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Effectiveness of Educational Intervention Programme regarding Knowledge on Birth preparedness among Primigravida wWomen

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ABSTRACT:

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. 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. 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. 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.

Aim of study was to assess effectiveness of educational programme regarding knowledge on birth preparedness. Study approach adopted for study was evaluative, study design was quasi experimental (pre test post test design). Study was conducted in selected urban health center with 320 primigravida women as sample. Simple random sampling was used to select the groups. Results suggested that majority of participants were not knowledgeable about all the elements of birth preparedness in study and control group before intervention, whereas the knowledge score have increased after intervention in study group and did not show any significant increase in the control group. Majority of participants ie 88% in study group used electronic media as their source of information & 80% of participants in control group had friend as their source of information. A significant difference on knowledge of warning signs was found between study and control group as $P<0.0001$ level of significance. Comparison of Birth Preparedness i.e post test knowledge scores with outcome of pregnancy illustrates significant difference in the post test knowledge scores with outcome of pregnancy in study and control group on elements of birth preparedness as $P<0.0001$ level of significance.

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 religion and monthly.

KEY WORDS: Educational intervention programme, knowledge, birth preparedness

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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. [1] 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[2]

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 [1] 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 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.

A cross-sectional study conducted by Pius Kaba Affipunguh, Alexander Suuk Laar, to assess knowledge and practice towards birth preparedness and complication readiness among women in northern Ghana results identified poor knowledge and practices of identification of a potential blood donor and skilled birth attendant preparation for birth preparedness and its complication in the study area**.** Antenatal care education should place emphasis on birth preparedness and complication readiness to improve access to skilled and emergency obstetric care.[3]

A survey was conducted by Envuladu E.A and Zoakah A.I , to assess birth and emergency preparedness level of pregnant women attending antenatal care in a primary health care centre in jos, plateau state, Nigeria. The finding s of this study suggests, that a large proportion of the pregnant women did not prepare for childbirth and emergencies especially the prior arrangement for transportation and blood donation.[4]

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

MATERIALS & METHODS:

Study approach was evaluative, design was quasi experimental, setting was Selected Urban Health Center. The population of the present study comprises of Primigravida Women above 28 weeks of pregnancy. Sample Size calculated was 320 (160 study group & 160 control group)

Simple random sampling was adopted. For pre and post test sample size was 160 (study group) & 160 (control group), but while assessing outcome drop out cases were reported i.e 14 (study group) & 12 (control group), thus

The tool consisted of four sections: Section I : Demographic Variables, Section II : Knowledge on BP , Section III: Outcome of pregnancy. Data collection**:** 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

Section 1: Analysis of Demographic Variables

Table No 1a: Distribution of demographic variables.

Parameters		Study (n=160)		Control (160)	
		f	%	f	%
Age	≤20	85	53	78	49
	21 – 25	67	42	67	42
	>25	8	5	15	9
Religion	Hindu	138	86	141	88
	Muslim	17	11	13	8
	Christian	5	3	6	4
Education	Illiterate	12	8	21	13
	Primary	2	1	1	1
	Secondary	80	50	93	58
	Higher secondary	46	29	30	19
	Graduate & PG	20	13	15	9
Occupation	Housewife	150	94	154	96
	Service	10	6	6	4
Family Income	6000 – 10000	59	37	71	44
	10001 – 15000	74	46	67	42
	>15000	27	17	22	14
Type of Family	Nuclear	90	56	87	54
	Joint	70	44	73	46

Above table displays analysis of demographic variables among which majority ie 53% participants in study group & 49% participants in control group were less than 20 yrs of age, 86% participants in study group and 88 % participants in control group were found to be Hindu by religion, 50% of participants in study group & 58% of participants in control group had completed secondary education, 94% of participants in study group & 96% of participants in control group were housewife, 46% of participant in study group were found with monthly income ranging between 10,000 to 15,000 Rs/- whereas 44% of participants in control group were found with monthly income ranging between 6,000 to 10,000 Rs/- & 56% of participants in study group & 54% of participants in control group belonged to nuclear family.

Table No 1.b: Sources of information wise distribution of participants

Sources	Study (n=160)	(%)	Control (n=160)	(%)
Print media	62	39	24	15
Electronic media	141	88	107	67
Health worker	11	7	27	17
Family	136	85	36	23
Friend	128	80	128	80

Above table discloses information on use of various sources for gaining knowledge on birth preparedness, majority of participants ie 88% in study group used electronic media as their source of information & 80% of participants in control group had friend as their source of information.

Section 2: Analysis of Knowledge on various elements Birth preparedness

Table No 2a: Distribution of knowledge score based on item wise analysis on elements of birth preparedness before and after intervention.

Parameters	Answers	Study (n=160)				Control (n=160)			
		Concept (5 Items) (2720)	Warning Signs (4 items) (2560)	Related to Labor (11 Items) (7040)	Family Planning (2 items) (1280)	Concept (5 Items) (2720)	Warning Signs (4 items) (2560)	Related to Labor (11 Items) (7040)	Family Planning (2 items) (1280)
Pre test	Yes	348 (13%)	60 (2%)	82 (1 %)	18 (1%)	392 (14%)	125 (5%)	131 (2%)	30 (2%)
	No/Don't Know	2372 (87%)	2500 (98%)	6958 (99%)	1262 (99%)	2328 (86%)	2435 (95%)	6909 (98%)	1250 (98%)
Post test	Yes	1718 (63%)	1527 (60%)	3001 (43%)	463 (36%)	443 (16.28%)	124 (5%)	152 (2%)	31 (2%)
	No/Don't Know	1002 (37%)	1033 (40%)	4039 (57%)	817 (64%)	2277 (84%)	2436 (95%)	6888 (98%)	1249 (98%)

Above table describes score based on item wise analysis of knowledge on birth preparedness, majority of participants were not knowledgeable on birth preparedness in study & control group before intervention, whereas after intervention increase in knowledge score in study group was seen but no change in control group knowledge score.

Table No 2b: Distribution of overall knowledge score on birth preparedness.

Knowledge score	Study				Control			
	Pre test	(%)	Post test	(%)	Pre test	(%)	Post test	(%)
0 – 28 (Poor)	160	100	3	2	160	100	160	100
29 – 57 (Average)	0		157	98	0		0	
58 – 85 (Good)	0		0		0		0	
Total	160	100	160	100	160	100	175	100

Above table interprets poor knowledge score in pre test among study & control group, which increased to average in post test among study group & remained same i.e. poor in control group.

Table No 2c: Comparison of overall knowledge score on birth preparedness.

Knowledge score		Study (n=160)		Control (n=160)			MW test Z Value	P Value
	Mean	Median	SD	Mean	Median	SD		
Pre test	3.76	3	2.509	4.37	2	3.655	1.34	0.18
Post test	39.87	41	4.563	4.38	2	3.657	15.65	<0.0001
Wilcoxn Z value	11			0.23				
P Value	<0.0001			0.82				

Above table illustrates, no significant difference in pretest knowledge score among study and control group but shows a significant difference in the post test knowledge score between study and control group as P<0.0001. On comparison of pre test scores with post test scores in study group shows a significant difference & no significance difference on comparison of pre test scores with post test scores in control group.

Table No 2d: Distribution of participants on knowledge of warning signs after intervention.

Warning signs	Study (n=160)	(%)	Control (n=160)	(%)	Z Value	P Value
Bleeding	121	76	0	0	22.28	<0.0001
Decrease fetal movement	146	91	2	1	37.49	<0.0001
Early contraction	26	16	3	2	4.63	<0.0001
PV leak	26	16	4	3	4.34	<0.0001
Face, hand, leg edema	55	34	0	0	9.15	<0.0001
Fever	65	40	0	0	10.46	<0.0001
Trauma abdomen	105	65	0	0	17.48	<0.0001

Above table displays information on knowledge of warning signs after intervention in study and control group, out of seven warning signs 91% had identified decreased fetal movements in study group and only 3% identified PV leak. A significant difference on knowledge of warning signs was found between study and control group as P<0.0001 level of significance.

Table No 2e: Multiple responses on knowledge of Warning sign.

Multiple responses of Warning signs	Study (n=160)	(%)	Control (n=160)	(%)
1	0	0	7	4
2	0	0	1	1
3	24	15	0	0
4	85	53	0	0
5	32	20	0	0
6	5	2	0	0

Above table illustrates, majority i.e. 53%of participants in study group identified four warning signs, whereas 4% of participant identified only one warning sign in control group.

The regression equation of pre test knowledge score on age, religion, education, monthly income, occupation isPre_KS_1 = 2.082 + 0.068 age (Yrs)–0.127 Religion + 0.246 Education + 0.704 Type of family +0.0000 Monthly income (Rs)–3.602 Occupation.

Table No 2f. Association of Knowledge Score with demographic variables.

Predictor	Coefficient	SE coefficient	T	P Value
Constant	2.082	1.693	1.230	0.220
Age (Yrs)	0.068	0.065	1.054	0.293
Religion	-0.127	0.380	-0.335	0.738
Education	0.246	0.137	1.797	0.073
Type of family	0.704	0.360	1.952	0.052
Monthly income (Rs)	0.00022	0.000057	3.781	<0.0001
Occupation	-3.602	0.961	-3.749	<0.0001

Above table explains association of knowledge score with demographic variables which **shows association with monthly income & occupation.**

Section 3: Analysis of Birth preparedness with outcome of pregnancy

Table No 3a: Distribution of Birth preparedness with outcome of pregnancy.

Outcome of pregnancy	Study (n=146)	(%)	Control (n=148)	(%)	Z Value	P Value
Identification of warning signs	31	21	6	4	19.72	<0.0001
Plan for health facility	145	99	18	12	225.98	<0.0001
Plan for transportation	136	93	21	14	184.15	<0.0001
Arrangement of blood donor	134	92	3	2	237.93	<0.0001
Birth companion	138	95	58	39	101.26	<0.0001
Care seeking in obstetric emergency	8	5	67	45	61.24	<0.0001

Above table elucidate, majority of participants in study group i.e. 99% had planned for health facility, 95% had planned for birth companion, 93% had planned for transportation, 92% had arranged for blood donor. Whereas in control group 45% sought care in obstetric emergency, 39% had planned for birth companion. On comparison of outcome in study and control group it **showed significant difference** at P<0.0001 level of significance on all elements of birth preparedness.

Table No 3b: Comparison of Birth Preparedness i.e post test knowledge scores with outcome of pregnancy.

Knowledge score on	Study		Control		MW test Z Value	P Value
	Mean	SD	Mean	SD		
Identification of danger signs	39.03	5.788	7.00	5.762	**3.91**	**<0.0001**
Plan for health facility	39.84	4.553	5.22	4.710	**6.99**	**<0.0001**
Plan for transportation	40.04	4.283	4.81	4.501	**7.45**	**<0.0001**
Arrangement of blood donor	40.04	3.933	6.00	4.583	**3.01**	**0.003**
Birth companion	39.81	4.638	5.26	3.923	**11.11**	**<0.0001**
Care seeking in obstetric emergency	40.75	2.435	4.01	3.087	**4.94**	**<0.0001**

Above table illustrates, **significant difference** in the post test knowledge scores with outcome of pregnancy in study and control group on elements of birth preparedness as P<0.0001 level of significance.

Section 4: Incidental Findings

Table No 4a:Distribution of participants based on mode of delivery.

Mode of delivery	Study (n=146)	(%)	Control (n=148)	(%)	Total
LSCS	45	31	61	41	106
Instrumental	4	3	4	3	8
Normal	97	66	83	56	180

Chi-square = 3.49, P=0.17

Above table interprets distribution of participants based on mode of delivery in study and control group, shows no statistical significant difference.

Table No 4b: Distribution of participants based on mother condition on delivery.

Mother condition	Study (n=146)	(%)	Control (n=148)	(%)	Total
Complicated	62	42	85	57	160
Normal	84	58	63	43	164

Chi-square = 6.59, P=0.01

The above table illustrates participants based on mother condition on delivery study and control group. Majority i.e. 58% of mother's condition was normal & 62% of mother's condition was complicated in study group, whereas 57% of mother's condition was complicated & 43% 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<0.01**.

Table No 4c: Comparison of participants with maternal complication.

Maternal complication	Study (n=146)	(%)	Control (n=148)	(%)	Z Value	P Value
PIH	9	6	15	10	1.25	0.21
Decreased Fetal Movement	7	5	18	12	2.29	0.022
High Fever	1	0.6	0	0	1.003	0.31
PROM	16	11	18	12	0.32	0.75
Preterm Labor	13	9	23	15	1.74	0.08
Labor >12hrs	12	8	14	9	0.37	0.71
Severe Bleeding	2	1	7	4	1.69	0.09
Post term	3	2	2	1	0.46	0.64

Above table illustrates comparison of participants with maternal complication in study and control group, among which significance is found with decreased fetal movement as maternal complication and does not show any significant difference with other maternal complications as $p<0.05$.

Table No 4d: Distribution of participants based on fetal condition on delivery.

Baby condition	Study (n=146)	(%)	Control (n=148)	(%)	Total
Complicated	13	9	48	33	61
Death	0	0	5	3	5
Normal	133	91	95	64	294

Chi-square = 31.40, P<0.0001

The above table illustrates, majority 91% of fetal condition was normal & 9% of fetal condition was complicated in study group, whereas 33% of fetal condition was complicated & 64% 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 4e: Comparison of participants based on fetal complications at the time of delivery.

Fetal complication	Study (n=162)	(%)	Control (n=162)	(%)	χ^2 Value	P Value
Low APGAR	6	4	25	17	12.73	<0.0001
Prematurity	6	4	16	11	4.77	0.029
LBW	1	1	4	3	FET	0.37
IUGR	1	1	2	1	FET	1
Admission in NICU	8	5	45	30	30.90	<0.0001

The above table illustrates comparison of participants based on fetal findings at the time of delivery in study and control group, low APGAR & admissions in NICU on delivery was statistically significantly in study group than control group as P <0.0001.

DISCUSSION:

Between 2016- 2030, as part of sustainable development goals, the target is to reduce the global maternal mortality ratio to less than 70 per 100000 live 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. 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. Lot of review mentioned above has proved through experience of mother with regards to childbirth is not good specially in primigravida mothers as there is lot of fear related to childbirth, lack of information, lack of awareness regarding birthing process. If these pregnant women are educated on elements of birth preparedness which will enhance a woman's knowledge but also will have the potential to help decrease infant mortality and morbidity.

IMPLICATIONS:

Those who are responsible to improve on birth preparedness; pregnant mothers, family, health care providers, health facility, other partners, program level managers and policy makers should take their responsibility and work together to improve the knowledge & practices on birth preparedness. Health care providers should be trained on effective health education and counselling skills in order to be able to impart knowledge & practices to the clients on birth preparedness. Health education on different aspects of birth preparedness should be provided to all in the community, so that they will serve to further counsel pregnant women and support fully those of them who opt for being birth prepared and emergency ready.

CONCLUSION:

Birth Preparedness is the process of planning for normal birth and anticipating the actions needed in case of an emergency. In many societies in the world, cultural beliefs, and lack of awareness inhibit preparation in advance for delivery and expected baby. The majority of pregnant women and their families do not know how to recognize the danger signs of complications. When complications occur, the unprepared family wastes a great deal of time in recognizing the problem, getting organized, getting money, finding transport, and reaching the appropriate referral facility. Thus having knowledge and putting it into practice is need of the day.

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.

Repeated structured teaching programs may be initiated at the community towards community participation so that birth preparedness status improves for these women. This will be a positive step toward achieving the millennium development goal 5 of safe motherhood and reduction in maternal mortality.

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