

A Study to Assess the Effectiveness of Video - Assisted Planned Teaching Programme on Antenatal Exercises among Antenatal mothers in Maternity and Child Welfare Hospital (M&CWH) in Dhirenpara, Guwahati, Assam

Snigdha Das

M. Sc Nursing (Obs. & Gynecological Nursing), Sr. Nursing Superintendent /Central Hospital/Maligaon, India

Abstract: A video - assisted planned teaching programme on Antenatal exercises was conducted among Antenatal mothers in Maternity and Child welfare Hospital (M&CWH) in Dhirenpara, Guwahati. An Evaluative approach and Pre - experimental one group pre test - post test design was used. 50 antenatal mothers attending antenatal clinics in Dhirenpara Maternity and Child Welfare Hospital were selected through Convenient sampling technique. Tool consisted of Demographic data of antenatal mothers, Structured questionnaire, Lesson plan and Video on Antenatal exercises. Pre test and Video - assisted Planned teaching programme was administered by the investigator on the same day and post test was administered after seven days. Data were collected and analyzed by using descriptive and inferential statistics. Study findings reveal that in Pre test, majority of mothers 36 (72%) has moderately adequate knowledge and 5 (10%) has adequate knowledge. The antenatal mothers 50 (100%) after post test had scored 17 - 25 showing adequate knowledge regarding antenatal exercises indicating the effectiveness of the Video - assisted structured teaching program. There was no significant association between Pre test knowledge and any of the demographic variables at $p < 0.05$. Conclusion: This study highlights the need for measures in order to improve the knowledge and practice of the antenatal mothers regarding antenatal exercises. The video - assisted planned teaching programme is an effective method which brings awareness among the mothers to improve knowledge and practice regarding antenatal exercises and gives further insights into the existing problems which will enlighten to understand the problems and find a distinct way out.

Keywords: Assess, knowledge, effectiveness, antenatal exercises, video - assisted planned teaching programme, and antenatal mothers

1. Introduction

“Birthing is a painful process
The body is designed for it,

We’ll make it a comfortable as possible - Morrison Susan Jane

1.1 Background of the Study

One of the greatest event in every woman’s life is to become a mother. Antenatal period is the period during pregnancy. Antenatal care refers to care given to a pregnant woman from the time when conception is confirmed until the beginning of labor. The midwife should provide a woman - centered approach to the care of the woman and her family by sharing information with the woman to help her make informed choices about her care. Systematic examination and advices of a woman during pregnancy is called Antenatal care. The supervision should be regular and periodic in nature according to the need of the individual.¹ Exercises done before delivery are called Antenatal exercises. Systematic exercises help the pregnant woman adapt to the physical changes in her body during pregnancy and tone up the muscles that will be stretched or stressed during delivery. Antenatal exercises help to improve the muscle tone which is stretched during pregnancy and labour. It builds valuable strength. Specific exercises and postures can help her to adapt to the physical changes in her body

during the child bearing year. But because of inadequate knowledge of mothers regarding Antenatal exercises, they develop complications during their delivery and the postpartum period which lead to increase maternal mortality and morbidity rate. Antenatal exercise is an important aspect of Antenatal care which needs to be assessed among the mothers so that the health personnel can conduct health awareness programme on Antenatal exercises. The recommended antenatal exercise includes: abdominal breathing or abdominal tightening exercises, kegel’s or pelvic floor exercise, foot & leg exercise, breathing exercise, posture for relief & pain during pregnancy.²

Aim of exercise is to achieve a beneficial level of fitness and health, both physically and mentally. It is important exercising during pregnancy and following delivery. They help to improve the muscle tone of the abdomen and pelvic floor and also bladder and bowel function, preventing edema, minimizing the risk of deep venous thrombosis, contraction and relaxation of the pelvic floor, providing oxygen to both the mother and the fetus, diminishing respiratory and vascular complications, minimizing future post partum complications e. g. ante version of the uterus, drainage of the Lochia, future prolapse and stress incontinence, prevent back ache and genital prolapse, help in losing extra body weight in obese person and getting fit and healthy, concentrate on proper postures, body alignments while lifting things and keep abdominal muscles toned. Many women experience some leaking of urine (stress

incontinence), postpartum depression, uterine prolapse, in the weeks following their baby's birth.³

1.2 Need for the study

Backache is a common problem (50%) in pregnancy. Physiological changes that contribute to backache are: joint ligament laxity, weight gain, hyperlordosis, and anterior tilt of the pelvis. Martins RF, Silva JL found that almost 80% of the pregnant women reported back pain at some time during pregnancy.⁴ The American College of Obstetrics and Gynecologists (ACOG) recommends most women exercise throughout their pregnancy. Women who continue exercising regularly through the end of their pregnancies (three times a week for at least 20 minutes) demonstrated the following reduced risks during the birth process - 35% decrease in the need for pain relief, 75% decrease in the incidence of maternal exhaustion, 50% decrease in the need to artificially rupture membranes, 50% decrease in the need to induce or augment labour with Pitocin, 50% decrease in the need to intervene because of abnormalities in the fetal heart rate, 55% decrease in the need for episiotomy, 75% decrease in the need for operative intervention (forceps or caesarean section), The exercising women delivered, on average, 5 - 7 days earlier than active women who did not exercise regularly.⁵

According to WHO, physical activity play a vital role in the prevention of cardiovascular disease, stroke, type II diabetes, colon and breast cancer and depression (2009).

Recent study published in Pub med showed that exercises provides benefits for preventing weight gain, obesity, & favoring Gestational Diabetes Mellitus without leading to harm or risks for the fetus and also have positive effect on fetal growth and fetal adaptation. Good posturing, massaging, foot & leg exercises may be effective & reduce Varicose veins, Leg cramps in the legs in pregnancy. Prenatal exercises also help to prevent complications such as pre - eclampsia, constipation and fatigue.²

According to the Sample Registration System (SRS 2012, published in 2013) used by Registrar General of India, the infant mortality and maternal mortality rates, respectively, are 42 per 1000 live births and 178 per 100, 000 live births. Assam is the state with highest MMR (328) and lowest with Kerala (66). The prevalence of low birth weight and prematurity among infants, amounting to 42.9 and 34.3%, respectively, is also a major concern and this has been associated with more than 90% of total neonatal deaths.⁶

Preeclampsia affects 2–8% of pregnancies worldwide. Hypertensive disorder of pregnancy (which include pre - eclampsia) is one of the most common cause of death due to pregnancy. They resulted in 29, 000 deaths in 2013 – down from 37, 000 deaths in 1990. Preeclampsia usually occurs after 32 weeks; however, if it occurs earlier it is associated with worse outcomes.⁷

During the clinical posting in the Antenatal OPD and Antenatal ward, the investigator have seen that during their antenatal period, several mothers were suffering from the minor ailments i. e., Backache, Leg cramps, Edema, Weight

gain etc. and have lack of knowledge about antenatal exercises. So, the investigator felt the need to take up a study on video - assisted planned teaching programme on antenatal exercises among the antenatal mothers which would help them to practice.

1.3 Objectives

The objectives of the study were

- To assess the existing knowledge regarding Antenatal exercises among antenatal mothers,
- To assess the effectiveness of video - assisted planned teaching program on Antenatal exercises
- To find the association between pre - test level of knowledge on Planned teaching programme on Antenatal exercises and selected variables.

1.4 Research Methodology

- **Research Approach:** Evaluative approach to assess the knowledge of antenatal mothers regarding antenatal exercises
- **Research Design:** Pre experimental (One group pre test and post test design)
- **Setting:** Maternity and Child Welfare Hospital, Dhirenpara, Guwahati, Assam
- **Target Population:** 50 antenatal mothers attending antenatal clinics in Dhirenpara M&CWH
- **Sample Size:** 50 antenatal mothers
- **Sampling Technique:** Convenience sampling method
- **Independent Variable:** Video - assisted Planned teaching programme regarding Antenatal exercises
- **Dependent Variable:** Knowledge of Antenatal mothers
- **Demographic variable:** Personal characteristics like age, religion, educational status, occupation, type of family, income of family, parity and source of information.

Inclusion criteria

- Antenatal mothers selected in the Maternity and Child Welfare Hospital, Dhirenpara in Guwahati, Assam.
- All Antenatal mothers who were available during the period of data collection.
- Antenatal mothers who were willing to give consent.

Exclusion criteria

- Antenatal mothers not willing to participate in the study.

Development of the tool: The tool was developed under the following four headings:

Part I –Structured interview schedule of selected socio - demographic profile of the antenatal mothers which includes 8 demographic variables like age, religion, educational status, occupation, type of family, income of family, parity & source of information regarding antenatal exercises.

Part II - Structured knowledge questionnaire on antenatal exercises (25 MCQs). For correct answer score one, for wrong zero was give. The maximum score of the knowledge questionnaire was 25.

Part III - Planned Teaching Programme in Antenatal exercises including a Lesson Plan, with general and specific objectives, contents based on Antenatal exercises and its importance etc. AV Aids like Charts, Handouts, Flash cards, Demonstration were used

Part IV—A 10 min Video on antenatal exercises was made by the investigator in local language (Assamese) keeping in mind their better understanding & effective teaching.

Criterion measurement: Knowledge gain.

Adequate = 17 - 25,

Moderately adequate = 9 - 16,

Inadequate = up to 8

Reliability of the tool:

The reliability (r) of the tool was established by using data collected from Antenatal mothers +and was established by Split half method, which measures the coefficient of internal consistency. The Spearman Brown coefficient is 0.90 indicating that the tool is highly reliable.

2. Analysis and Interpretation of Data

Analysis of the study findings were categorized organized and presented under the following headings:

Section I: Socio - demographic profile of antenatal mothers.

Section II: Distribution of knowledge scores of antenatal mothers regarding antenatal exercises.

Section III: Findings related to effectiveness of Video - assisted planned teaching programme on Knowledge on antenatal exercises among antenatal mothers.

Section IV: Findings related to association of pre test knowledge scores with selected socio - demographic variables.

Section I: Distribution of antenatal mothers according to selected variables like age, religion, parity, educational status, occupation, type of family, income of family and source of information regarding antenatal exercises.

The data were obtained from the antenatal mothers by Part I - Socio - demographic Performa of the tool and were tabulated in the master sheet.

Table 1.1: Distribution of antenatal mothers according to age, n=50

Age	Frequency (f)	Percentage (%)
Less than 19 years	9	18
19 - 29 years	35	70
29 years and above	6	12
Total	50	100

Table 1.1 shows that majority of Antenatal mothers i. e., 35 (70%) out of 50 mothers belongs to the age group of 19 - 29 years followed by less than 19 years 9 (18%) & only 6 (12%) were 29 years and above.

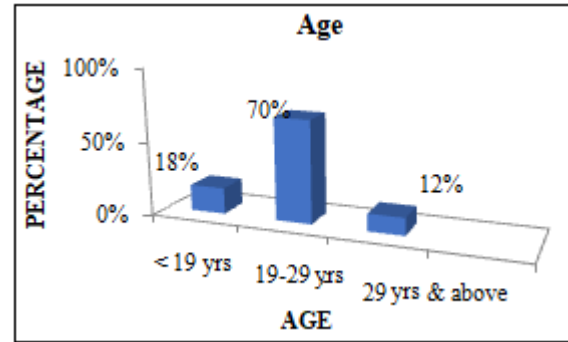


Figure 1.1: Bar diagram showing age distribution of antenatal mothers

Table 1.2: Distribution of antenatal mothers according to religion, n=50

Religion	Frequency (f)	Percentage (%)
Hindu	38	76
Muslim	11	22
Any Other	1	2
Total	50	100

Table 1.2 shows that in relation to religion, out of 50 antenatal mothers, majority of the Antenatal mothers 38 (76%) belongs to Hindu and 11 (22%) belongs to Muslim and 1 (2%) belongs to any other group of religion. None of the study participants belongs to Christian religion.

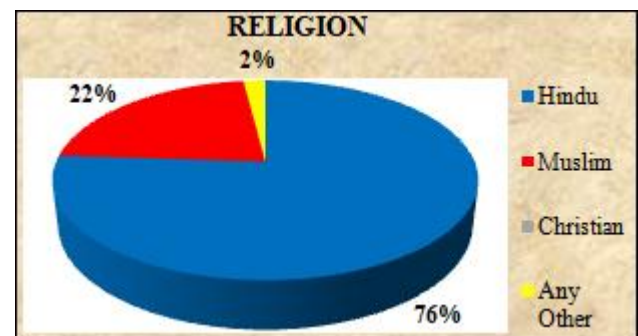


Figure 1.2: Pie - diagram showing distribution of religion of antenatal mothers

Table 1.3: Distribution of antenatal mothers according to parity, n=50

Parity	Frequency (f)	Percentage (%)
Primipara	28	56
Multi para	22	44
Total	50	100

Table 1.3 shows that in relation to parity, majority 28 (56%) were Primi mother and 22 (44%) were Multipara.

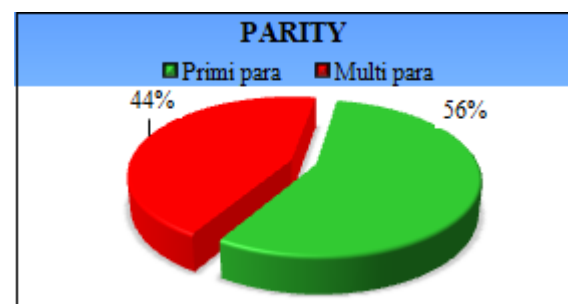


Figure 1.3: Pie - diagram showing distribution of Parity

Table 1.4: Distribution of antenatal mothers according to educational status, n=50

Educational Status	Frequency (f)	Percentage (%)
Illiterate	4	8
M. E. School (I - VIII)	26	52
High School (IX - XII)	16	32
Higher Secondary Pass and above	4	8
Total	50	100

Data presented on Table 1.4, educational status depicts that majority of mothers 26 (52 %) had completed M. E. School followed by High school pass 16 (32%) and then followed by both Higher secondary & above education i. e., 4 (8%) and 4 (8%) of the mothers were Illiterate.

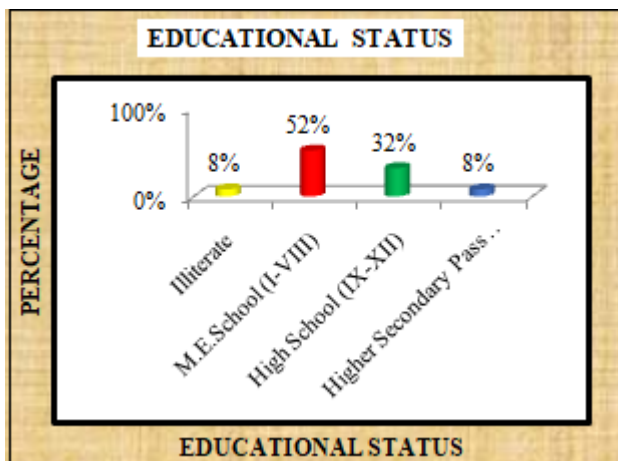


Figure 1.4: Cylindrical diagram showing Educational Status of Antenatal Mothers

Table 1.5: Distribution of antenatal mothers according to occupation, n=50

Occupation	Frequency (f)	Percentage (%)
Daily wager	9	18
House wife	35	70
Service	4	8
Business	2	4
Total	50	100

Table 1.5 reveals that with respect to occupation, out of 50 antenatal mothers majority 35 (70%) were housewife, 9 (18%) were daily wagers, 4 (8%) mothers were doing services and only 2 (4%) were doing business. None of the antenatal mothers were cultivators.

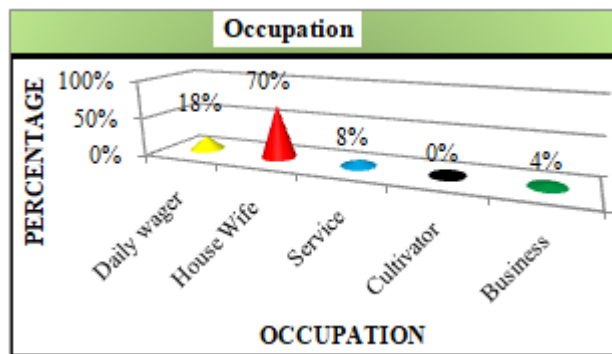


Figure 1.5: Conical diagram showing Occupation of Antenatal Mothers

Table 1.6: Distribution of antenatal mothers according to their type of family, n=50

Type of Family	Frequency (f)	Percentage (%)
Joint family	30	60
Nuclear family	20	40
Total	50	100

Table 1.6 demonstrates that majority of samples 30 (60%) out of 50 antenatal mothers belonged to joint families and 20 (40%) were from nuclear family.

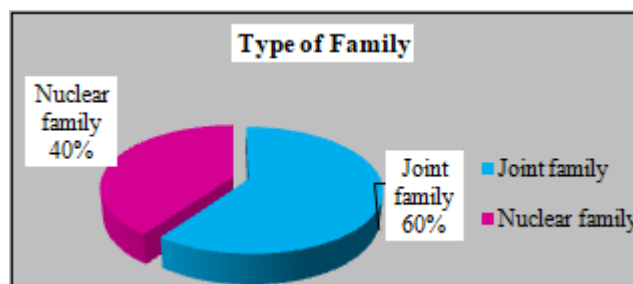


Figure 1.6: Pie - diagram showing Type of Family of Antenatal Mothers

Table 1.7: Distribution of antenatal mothers according to income of family, n=50

Income of the family	Frequency (f)	Percentage (%)
Less than Rs.3, 000 per month	13	26
Rs.3, 001 - Rs.5, 000 per month	22	44
Rs.5, 001 - Rs.10, 000 per month	13	26
More than Rs.10, 000 per month	2	4
Total	50	100

Table 1.7 shows that in case of monthly income of the family, majority 22 (44%) had income of Rs 3001 to Rs5000 per month and 13 (26%) belonged to both group i. e., less than Rs3000 per month and Rs.5, 001 to Rs.10, 000 per month and only 2 (4%) had family income more than Rs.10, 000 per month.

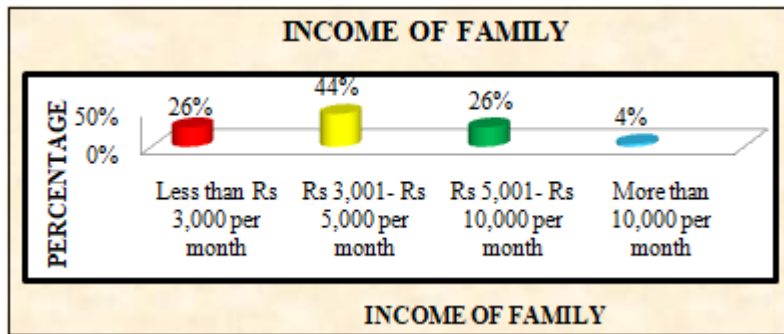


Figure 1.7: Bar diagram showing Income of the Family of Antenatal Mothers

Table 1.8: Distribution of antenatal mothers according to source of information regarding antenatal exercises, n=50

Source of information about antenatal exercises	Frequency (f)	Percentage (%)
Self - learning	7	14
Medias	13	26
Parents/Friends/Relatives	13	26
Health care Personnel	17	34
Total	50	100

Table 1.8 source of information regarding antenatal exercise by 50 antenatal mothers, 17 (34%) participants got information through health care personnel, 13 (26%) participants got information through both Medias and parents/friends and relatives and another 7 (14%) participants got through Self - learning.

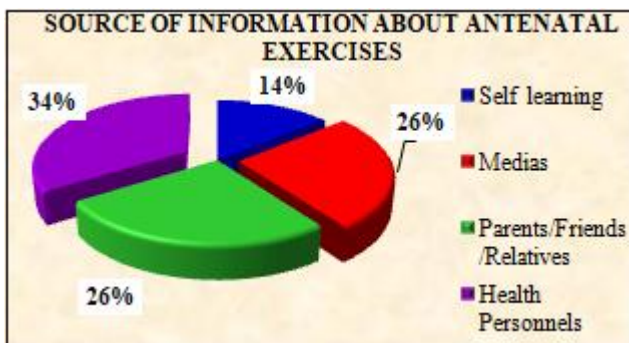


Figure 1.8: Pie - diagram showing various Source of Information about Antenatal Exercises by antenatal Mothers

Section II: Distribution of knowledge scores of antenatal mothers regarding antenatal exercises.

The data were obtained from the antenatal mothers by Part II - Structured knowledge questionnaire and were tabulated in the master sheet.

Table 2.1: Distribution of pre - test level of knowledge regarding Antenatal exercises among Antenatal mothers, n=50

Knowledge scores	Score Range	Frequency	Percentage (%)
Inadequate knowledge	Up to 8	9	18
Moderately Adequate Knowledge	9 - 16	36	72
Adequate Knowledge	17 - 25	5	10
Total		50	100

Table 2.1 showed that majority of sample i, e.36 (72%) has moderately adequate knowledge, followed by inadequate knowledge 9 (18%) and then 5 (10%) has adequate knowledge.

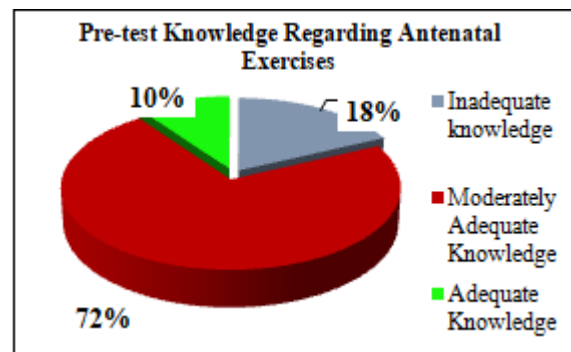


Figure 2.1: Pie - diagram showing the percentage distribution of pre - test knowledge regarding antenatal exercises among antenatal mothers

Table 2.2: Distribution of post - test level of knowledge regarding Antenatal exercises among Antenatal mothers n=50

Knowledge scores	Score Range	Frequency	Percentage (%)
Inadequate knowledge	Up to 8		
Moderately adequate knowledge	9 - 16		
Adequate Knowledge	17 - 25	50	100
Total		50	100

The above table 2.2 revealed that all the mothers 50 (100%) after administering the video - assisted planned teaching programme, the majority of antenatal mothers had scored 17 - 25 showing adequate knowledge regarding antenatal exercises indicating the effectiveness of the Video - assisted structured teaching program.

Table 2.3: Comparison of frequency and percentage distribution of pre - test and post - test level of knowledge regarding antenatal exercises among antenatal mothers, n=50

Knowledge	Score range	Pre test		Post test	
		Frequency	Percentage %	Frequency	Percentage %
Inadequate knowledge	Up to 8	9	18		
Moderately adequate knowledge	9 – 16	36	72		
Adequate knowledge	17 - 25	5	10	50	100
Total		50	100	50	100

Data present in the table 2.3 showed that majority of sample i. e.36 (72%) has moderate knowledge in pretest, but in post test there is no sample which had moderate knowledge. In pre test 9 (18%) sample has inadequate knowledge and in post test no sample has inadequate knowledge. In pre test 5 (10%) of sample had adequate knowledge but after the Video - assisted programme, 50 (100%) has scored between 17 - 25, thus showing the effectiveness of the teaching program.

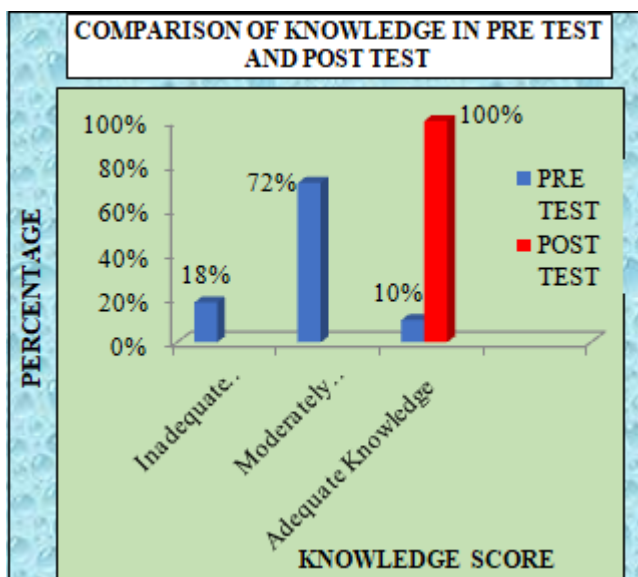


Figure 2.2: Bar diagram showing Pre - test and Post - test level of knowledge of antenatal mothers on antenatal exercises

Table 2.4: Descriptive statistics of knowledge during pre - test and post – test, n=50

Knowledge	Pre	Post
Range	6 - 20	18 - 25
Mean	11.62	23.88
Median	11.00	24.00
Std. Deviation	3.35	1.51

Maximum possible score=25

The data presented in table 2.4 shows that the range for Pre test is 6 - 20 while for the post test is 18 - 25 and mean for pre test and post test are 11.62 and 23.88, respectively. The median for Pre test and post test are 11.00 and 24.00, respectively. The standard deviation found to be 3.35 for the pre test and 1.51 for the post test which indicates that the group is homogeneous.

Section III: Findings related to the effectiveness of video - assisted planned teaching programme on knowledge on antenatal exercises among antenatal mothers.

The pre test and post test knowledge score obtained by the antenatal mothers regarding antenatal exercises were tabulated in the master sheet.

Significance of difference between pre test and post test knowledge scores

Null Hypotheses H₀₁. There is no significant difference between pre - test and post - test knowledge scores on antenatal exercises among antenatal mothers as by the structured questionnaire at 0.05 level of significance.

The difference among mean pre test and post test are compare with the help of paired “t” test.

Table 3.1: Effectiveness of video - assisted planned teaching programme on antenatal mothers on antenatal exercises in terms of knowledge, n=50

Variable	Test	Mean	Mean difference	Standard Deviation	Standard Error Mean	t	df	Significance (2 tailed)	Remarks
Knowledge	Pre Test	11.62	12.26	3.35	0.473	22.164	49	0.000	Highly Significant (S)
	Post Test	23.88		1.51	0.213				

The table 3.1 is made to check whether there was any significance difference in the mean scores of knowledge levels prior and after training. Paired t test was performed.

The data presented showed that the mean difference between the pre test and the post test scores was 12.26. In order to find whether the difference was statistically significant “t” value was computed (t₄₉= 22.164) showed that there is a significant difference between the pre test and post test mean scores of knowledge’s. Hence the null hypothesis is rejected. These results showed that there was statistically significant difference in the knowledge scores before and after the Video - assisted planned teaching programme at the level of 0.05. Therefore it can be concluded that Video - assisted

programme did make an effort in improving the knowledge regarding Antenatal exercises among the Antenatal mothers of the Dhirenpura Maternity Hospital.

Table 3.2: Computation of knowledge scores on antenatal exercises in terms of actual gain, possible gain and modified gain

Variable	Mean % score		Actual gain score (%)	Possible gain score (%)	Modified gain score (%)
	Pre test	Post test			
Knowledge level	23.24	47.76	24.52	76.76	0.319

In this present study, the mean percentage score for pre test and post test score are 23.24% and 47.76%, respectively. The actual gain score is the observed score which was calculated and found 24.52%. The possible gain score is the expected score which was 76.76%. The Modified gain score is 0.319% which is to needed to be modified to get the expected score in future studies.

Section IV: Determine association of pre test knowledge scores with selected socio - demographic variables.

In order to find significance association between the pre test knowledge scores and selected variables, the null hypothesis was formulated. Chi - square was computed and found that there was no significant association. It supports the null hypotheses stating that there is no significant association between the pre test knowledge score of antenatal mothers with variables, is accepted, which reflects that the video - assisted planned teaching programme is independent of variables regarding antenatal exercises.

3. Major Findings of the study

- Majority of Antenatal mothers i. e., 35 (70%) out of 50 mothers belongs to the age group of 19 - 29 years followed by less than 19 years 9 (18%) & only 6 (12%) were 29 years and above.
- According to Parity, 28 (56%) were Primi mother and 22 (44%) were Multipara.
- Source of information regarding antenatal exercise by 50 antenatal mothers, 17 (34%) participants got information through health care personnel, 13 (26%) participants got information through both Medias and parents/friends and relatives and another 7 (14%) participants got through Self - learning.
- The mean percentage for pre test and post test are 23.24% and 47.76%, respectively. The actual gain score calculated and found 24.52%. The possible gain score is 76.76%. The Modified gain score is 0.319%.
- Paired “t” test showed that the post test knowledge scores is 23.88 i. e., significantly higher than the pre test (11.62) as evidenced by $t = 22.164 < 0.05$
- Chi - square showed that there was no significant association between variables like age, religion, educational status, parity, occupation, type of family, income of family and source of antenatal exercises related information.

Nursing Implications:

- Organize staff development programme to update the knowledge of the nurses regarding antenatal exercises so that they will be able to impart proper education to the mothers during their antenatal check - ups in the antenatal out - patient department and their hospital stay in the antenatal wards regarding the antenatal exercises and its practice.
- Research materials, thesis, project, journals, magazines, newspaper articles regarding antenatal exercises in various places can be discussed in the conference and the workshops.

4. Limitations

- 1) The exact representation of population cannot be ensured and generalization is limited to the population under study.
- 2) The sampling technique used was convenient sampling which limits the generalization to larger population which has similar characteristics.

5. Recommendations

- 1) Similar study can be replicated on a large sample which may help to draw conclusions that are more definite and generalizable to a large population. Thus there is a need to repeat study on a large scale.
- 2) Comparative Study can be conducted on Knowledge, attitude and practice regarding antenatal exercises in both Primipara and multipara mothers.

6. Conclusion

This study highlights the need for measures in order to improve the knowledge and practice of the antenatal mothers regarding antenatal exercises. The video - assisted planned teaching programme was found to be effective teaching method for improving the knowledge of antenatal mothers regarding antenatal exercises in Dhirenpara Maternity and Child Welfare Hospital and gives further insights into the existing problems.

References

- [1] Potter PA, Perry A. G. Fundamental of Nursing. 7th ed. Mosby: 2009. P 1094
- [2] Jacob Annamma: A Comprehensive textbook of midwifery & gynaecological nursing: 3rd edition: New Delhi: Jaypee brothers publishers; 2012: 635 - 663.
- [3] Childbirth. 2012 March; Available at <http://www.betterhealth.antenatalexercise.html>.
- [4] Jenifer Sabino, Current reviews in Musculoskeletal medicines, 2008, Feb 26, Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2684210/>
- [5] American Congress of Obstetricians and Gynaecologists (ACOG) and Committee on Obstetric Practice, “Exercise during pregnancy and the postpartum period”. ACOG Committee Opinion Number 267, "Obstetrics & Gynecology, vol.99, no.1, pp.171–173, 2002.
- [6] MajhiKumar Arup. Bedside Clinics in Obstetrics, 3rd ed. Kolkata. Bimal Kumar Dhur of Academic Publishers. 2015. p.737 - 738
- [7] Pathology of pregnancy: 19 February 2016; Available at <https://en.wikipedia.org/wiki/Pre-eclampsia>
- [8] NeelamKumari, Shivani Sharma “Midwifery & Gynecological”, SK Vikas & company, 2nd edition, 2010; Page No.145 - 147.
- [9] ISRN Obstetrics and Gynecology, Volume 2014 (2014), Article ID 260539, 8 pages <http://dx.doi.org/10.1155/2014/260539>