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Research Article

EFFECTIVENESS OF A VIDEO ASSISTED CHILD BIRTH EDUCATION PROGRAMME ON KNOWLEDGE, INTRA-PARTUM BEHAVIOUR, MATERNAL AND FOETAL OUTCOME AMONG PRIMIGRAVIDA MOTHERS

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ABSTRACT

Introduction: Experience of child birth is always linked with the emotional feelings and expectations. Inappropriate mental and physical preparation of the pregnant woman regarding the birthing process can leave her in a state of anxiety, dilemma and fear of the unknown.

Objectives: The study was conducted to assess the effectiveness of video assisted child birth education programme on knowledge, intra-partum behaviour, maternal and foetal outcome among primigravida mothers and associate the findings with demographic variables.

Material and methods: In order to achieve the desired objectives of the study quantitative research approach with quasi experimental non equivalent pretest, posttest control group design was adopted for the present study. Using non-probability purposive sampling 350 primigravida women who completed 32 weeks of gestation were enrolled for the study and distributed in two groups (175 each in control and experimental group). Data collection was accomplished by using tool comprised of structured knowledge questionnaire regarding labour process and childbirth preparedness, intra-partum behavioural observation checklist (IPBOC), record analysis proforma for maternal and foetal outcome. Data was analyzed by using descriptive and inferential statistics.

Results: Almost half the population in both the group had not heard about childbirth education before i.e. 51.4% and 50.9% in experimental and control group respectively. Initially (in pretest) the experimental and control group didn't differ in terms of their knowledge level. ($t'_{(348)}=0.4$, $p>0.05$). The Video Assisted Child Birth Education Program significantly improved the knowledge of the primigravida mothers regarding labor process and child birth preparedness in all the areas except for breast feeding in experimental group. The average change (7.3) in knowledge score in experimental group was significantly higher than the average change (0.4) in control group ($t_{(348)}=111.6$, $p<0.05$). The compliance to the intra-partum behavior was much higher among experimental group mothers than the control group ($z_{(348)}=12.7$, $p<0.05$). The proportion of primigravida mothers in experimental group had significantly less maternal complications as compared to that of control group. [$z'_{(348)}=2.95$, $p<0.05$]. The proportion of newborns cried immediately after birth in experimental is significantly more as compared to that of control group. [$z'(df348)=6.6$, $p<0.05$]. Age, education, occupation, monthly family income and previous information regarding birth preparedness information were found to have significant association with knowledge of primigravida mothers.

Conclusion: Video Assisted Child Birth Education Programme was found to be effective in significantly improving the knowledge regarding labour and childbirth, intra partum behaviour among primigravida mothers at the time of reporting to the labour room for delivery and in all the four stages of labour thus improving the labour outcome.

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INTRODUCTION

Nothing brings more joy to a family than the birth of a child. The new parents, grandparents, aunts and uncles are all filled with joy and excitement at the thought of welcoming the newest member of their family to the world. The first little smile, the first tears shed, and the first baby's laugh will surely

capture the hearts of each family member and create the most beautiful and unforgettable memories for the baby's parents. Childbirth is not without its challenges, but it is surely one of life's most rewarding events.¹

Child birth is a normal physiological process, yet it is a life changing experience for the woman becoming pregnant for the first time. Experience of child birth is always linked with the

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emotional feelings and expectations. Inappropriate mental and physical preparation of the pregnant woman regarding the birthing process can leave her in a state of anxiety, dilemma and fear of the unknown. Gaining confidence by enhancing knowledge about childbirth can be considered as an important factor influencing a pregnant women’s birthing experience.^{2,3,4} Childbirth causes physical and mental changes to pregnant women. A woman's experience of birth is vitally important, and her birth memories endure. Four factors are particularly important in determining a woman's childbirth experience: personal expectations, the amount of support she receives, the quality of the caregiver-patient relationship, and her involvement in decision making. Positive perception of childbirth experience can decrease anxiety and depression in first –time mothers. Women have always prepared for the birth of their babies. Mothers from all cultures traditionally passed their knowledge about labour and birth to their daughters. These cultural and family rituals guided women through pregnancy, labour, birth, and the early days of mothering. Much of women's wisdom about birth was lost when birth moved from home to hospital. Mothers, sisters, and other women knowledgeable about birth no longer attended the woman.

Birth became a medical event and cultural and family rituals took a back seat, eventually all but disappearing.^{5,6}

Objectives of the Study

1. To assess the knowledge of primigravida mothers in control and experimental group regarding labour and child birth before administration of the video assisted child birth education programme.
2. To assess the knowledge of primigravida mothers regarding labour and child birth after administration of the video assisted child birth education programme in experimental group
3. To compare the level of knowledge of primigravida mother regarding labour and child birth before and after administration of the video assisted child birth education programme
4. Observe and compare the intra-partum behaviour of the primigravida mother in experimental and control group.
5. Observe the maternal and foetal outcome in both the group and compare the findings.
6. To associate the findings with selected demographic variables.

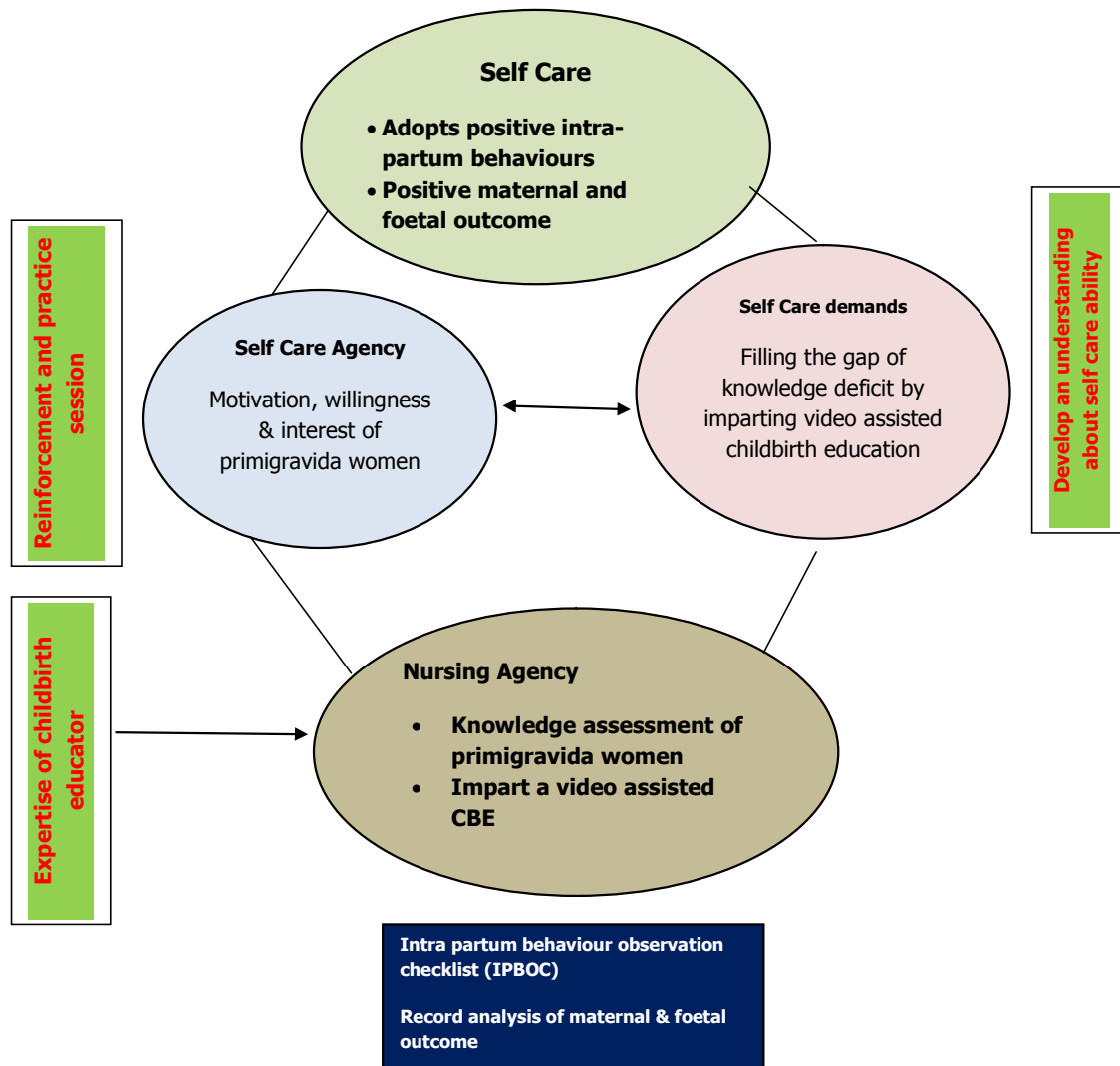


Figure 1 Conceptual Framework: Conceptual framework of the study based on Orem’s self care deficit theory (supportive educative)

MATERIALS AND METHODS

Hypotheses

- H₁- There is a significant difference in knowledge among primigravida mothers of experimental group after the administration of video assisted childbirth education programme at 0.05 level of significance.
- H₂- There is a significant difference in the intra-partum behaviours among primigravida mothers of experimental group after the administration of video assisted childbirth education programme at 0.05 level of significance.
- H₃- There is a significant difference in the maternal and foetal outcome among primigravida mothers of experimental group after the administration of video assisted childbirth education programme at 0.05 level of significance.
- H₀- There is no significant difference in knowledge, intra-partum behaviour, maternal and fetal outcome among primigravida mothers of experimental group after the administration of video assisted childbirth education programme at 0.05 level of significance.

METHODOLOGY

In order to achieve the desired objectives of the study quantitative research approach with quasi experimental non equivalent pretest, posttest control group design was adopted for the present study. Using non-probability purposive sampling 350 primigravida women who completed 32 weeks of gestation were enrolled for the study and distributed in two groups (175 each in control and experimental group). After obtaining administrative approval and written consent from the participants, tool was administered for data collection. Data collection was accomplished by using tool comprised of structured knowledge questionnaire regarding labour process and childbirth preparedness, intra-partum behavioural observation checklist (IPBOC), record analysis proforma for maternal and foetal outcome. Pretest knowledge was assessed on the 1st day of contact with both groups of samples before administration of the Video Assisted Child Birth Education Programme to the experimental group. Post test knowledge was assessed on 7th day. Knowledge was measured by structured knowledge questionnaire which has total 25 questions. Intra-partum behavior was observed for experimental and control group mothers when they underwent the labour process. The maternal and fetal outcome was assessed after the delivery through record analysis. Data was analyzed by using descriptive and inferential statistics.

them had completed 35 weeks, 24% of them had completed 34 weeks completed period of present pregnancy

- 26.9% of the primigravida mothers in control group had completed 36 weeks of pregnancy, 24% of them had completed 35 weeks, and 23.5% of them had completed 34 weeks.
- Majority of the samples in experimental and control group were between 22 – 25 years i.e. 61.7% and 58.9 % respectively.
- Maximum of the samples (70.9%) of both the group belongs to joint family.
- 51.4% of the samples in experimental group and 50.3% of the samples in control group were educated up to primary level.
- Majority of the samples in experimental in control group were house wives i.e. 71.4% and 70.9% respectively.
- The monthly family income were ranges from 5,001 – 10,001/- in 44.6% of the samples in experimental group and in 43.4 % of the samples in control group.
- Almost half the population in both the group had not heard about childbirth education before i.e. 51.4% and 50.9% in experimental and control group respectively.
- Family members were the main source of information for those who had heard about childbirth education before. It is 28% in experimental group and 29.1% in control group.

Findings related to the knowledge score of primigravida mothers in control and experimental group regarding labor and child birth preparedness before and after administration of the Video Assisted Child Birth Education Programme.

The maximum possible score in the structured knowledge questionnaire was 25. The data presented in Table- 1 shows that the mean PRETEST knowledge scores of the control group was 8.4 and in experimental group it was 8.3 with the range of (0 – 18) in both. The finding also shows that the standard deviation of pretest knowledge scores was 3.6 in experimental group and 3.7 in control group. The data further shows that the median and mode of the pretest knowledge scores were 8 & 7 in both experimental and control group.

The data presented in Table- 1 shows that the mean POSTTEST knowledge scores of experimental group was 15.6 with the range of (4 – 23) and the mean POSTTEST knowledge scores of control group was 8.8 with the range of (0 – 18). The finding also shows that the standard deviation of posttest knowledge scores was 4.1 in experimental group and 3.5 in

Table 1 Mean, Median, Mode, SD and Range of score of the PRETEST and POSTTEST knowledge score among the primigravida mothers in control and experimental group regarding labor process and child birth preparedness N=350

Group	Mean		Median		Mode		SD		Range of score	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Control group (n=175)	8.4	8.8	8	8	7	6	3.7	3.5	0 – 18	0 – 18
Experimental group (n=175)	8.3	15.6	8	16	7	19	3.6	4.1	0 – 18	4 – 23

The maximum possible score = 25

RESULTS

Findings regarding sample characteristics

- 26.9% of the primigravida mothers in experimental group had completed 36 weeks of pregnancy, 23.4% of

control group. The data further shows that the median and mode of the posttest knowledge scores were 16 and 19 in experimental group and in case of control group it was 8 & 6 respectively.

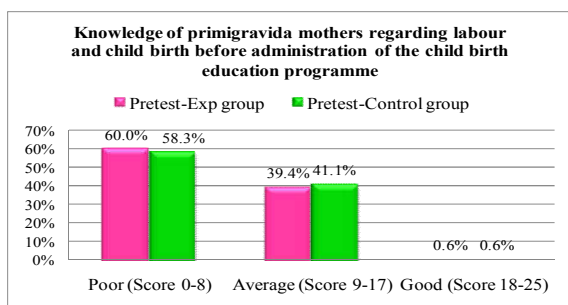


Figure 2 Bar diagram showing the percentage distribution of the primigravida mothers according to their PRETEST level of knowledge regarding labour and childbirth in both the groups.

The data in Figure 2 represents the percentage distribution of the primigravida mothers according to their pretest knowledge level regarding labour and childbirth preparedness. It shows that maximum of the mothers in both the group (i.e. 60% in experimental group and 58.3% in control group) were possessing poor knowledge in pretest.

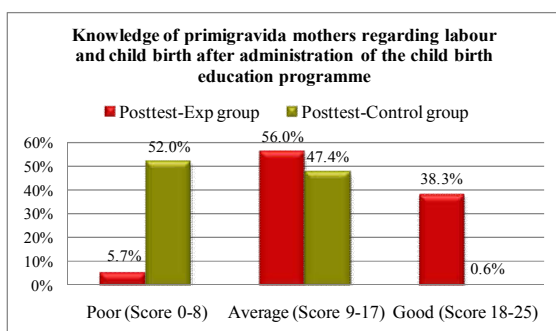


Figure 3 Bar diagram showing the percentage distribution of the primigravida mothers according to their POST TEST level of knowledge regarding labour and childbirth in both the groups.

The data presented in Figure 3 depicts that among the experimental group primigravida mothers 56% possessed average knowledge and 38.3% of them possessed good knowledge in posttest. Whereas, in control group majority of the primigravida mothers (52%) possessed poor knowledge regarding labour and childbirth preparedness in posttest.

Findings related to comparison of the level of knowledge of primigravida mothers between control and experimental group regarding labor and child birth preparedness before and after administration of the video assisted child birth education program

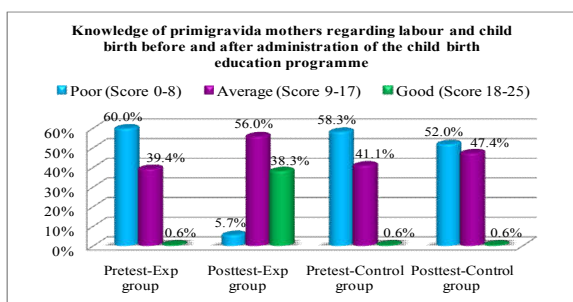


Figure 4 Cylinder diagram showing the percentage distribution of the primigravida mothers according to their knowledge level in PRETEST & POSTTEST for both the groups.

The data presented in Figure 4 shows that 60% of the primigravida mothers had poor knowledge during pretest which

reduced to only 5.7% during posttest. The data also shows that only 0.6% of the primigravida mothers in experimental group had excellent knowledge during pretest which increased to 38.3% during posttest. The data further shows that maximum of the mothers in control group had poor knowledge in both pre and posttest i.e. 58.3% and 52% respectively. This shows that there is remarkable improvement in the knowledge of primigravida mothers of experimental group after administration of the video assisted child birth education program.

- The mean pretest knowledge score in experimental and control group was 8.3 & 8.4 respectively. But the mean posttest knowledge scores of experimental group 15.6 was quite higher than the mean posttest knowledge scores (8.8) of control group.
- Initially (in pretest) the experimental and control group didn't differ in terms of their knowledge level as evident from 't' value of 0.4 for df 348 with a p-value of 0.358 (>0.05) at 0.05 level of significance.

Table 2 Mean, Standard Deviation, Mean Difference and "t" value of Pretest and Posttest knowledge Scores of primigravida Mothers in Experimental group
N=175.

Test	Mean	SD	Md	T	df	p-value
Pretest	8.3	3.6				
Posttest	15.6	4.1	7.3	34.2*	174	0.000

* Significant at 0.05 level of significance.
Df (174) 't' = 2.00 at 0.05 level of significance.

The data depicted in Table 2 represents paired t-test applied by the researcher for comparison of knowledge scores of experimental group primigravida mothers in pretest and posttest. The average knowledge score in pretest was 8.3 which increased to 15.6 in posttest. The obtained mean difference 7.3 was found to be statistically significant as evident from 't' value of 34.2 for df 174 at 0.05 level of significance. Corresponding p-value was 0.000 which is small (less than 0.05). This shows that the obtained mean difference was a true difference and not by chance. Therefore the researcher rejected the null hypothesis H_0 and accepted the research hypothesis H_1 . This result indicated that the video assisted Child Birth Education Program significantly improved the knowledge of the primigravida mothers in experimental group regarding labor and child birth

- The Video Assisted Child Birth Education Program significantly improved the knowledge of the primigravida mothers regarding labor and child birth preparedness in all the areas except for breast feeding in experimental group as evident by the 't' value of 1.7 (Pregnancy and birth), 16.2 (Events during child birth process), 10.4 (Time and place for delivery), 4.5 (Signs of labor), 22.4 (Investigations), 10.6 (Responsibilities during labor), 12.6 (Comfort measures during labor), 17.8 (Episiotomy), 10.8 (Child birth preparedness), 19.5 (Mother and baby craft items), and 23.5 (Diet after delivery) with 174 degrees of freedom at 0.05 level of significance.
- The average change (7.3) in knowledge score in experimental group was significantly higher than the average change (0.4) in control group as evidenced by 'z'

value of 111.6 for 348 degrees of freedom at 0.05 level of significance.

- The change in area wise knowledge scores of primigravida mothers in experimental group was significantly higher than the control group as evident by 'z'-values of 17.1 (Events during child birth process), 11.2 (Signs of labor), 15.1 (Investigations), 12.4 (Responsibilities during labor), 5.8 (Comfort measures during labor), 13.6 (Episiotomy), 2.0 (Child birth preparedness), 14.4 (Mother and baby craft items), and 12.6 (Diet after delivery), with 348 degrees of freedom at 0.05 level of significance.

Findings related to the comparison of expected behavioral changes of the primigravida mothers in control and experimental group at the time of reporting to the labour room.

- Almost all of the primigravida mothers (98.9%) shows excellent change in behavior (Score 31-40) while reporting for delivery to the labour room whereas in control group only 23.4% of them had excellent behavioral changes.
- The mean behavioural change score (38.2) of experimental group was statistically significantly higher than the mean behavioural change score (26.4) of control group as evident by 'Z' value of 63 with 348 degrees of freedom at 0.05 level of significance.
- The expected behavioral changes in experimental group were significantly better than those for control group for aspects like 'Reports to labour room on recognition of signs of true labour', 'Reports to labour room with cut nails and no nail polish', 'Reports to labour room with no jewellerys', 'Reports to labour room without having full meals', 'Reports to labour room after having a good Body bath and some hot drink', 'Brings extra set of dress for self and baby' and 'Possesses toiletries and antiseptic for the period of ward stay' since the calculated p-values were <0.05 for all the above said items.

Findings related to the comparison of intra-partum behavior of the primigravida mothers in control and experimental group in all the stages of labour.

- More than half (52%) of the primigravida mothers in experimental group had excellent coping (Score 106-140), 47.4% of them had good coping (score 71-105) and only 0.6% of them had average coping (score 36-70) for intra-partum behaviors. None of the mothers in experimental group have shown poor intra-partum behaviors.
- Majority (97.7%) of primigravida mothers in control group had good coping (Score 71-105) and 2.3% of them had average coping (score 11-20) for intra-partum behaviors. None of the mothers in control group have shown excellent intra-partum behaviors.

Table 3 Mean, SD and 'z' value intra-partum behavior of the primigravida mothers in experimental and control group N=350.

Group	Mean	SD	Z	p-value
Experimental group (n=175)	98.0	15.4	12.7*	0.000
Control Group (n=175)	79.8	3.9		

* Significant at 0.05 level of significance.
Df (348) 't' = 2.00 at 0.05 level of significance.

The data presented in Table-3 depicts the results of two sample z-test applied by the researcher for comparison of intra-partum behavior among primigravida mothers in experimental and control group. Average intra-partum behavior score of experimental group was 98 which was 79.8 for control group. Z-value for this comparison was 12.7 with 348 degrees of freedom. It was found to be statistically significant as the corresponding p-value was 0.000, which was small (less than 0.05). Hence the researcher rejected the null hypothesis H₀. Therefore it can be said that Video Assisted Child birth education program was helpful in improving the intra-partum behavior of the primigravida mothers in experimental group significantly.

The experimental group primigravida mothers shown significantly better intra-partum behaviour in all the four stages of labour than the control group as evident by 'Z' value of 17.2, 42.6, 190.5 and 150.6 respectively in first, second, third and fourth stage of labour with 348 degrees of freedom at 0.05 level of significance.

Findings related to comparison of maternal outcome in experimental and control groups

- More than half (52.6%) of the primigravida mothers in experimental group and 58.9% of primigravida mothers in control group had spontaneous progress of labour
- Majority of the samples i.e 80.6% in experimental group had NOT used any pain relieving drugs.
- Maximum of the samples had undergone vaginal delivery in both the group i.e. 94.3% & 77.1% respectively in experimental and control group.
- Majority of the samples (76.6%) in experimental group had normal vaginal delivery with episiotomy without laceration and tear where only 36.6% of the samples in control group had undergone the same.
- Total duration of labour was less than 8 hours for almost half the samples (51.4%) in experimental group but only 20.6% of the samples in control group had less than 8 hours of total duration of labour.
- Placenta was spontaneously expelled in case of 86.3% samples in experimental group and 66.3% samples in control group
- Majority of the samples i.e. 94.3% of samples in experimental group and 84.6% of samples in control group did not develop any maternal complications after the delivery.
- The proportion of primigravida mothers taking pain relieving drug in experimental group was significantly less as compared to that of control group ['z'(df348)=4.491, p<0.05]
- The proportion of vaginal delivery in experimental group was significantly higher than that of the control group ['z'(df348)=4.58, p<0.05]
- Total duration of labour in control group was significantly higher ['z'(df348)=16.9, p<0.05] than that of the experimental group primigravida mothers.
- The proportion of primigravida mothers in experimental group had significantly less maternal complications as compared to that of control group. ['z'(df348)=2.95, p<0.05]

Findings related to comparison of fetal outcome in experimental and control groups

Table 4 Comparison of the fetal outcome criteria among the primigravida mothers in experimental and control group by frequency and percentage

N=350

Sl. No	Foetal outcome	Experimental		Control	
		Freq	%	Freq	%
1.	Alive	175	100.0%	175	100.0%
2.	Yes	155	88.6%	100	57.1%
	No	20	11.4%	75	42.9%
3.	0 to 3	10	5.7%	7	4.0%
	4 to 6	56	32.0%	68	38.9%
	7 to 10	109	62.3%	100	57.1%
4.	4 to 6	10	5.7%	7	4.0%
	7 to 10	165	94.3%	168	96.0%
5.	No	175	100.0%	175	100.0%
	Yes	0	0.0%	7	4.0%
	No	175	100.0%	168	96.0%
	No	175	100.0%	175	100.0%

- All of the newborns were alive in both groups.
- Majority of the newborn (88.6%) in experimental group, & 57.1% of the newborn in control group cried immediately after birth.
- Majority (62.3%) of the newborn in experimental group, had APGAR score of 7 to 10 at 1 minute after birth.
- 94.3% of newborn had APGAR score of 7 to 10 at 5 minutes after birth. In control group too, majority (96%) of newborn had APGAR score of 7 to 10 at 5 minutes after birth.
- None of the newborn from experimental or control group had caput succedaneum and cephal hematoma.
- None of the newborn from experimental group had minor scalp injury and in control group, a very few (4%) of newborn had minor scalp injury.
- None of the newborn from experimental or control group had any other injuries.
- The proportion of newborns cried immediately after birth in experimental is significantly more as compared to that of control group. [$z'(df348)=6.6, p<0.05$]

Findings related to association of the findings with selected demographic variables

- Age, education, occupation, monthly family income and previous information regarding birth preparedness information were found to have significant association with knowledge of primigravida mothers.
- Type of family and previous information about birth preparedness were found to have a significant association with Expected behavioral changes of primigravida mothers.
- There is a significant association between previous information about birth preparedness and intra-partum behaviors of the primigravida mother.

Findings of the presence study indicated that the mothers who were exposed to Video Assisted Child Birth education Programme had significantly more knowledge regarding labour process and childbirth preparedness than the mothers who were not exposed to the Video Assisted Child Birth Education Programme. A supportive study conducted by [Malata, Ellen Chirwa \(2011\)⁷](#) on Assessment of the effectiveness of childbirth education in Malawi where sequential quasi-experimental design was used for a total 210 samples. Findings shows that for the intervention group there were significant differences ($P<0.05$) in the mean pre-test and post-test scores across the three domains. The results show that the childbirth education programme imparted knowledge to the intervention group who received more effective childbirth education and they were content with that.

Findings of the presence study indicated that the mothers who were exposed to Video Assisted Child Birth education Programme had significantly more knowledge regarding labour process and childbirth preparedness than the mothers who were not exposed to the Video Assisted Child Birth Education Programme

The study findings were supported by [Hauck Y, Mc Caul K \(2007\)⁹](#) who conducted a study to develop and evaluate a childbirth educational programme for Malawian women. Mixed method approach was used for this three-phase study. Participants were pregnant women who attended antenatal clinics. Changes in childbirth knowledge were determined over a 6-week period. For the intervention group an overall significant increase in knowledge across all time periods was demonstrated ($P < 0.01$). The study concluded by mentioning that a childbirth education programme was associated with important increases in maternal knowledge about antenatal, labour and birth and

postnatal topics. The findings have implications for midwives in other developing countries and offer an example of a midwifery-led initiative to provide formal childbirth education to vulnerable women.

The findings of the present study also revealed that there was a significant compliance to the expectant intra-partum behaviour of the primigravida mother at the time of reporting to the labour room for delivery as well as throughout the process of labour.

A supportive study by Fabian HM, and Radestad IJ (2011)¹⁰ to investigate first time mothers' views about child birth and parenthood education, in Sweden. The study revealed that child birth education helped 74% of first time mothers to prepare for child birth process. The first time mothers felt more relaxed which help them to cope easily with the process of labour.

The findings of the present study also revealed that there was a significant compliance to the expectant intra-partum behaviour of the primigravida mother at the time of reporting to the labour room for delivery as well as throughout the process of labour.

A Cochrane Database Systematic Review by Gagnon AJ (2007)⁸ with the objective to assess the effects of childbirth education on knowledge acquisition, anxiety, sense of control, pain, support, breastfeeding, infant care abilities, and psychological and social adjustment. The findings reported that individualized prenatal education is directed toward avoidance of a Cesarean birth and increase the rate of vaginal birth. The effects of general antenatal education for childbirth and/or parenthood remain helpful to ease the process of labour.

CONCLUSION

Structured video assisted childbirth education programme prepare the primigravida mother well for childbirth. It also can help them to feel relaxed during the whole process of labour, thus having a favourable impact on the mothers and the newborn. The information provided also reduces women's fear of unknown and they are able to participate positively in the process of labour, therefore improves the labour outcome.

Recommendations

On the basis of the findings, the following recommendations are offered for future nursing practice and research.

1. Study can be conducted to assess mother's attitude towards attending childbirth education programme.
2. A study may be conducted on the attitude of the hospital personal to the policy of administration of childbirth education programme in their own setting.
3. A comparative study can be done to study the effectiveness of structured childbirth education programme among primi and multigravida.
4. A study may be conducted to assess the variables associated with intra-partum coping of first time mothers.
5. A longitudinal research may be conducted to establish association of childbirth education on knowledge, attitudes and practice of first time mothers.

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Ethical Consideration

All administrative permission from hospitals was taken. Informed written consent was taken from participants before data collection. All the data were kept confidential and used for re-search purpose only.

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