivery

Table No 6a: Distribution of participants based on fetal condition on delivery study and control group

Baby condition	Study	(%)	Control	(%)	Total
Complicated	13	8.02	55	33.95	68
Death	0	0	6	3.70	6
Normal	149	91.97	101	62.34	250
Total	162	100	162	100	324

Chi-square = 41.16, P<0.0001

The above table illustrates, majority 91.97% of fetal condition was normal & 8% of fetal condition was complicated in study group, whereas 33.95% of fetal condition was complicated & 62.34% of fetal condition was normal in control group. And on comparison of fetal condition on delivery wise distribution of participants in study and control group shows a significant difference as P<0.0001.

Table No 6b: Distribution of participants based on fetal findings at the time of delivery in study and control group

Fetal complication	Study (n=162)	(%)	Control (n=162)	(%)	χ^2 Value	P Value
Low APGAR	7	4.32	36	22.22	4.92	<0.0001
Prematurity	6	3.70	17	10.49	2.40	<0.05
LBW	1	0.62	4	2.47	1.36	>0.05
IUGR	1	0.62	2	1.23	0.58	>0.05
Admission in NICU	8	4.94	50	30.86	6.47	<0.0001

The above table illustrates distribution of participants based on fetal findings at the time of delivery in study and control group. Low APGAR, Prematurity, NICU on delivery was statistically significantly in study group than control group. LBW, IUGR was not statistical significant in study group than control group.

Table No 6cI: Comparison of practice score according to fetal complication in study group

Practice score	Fetal complication				MW test Z Value	P Value
	Present (n=16)		Absent (n=146)			
	Mean	SD	Mean	SD		
Pre test	4.77	2.386	4.46	1.988	0.45	0.65
Post test	13.92	0.277	13.99	0.164	2.18	0.03

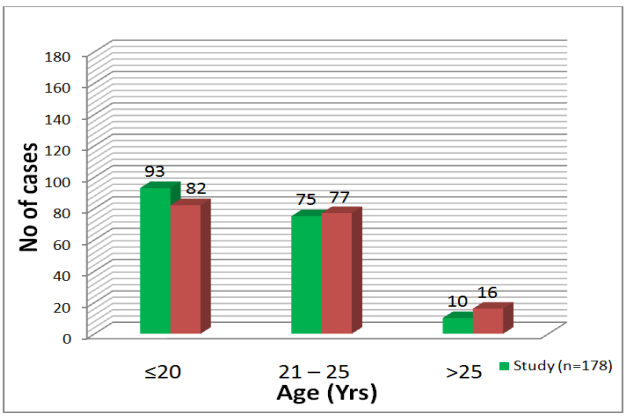
In Comparison of pre and post test practice score according to fetal complication in Study group shows a significant difference in post test as P<0.05 but no significant difference in pre test as P>0.05.

Table No 6cII: Comparison of practice score according to fetal complication in control group

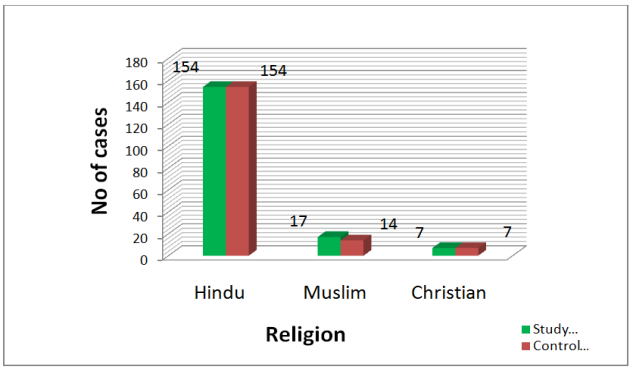
Practice score	Fetal complication *				MW test Z Value	P Value
	Present (n=55)		Absent (n=101)			
	Mean	SD	Mean	SD		
Pre test	5.11	1.397	5.55	2.100	1.42	0.16
Post test	5.11	1.397	5.55	2.100	1.42	0.16

*6 participants are deaths

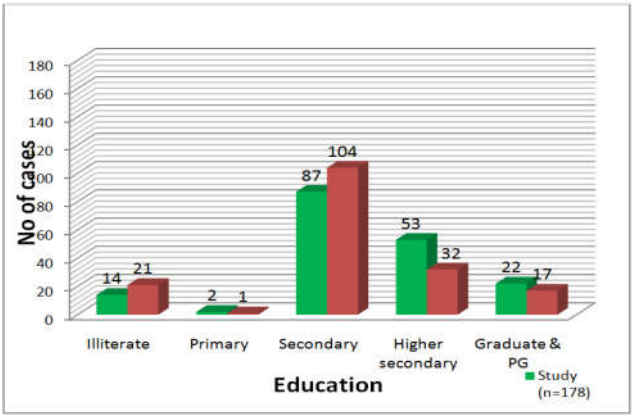
In Comparison of pre and post test practice score according to fetal complication in control group does not show any significant difference as P>0.05.



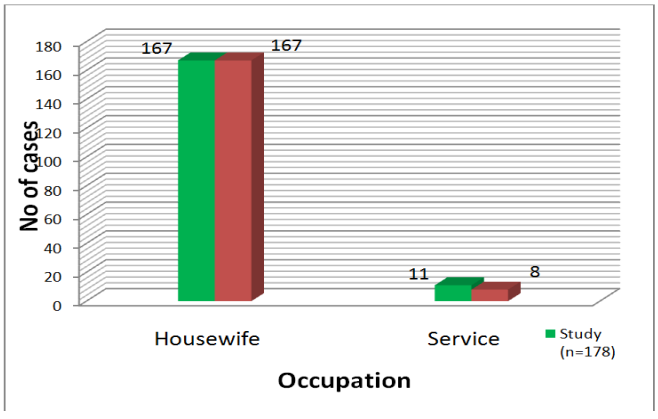
Graph No 1aI: Distribution of primigravida women as per age in study & control group



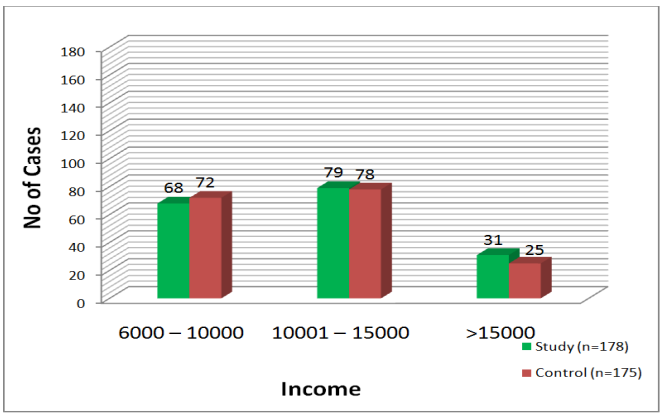
Graph No 1aII: Distribution of primigravida women as per religion in study & control group



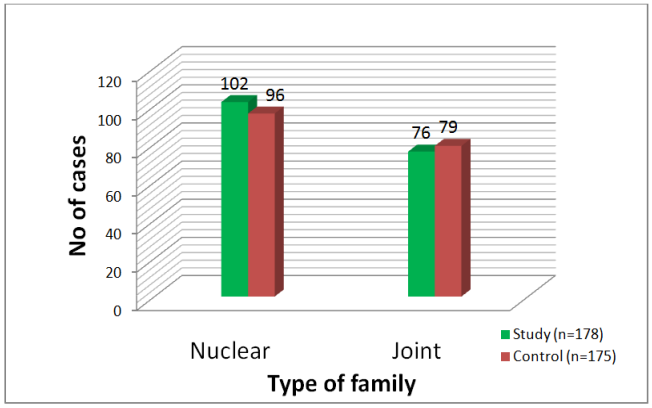
Graph No 1aIII: Distribution of primigravida women as per education in study & control group



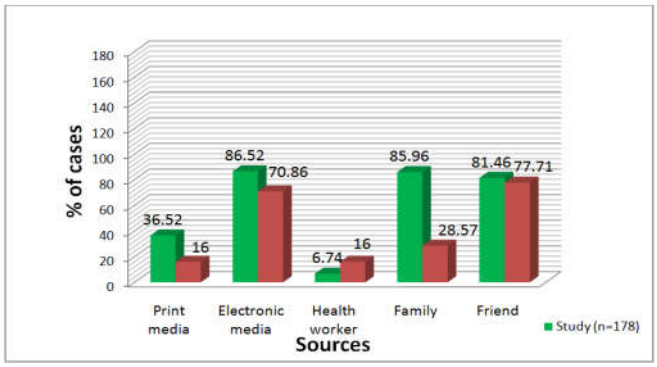
Graph No 1aIV: Distribution of primigravida women as per occupation in study & control group



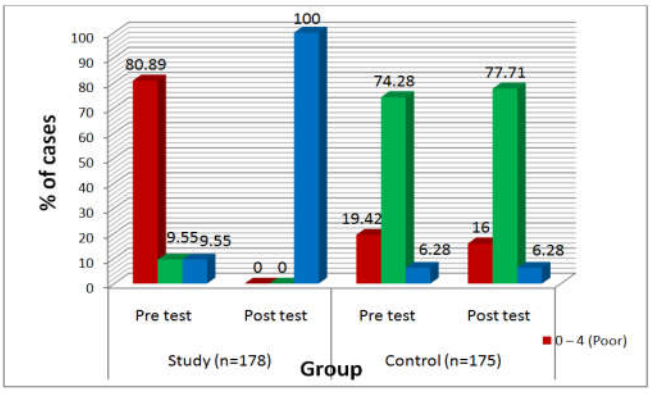
Graph No 1aV: Distribution of primigravida women as per income in study & control group



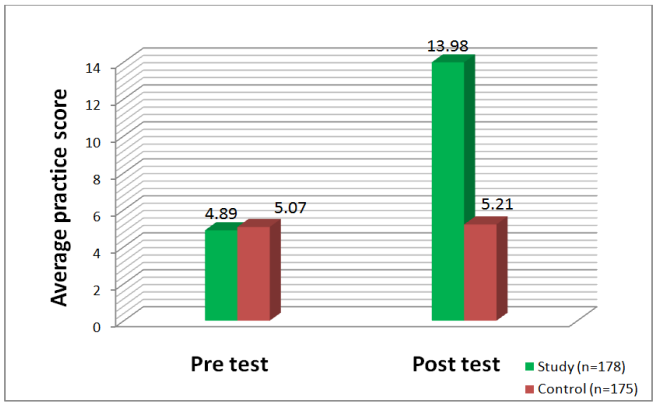
Graph No 1aVI: Distribution of primigravida women as per type of family in study & control group



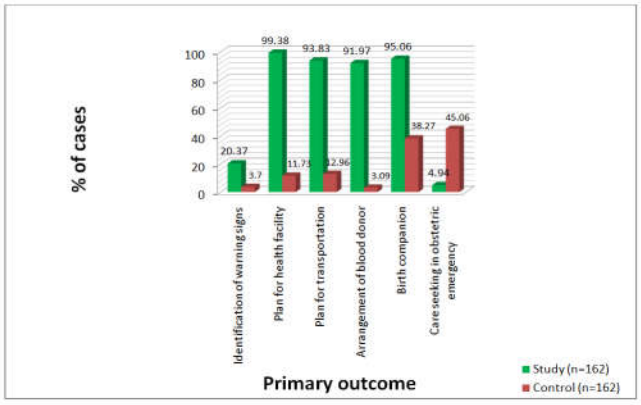
Graph No 1b: Distribution of primigravida women as per source of information in study & control group



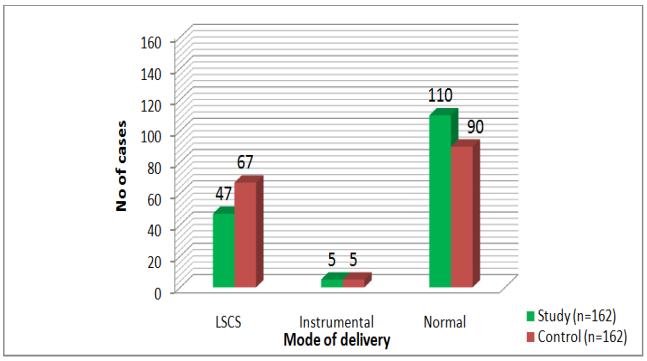
Graph No 2b: Percentage wise distribution of overall practice score on preparation for delivery & obstetrical emergencies in study & control group



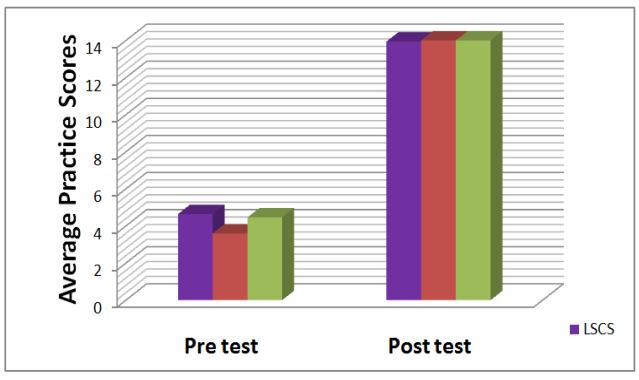
Graph No 2c: Comparison of overall practice score on birth preparedness in study and control group



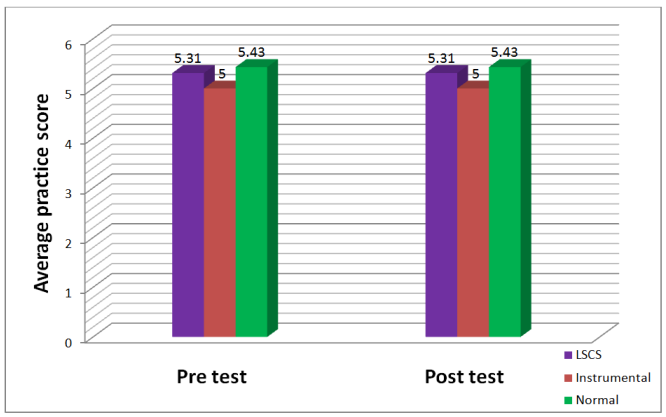
Graph No 3a: Distribution of Birth preparedness with outcome of pregnancy in study and control group



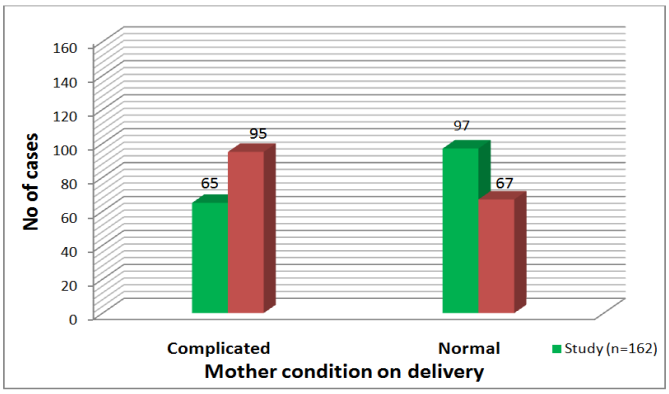
Graph No 4a: Distribution of participants based on mode of delivery in study and control group



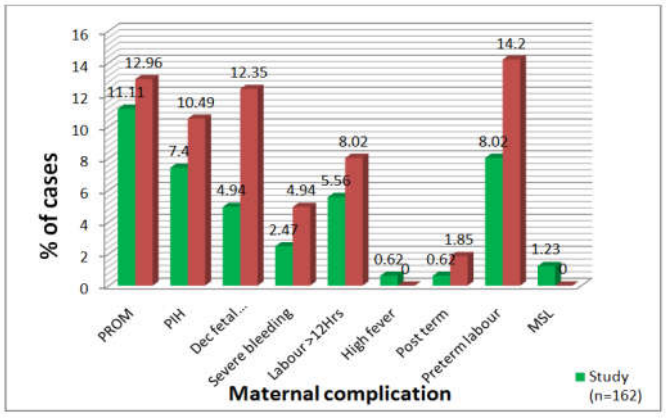
Graph No 4bI: Comparison of practice score according to mode of delivery in study group



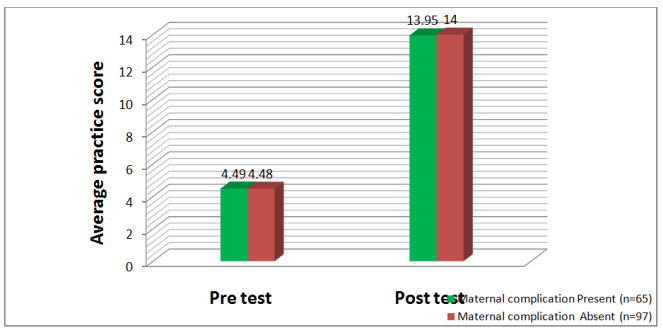
Graph No 4bII: Comparison of practice score according to mode of delivery in control group



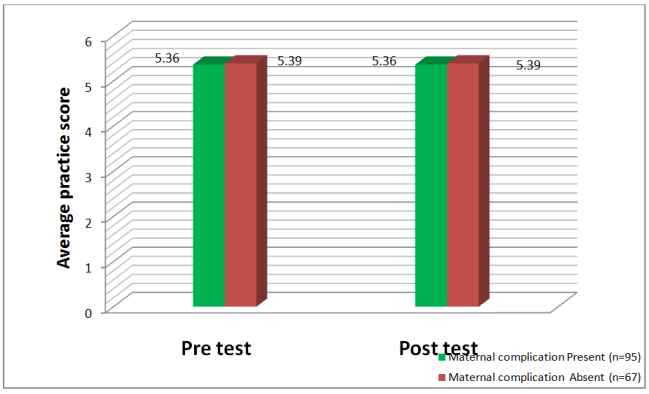
Graph No 5a: Distribution of participants based on mother condition on delivery in study and control group



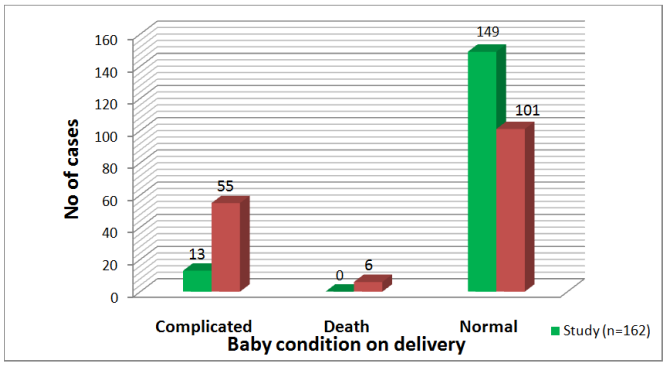
Graph No 5b: Comparison of participants with maternal complication in study and control group



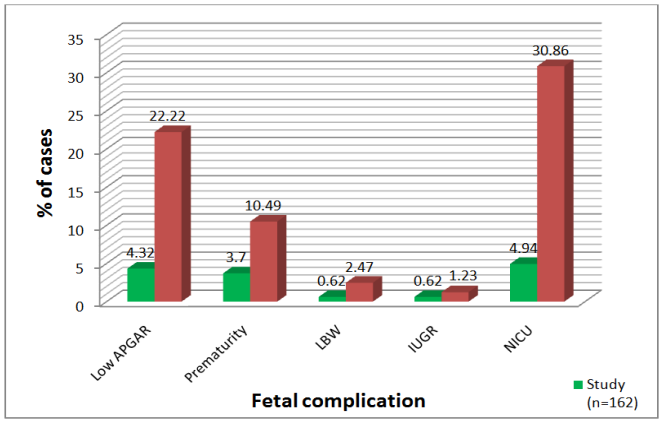
Graph No 5cI: Comparison of practice score according to maternal complication in Study group



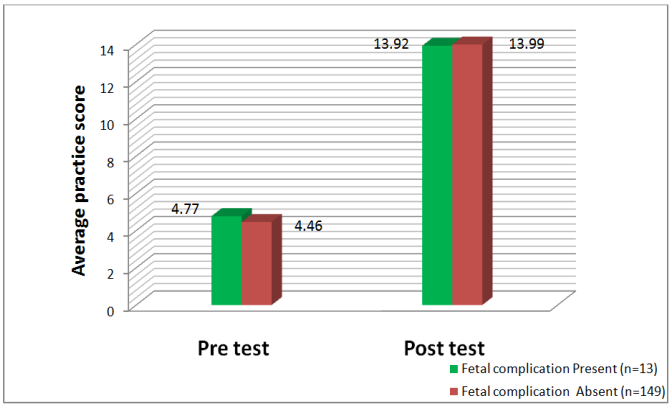
Graph No 5cII: Comparison of practice score according to maternal complication in control group



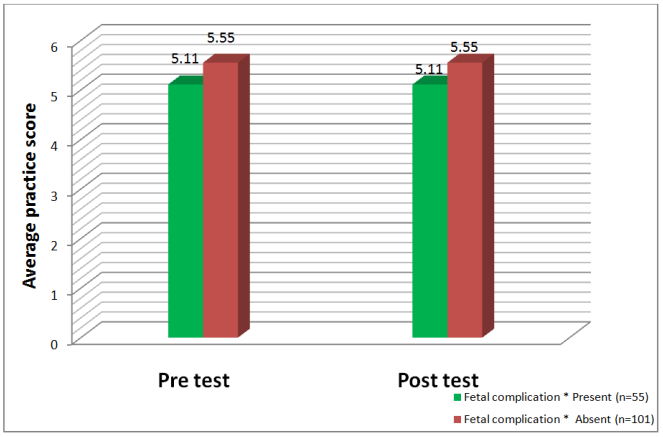
Graph No 6a: Distribution of participants based on fetal condition on delivery study and control group



Graph No 6b: Distribution of participants based on fetal findings at the time of delivery in study and control group



Graph No 6cI: Comparison of practice score according to fetal complication in study group



Graph No 6cII: Comparison of practice score according to fetal complication in control group

DISCUSSION

A Key strategy that can reduce the number of women dying from pregnancy & labor related complications is making a birth plan that constitutes birth preparedness measures for pregnant women and their families. Birth preparedness promotes active preparation and decision making for delivery by pregnant women and their families. Between 2016- 2030, as part of sustainable development goals, the target is to reduce the global maternal mortality ratio to less than 70 per 100000live births with 99% of these deaths occurring in developing countries every day in 2015, about 830 women died due to complications of pregnancy and childbirth.

Implications

The result of the study as several implications for the nursing personnel including midwifery practice, nursing education, nursing research & Nursing administration.

Nursing service & Midwifery practice

- Routine identification of pregnant women for knowledge regarding birth preparedness.
- Routine identification of level fear of childbirth among all pregnant women.
- To enhance the level of self efficacy and coping behaviours, a standard policy for educating on birth preparedness during their follow up should be instituted.
- Nurses should be trained before implementing these practices in order to understand how to provide education and support.
- Health education provided to the pregnant women should be more than information giving. It should be aimed at development of knowledge, practices, abilities, competencies and good attitude towards labor and delivery with ultimate goal being a successful and positive childbirth experience.
- Findings from this study regarding the knowledge and practice level of primigravida women provides nurses and health care providers a basis and an evidence based intervention that can be translated to prenatal care for pregnant women and lead to significant change in usual midwifery/antenatal care.

Nursing administration

- Nurse administrators can utilize the findings of this present study while formulating policies and rules, can prepare a birth preparedness card.
- Repeated educational intervention programme on birth preparedness should be initiated at OPD, PHC towards community participation so that it improves the preparedness status of these women.
- At facility level the administrators need to promote early detection and prevention of birth complications.
- Nurse administrators need to design & implement health promotion activities: awareness creation, health education and distribution of IEC materials and follow up at individual, family and community level. Strengthen the health education system, provide health education to pregnant women and community members.
- In-service education, refreshing courses, updating & empowering health care providers who are working in maternity units should be done periodically by the nurse administrators.
- Nurse administrators should encourage researchers to do more research at community & facility level further recommend and implement accordingly.

Nursing research

- This study open up an opportunity to further research for the researchers, policy makers and different partners to assess the knowledge & practices of birth preparedness, effect of health teaching on outcome of pregnancy among primigravida women, could be used as baseline for further studies.
- Further advance studies should compare knowledge attitude and practice of primi para women who attended child birth preparation classes and who do not.
- To determine whether teaching coping behaviours in child preparation classes translates into their use in labor and delivery outcome.
- Comparative researches can be done in government and private set up.
- researches can be done with a large sample size including family members.

Conclusion

Education has always played a vital role in behavioral change. Educational intervention programme was found to be effective as results of the study suggest there was significant increase in knowledge score among study group as compared to control group. On correlating birth preparedness with outcome of pregnancy showed a highly significant difference in practice score among study group as compared to control group. Association of demographic variables with birth preparedness showed significant association with education, type of family and occupation among study and control group.

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