

# A Comparative Interventional Study Between Video Assisted Teaching and Demonstration in Improving Skills of B.Sc. Nursing 4th Year Students on Obstetrical Palpation, in the Selected Nursing Colleges of Bilaspur (C.G.)

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**Abstract:** Abdominal palpation can be used as a means to assess, length, frequency, and strength of uterine contractions and postnatally to gauge uterine involution. In obstetrics, Leopold manoeuvres are a common and systematic way to determine the position of a foetus inside the woman's uterus; they are named after the Gynaecologist Christian Gerhard Leopold. **Objective:** To assess the effectiveness of video assisted teaching programme on skills regarding obstetrical palpation. To assess the effectiveness of demonstration on skills regarding obstetrical palpation. To compare the video assisted teaching with demonstration. **Materials and Methods:** A comparative interventional research design was adopted for this study. A total number of 60 students of B.Sc. Nursing 4th year was selected and divided into two groups, Group 1- video assisted teaching and Group 2- demonstration was selected by convenient sampling method. The study was adopted one group pre-test post-test design. Data was collected by assessing the skill through observational checklist method. Impact skill given to students by using video assisted teaching and demonstration method. **Results:** The present study assessed the skills of B.Sc. Nursing 4th year students regarding obstetrical palpation. The overall mean percentage of video assisted teaching in pre-test was 11.46 (1.27%) and post-test was 24.4 (2.71%) with standard deviation (2.588) with a positive difference, and mean percentage of demonstration in pre-test was 7 (0.77%) and post-test was 17.6 (1.95%) with standard deviation (3.826). **Conclusion:** The study revealed that students of B.Sc nursing 4th year gained skill after the video assisted teaching and demonstration. Analysis of data shows that the post-test skill score of video assisted teaching is significantly higher than the post-test skill score of demonstration at  $P < 0.05$  level of significance.

**Keywords:** Kruder-Richardson formulas, left occiput anterior, Leopold maneuvers, video-based teaching.

## 1. Introduction

Pregnancy is a creative and productive period in the life of a woman. It is one of the vital events, which needs special care from conception to postnatal period. Pregnancy, also known as

gestation, is the time during which one or more offspring develops inside a woman. Pregnancy usually occurs by sexual intercourse, but can also occur through assisted reproductive technology procedures. Childbirth typically occurs around 40 weeks from the start of the last menstrual period (LMP). This is just over nine months (gestational age) where each month averages 31 days. When using fertilization age it is about 38 weeks. An embryo is the developing offspring during the first eight weeks following fertilization, (ten weeks' gestational age) after which, the term fetus is used until birth. Pregnancy is divided into three trimesters of approximately three months each. The first trimester includes conception, which is when the sperm fertilizes the egg. The fertilized egg then travels down the Fallopian tube and attaches to the inside of the uterus, where it begins to form the embryo and placenta. At 28 weeks, more than 90% of babies can survive outside of the uterus if provided with high-quality medical care, though babies born at this time will likely experience serious health complications such as heart and respiratory problems and long-term intellectual and developmental disabilities. The joyful experience of the pregnancy is not always joyful. Provision of quality obstetric care is regarded as an important component of maternal health which assists in the reduction of maternal and neonatal death rates. Abdominal palpation can be used as a means to assess, length, frequency, and strength of uterine contractions and postnatally to gauge uterine involution. In obstetrics, Leopold manoeuvres are a common and systematic way to determine the position of a foetus inside the woman's uterus; they are named after the gynaecologist Christian Gerhard Leopold. They are also used to estimate term foetal weight. The manoeuvres consist of four distinct actions, each helping to determine the position of the foetus. The manoeuvres are important because they help determine the position and lie of the foetus, which in conjunction with correct assessment of the shape of the

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maternal pelvis can indicate whether the delivery is going to be complicated, or whether a caesarean section is necessary. The examiner's skill and practice in performing the manoeuvres are the primary factor in whether the foetal lie is correctly ascertained. Nursing students need to have the appropriate skills that will lead to positive patient outcomes. Skills therefore tend to affect clinical care and outcome. In health care system, nurses are the backbone of health care delivery system. Hence training of nursing students is important in order to acquire the necessary knowledge and attitude to provide quality obstetric care which will consequently contribute in reduction of maternal deaths. By investigating the skills of nursing and midwifery students' in relation to obstetrical palpation during antenatal period in selected institution of Bilaspur (C.G), the extent of deficit in skills will be identified. The study will help to gather evidence-based information for interventions aimed at improving quality of obstetric palpation performed by nursing and midwifery students' in Bilaspur (C.G). This might lead to improvements in obstetric care.

## 2. Materials and Methods

The study design selected for this study was comparative interventional research design. The present study tends to measure the effectiveness of video teaching and demonstration in improving skill on obstetrical palpation. A total number of 60 students of B.Sc. Nursing 4th year was selected and divided into two groups, Group 1- video assisted teaching and Group 2- demonstration was selected by convenient sampling method. The study was adopted one group pre-test post-test design. Data was collected by assessing the skill through observational checklist method. Impact skill given to students by using video assisted teaching and demonstration method. The main focus of the study was to improve the skills of B.SC nursing 4th year students by comparing through video assisted teaching and demonstration on obstetrical palpation through pre-test and post-test. The present study was conducted in Government college of Nursing, Bilaspur Chhattisgarh and Ayush college of Nursing, Bilaspur Chhattisgarh. The criterion for selecting this setting was feasibility for conducting the study, availability of the samples and familiarity of the research investigator with the setting. Population is the entire aggregation of the class that meets a designed set of criteria. In present study population consist of the students of B.Sc. nursing 4th year in Bilaspur C.G. Sample consists of the subject of the population selected to participate in research study. In the present study the sample consist of 60 students i.e. Group -1 consisting of 30 students, and Group -2 consisting of 30 students of B.Sc. Nursing 4th year of the selected Colleges of Nursing, Bilaspur Chhattisgarh. Sample selection was based on cost, practical concern, design and the people's ability to participate in the study. The sample selection criteria include the following:

The study is delimited to:

- Students of selected Nursing Colleges, of Bilaspur (C.G.).
- B.Sc. nursing 4th year students.
- 60 samples.

- The students who are present at the time of data collection.
- Participants who are willing to participate in the study.
- The students who know Hindi and English.

After an extensive review of literature and discussion with the experts the check list to assess the skill is selected for the study is developed. It is considered to be the most appropriate instrument to elicit the response from samples. The investigator collects the baseline demographic data using convenient sampling technique to select the samples, Investigator visited respondent, introduced herself the samples and explained the purpose of the study and ascertained the willingness of the participants, the respondents was assured anonymity and confidentiality of the information provided by them. A comfortable place was selected and the participants made comfortable. Pre-test will be conduct and later interventions done. Data was collected with the help of check list. Validity of the tool and lesson plan for video assisted teaching and demonstration on obstetrical palpation was established by six experts. The experts are professor from obstetrics and gynaecology nursing department. Reliability of the observational checklist on skill assessment was Kruder Richardson i.e., KR 20 method as because of the dichotomous answer. The "r" was found to be 0.84, which showed the tool was consistent among population.

### *Ethical Consideration*

Permission was obtained from the Principal of, Govt. College of Nursing, Bilaspur (C.G). Permission was also obtained from selected colleges of Nursing, Bilaspur (C.G). They had the freedom to withdraw from the study at any time without giving any reason. Anonymity of the participant was ensured. Confidentiality of the data was maintained.

## 3. Results

Data analysis showed that the students in the video assisted teaching and demonstration program had identical variables such as age, gender, marital status, religion, Certificate programme any related to palpation currently undergoing, previous classes or demonstration on obstetrical palpation, clinical duties in OBG ward recently.

Table 2 reveals that the skill score in pre-test and post test was 344 and 732 respectively out of 900. The total mean and mean score percentage 11.46(1.27%) and 24.4 (2.71%) respectively. The standard deviation of pre test was 3.041 and post test was 2.588.

Table 3 reveals that the skill score in pre-test and post test was 210 and 528 respectively out of 900. The total mean and mean score percentage 7 (0.77%) and 17.6 (1.95%) respectively. The standard deviation of pre test was 0 and post test was 3.826.

### *Paired 't' Test for Assessing Significant Difference Between Pre-Test and Post-Test Skill Score Section*

Table 4 represents that there was highly significant difference between the pre-test and post-test skill score of video assisted teaching as calculated value 25.03 (df 29) was greater than the table value 2.05 at 0.05 level of significance.

Table 1

Frequency and percentage distribution of B.Sc. nursing 4th year students according to socio demographic data		n=30	
Video assisted teaching			
S.No.	Demographic data	Frequency (F)	Percentage (%)
<b>1.</b>	<b>Age in years</b>		
1.1	20-21	0	0
1.2	22-23	30	100
1.3	23 and above	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>2.</b>	<b>Gender</b>		
2.1	Male	0	0
2.2	Female	30	100
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>3.</b>	<b>Marital status</b>		
3.1	Unmarried	30	100
3.2	Married	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>4.</b>	<b>Religion</b>		
4.1	Hindu	20	66.66
4.2	Muslim	3	10
4.3	Christian	7	23.33
4.4	If any other	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>5.</b>	<b>Certificate programme any related to palpation currently undergoing</b>		
5.1	Yes	0	0
5.2	No	30	100
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>6.</b>	<b>Do you attend any classes or demonstration on obstetrical palpation</b>		
6.1	Yes	30	100
6.2	No	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>7.</b>	<b>Have you done any clinical duties in OBG ward recently</b>		
7.1	Yes	30	100
7.2	No	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>

  

Demonstration:		n=30	
S.No.	Demographic data	Frequency (F)	Percentage (%)
<b>1.</b>	<b>Age in years</b>		
1.1	20-21	0	0
1.2	22-23	30	100
1.3	23 and above	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>2.</b>	<b>Gender</b>		
2.1	Male	5	16.66
2.2	Female	25	83.33
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>3.</b>	<b>Marital status</b>		
3.1	Unmarried	27	90
3.2	Married	3	10
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>4.</b>	<b>Religion</b>		
4.1	Hindu	22	73.33
4.2	Muslim	3	10
4.3	Christian	5	16.66
4.4	If any other	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>5.</b>	<b>Certificate programme any related to palpation currently undergoing</b>		
5.1	Yes	0	0
5.2	No	30	100
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>6.</b>	<b>Do you attend any classes or demonstration on obstetrical palpation</b>		
6.1	Yes	30	100
6.2	No	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>
<b>7.</b>	<b>Have you done any clinical duties in OBG ward recently</b>		
7.1	Yes	30	100
7.2	No	0	0
	<b>Total</b>	<b>30</b>	<b>100</b>

Table 2

Assessment of skill regarding obstetrical palpation through video assisted teaching between pre-test, post-test, mean percentage, and standard deviation (n=30)

S.No.	Skill	Total skill score	Total mean	Total mean percentage	Standard deviation
1.	Pre-test	344/900	11.46	1.27	3.041
2.	Post-test	732/900	24.4	2.71	2.588

Table 3

Assessment of skill regarding obstetrical palpation through demonstration between pre-test, post-test, mean percentage, and standard deviation (n=30)

S.No.	Skill	Total skill score	Total mean	Total mean percentage	Standard deviation
1.	Pre-test	210/900	7	0.77	0
2.	Post-test	528/900	17.6	1.95	3.826

Table 4

Mean, mean difference, standard deviation and 't' values of pre-test and post-test skill scores of video assisted teaching

	Mean	Mean percentage	Standard deviation	Standard error	Df	Paired 't' test	Table value	Inference
Pre-test	11.46	2.617	3.041	0.55	29	25.03	2.05	Highly significance
Post-test	24.4	1.229	2.588	0.47				

Table 5

Mean, mean difference, standard deviation and 't' values of pre-test and post-test skill scores of demonstration

	Mean	Mean percentage	Standard deviation	Standard error	Df	Paired 't' test	Table value	Inference
Pre-test	7	4.285	0	0	29	14.92	2.05	Highly significance
Post-test	17.6	1.704	3.826	0.698				

Table 6

Comparison between video assisted teaching and demonstration on obstetrical palpation of B.Sc. nursing 4th year students

Teaching Method	Mean		Standard Deviation		'T' Value (Calculated)	Inference
	Pre-test	Post-test	Pre-test	Post-test		
Video assisted teaching	11.46	24.4	3.041	2.588	25.03	Highly significant than the table value i.e., 2.05 at 0.05 level of significance
Demonstration	7	17.6	0	3.826	14.92	Highly Significant than the table value i.e., 2.05 at 0.05 level of significance

Table 5 represents that there was highly significant difference between the pre-test and post-test skill score of video assisted teaching as calculated value 14.92 (df 29) was greater than the table value 2.05 at 0.05 level of significance.

#### Comparison Between Video Assisted Teaching and Demonstration on Obstetrical Palpation of B.Sc. Nursing 4th Year Student

Depicts that there was a mild difference in the effectiveness of teaching methods. The video assisted teaching method was more effective than demonstration method in terms of pre-test and post-test skill score of B.Sc. nursing 4th year of selected colleges of nursing, Bilaspur Chhattisgarh.

#### 4. Discussion

The study findings show that the inferential value of video assisted teaching program is higher as compared to the demonstration method and has more impact in improving the skill. The study reveals that the skill score in pre-test and post-test was 344 and 732 respectively out of 900. It means previously they have less skill regarding obstetrical palpation and after giving video assisted teaching their skill is increased therefore video assisted teaching programme was effective. This showed the effectiveness of video assisted teaching programme in terms of improvement in skill score. The total mean and mean score percentage 11.46 (1.27) and 24.4 (2.71) respectively. Mean gain showed that the post-test skill scores was higher than pre-test skill scores in all areas. The standard deviation of pre-test was 3.041 and post-test was 2.588. Reduction in standard deviation in post-test was a sign of positive increased in skills after administering video assisted

teaching. Hence it is effective.

These findings are supported by Yogeswari, who conducted pre-experimental one group pre-test and post test design to assess video assisted teaching programme in enhancing the level of knowledge and attitude of antenatal mothers regarding antenatal care in primary health center, Kalapet, a rural area of Puducherry. Yogeswari study suggested that video assisted teaching programme was effective in enhancing the level of knowledge and attitude of antenatal mothers regarding antenatal care. The study findings show that the in pre test 18(60%) had Inadequate knowledge, 12 (40%) had moderately adequate Knowledge and none of them had adequate knowledge. In post-test, 18 (60%) had moderately adequate Knowledge, 12(40%) had adequate knowledge and none of them had inadequate knowledge. In pre test 3(10%) had neutral attitude, 27 (90%) had desirable attitude. In Post-Test 30 (100.0%) had desirable attitude, none of them had neither undesirable nor neutral attitude. Video assisted teaching programme was effective in improving the level of knowledge ( $t=20.924$ ) and attitude ( $t=8.148$ ) regarding antenatal care among antenatal mothers at  $p<0.001$ . There was weak correlation between knowledge and attitude ( $r=0.143$ ). There was a statistically significant association between level of knowledge with previous knowledge at  $p<0.05$ .

Quasi experimental study conducted by Mary Jenifer et al. to compare and evaluate the effectiveness on Video Assisted Teaching on the knowledge and practice of the nurses on antenatal foetal assessment. The study findings revealed that there was an increase in mean scores of knowledge from 14.8 to 21.0 and practice from 11.8 to 24.7 after the Video Assisted

Teaching which shows the effectiveness of Video Assisted Teaching on the knowledge and practice of the nurses on antenatal foetal assessment. This study enabled nurses to become competent in doing antenatal foetal assessment in the wards and confidently interpret the readings and inform the doctors.

Comparative interventional study between video assisted teaching and demonstration of the present study on obstetrical palpation is a strategy which is intended to improve the practical skills of B.Sc. Nursing 4th year students which helps them to identify and to feel the presenting part of the fetus, decide whether the presenting part is loose above the pelvis or fixed in the pelvis, examine baby's position and development, discover how the baby is lying in the uterus, prevent or identify and treat conditions that may threaten the health of the mother and fetus and can prevent complication during childbirth. Evidence based nursing practice can go a long way in improving the quality of nursing care rendered to antenatal mothers.

It is essential for all the students of B.Sc Nursing 4th year students that they should have undergone training in the performance of accurate and efficient obstetrical palpation. Their level of skill on the subject could be substantially improved by actively involving in nursing education. The video assisted teaching and demonstration of the present study could be utilized by the nursing teachers to teach nursing students about obstetrical palpation. The self-made video on obstetrical palpation could be utilized by the nursing students in the classroom and staff nurses in different clinical areas to refine their existing knowledge and skill on the topic from time to time, in order to render quality and effective nursing care.

### 5. Conclusion

Videos help to memorize the steps of palpation which enables the practitioner to perform adequately while doing the procedure in a correct manner without lacking the steps. There is a great need for an extensive nursing research to upgrade the practice and skills on obstetrical palpation to examine baby's position and development, discover how the baby is lying in the uterus, prevent or identify and treat conditions that may threaten the health of the mother and fetus. Research should be done on various innovative methods and teaching and clinical practices to improve nursing care and to develop good and effective teaching materials which would enhance knowledge and skills of the students as well as staff nurses in their practice. The present study conducted by the investigator could be a source of review of literature for others who are intending to conduct studies related to obstetrical palpation. Findings of the study could be disseminated to other nursing students and staff nurses working in the maternity wards or other units through workshop, conferences etc. The college administration can organize workshop or antenatal assessment programme for the students and in-service education and continuing nursing education for the staff nurses in order to enhance their knowledge and skills on obstetrical palpation. The video assisted teaching programme and the observational checklist performed by the investigator may be utilized by the colleges

or the nursing superintendents to assess the knowledge and skills of the students as well as staff nurses before posting them to the maternity wards or obstetrical OPDs. This study material could be utilized by the nursing teachers and nursing administrator for the developmental programme.

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