# Effectiveness of Lecture and Demonstration on Knowledge and Practice Regarding Initiation of Breathing Pattern for Early New Born among 4th Year Basic B.Sc Nursing Students at Selected Nursing College

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**Abstract:** *The most profound change at birth is your baby's first breath. At this point your baby's lungs, which were filled with fluid during pregnancy, most suddenly fill with oxygen from the air. The fluid in the lungs is removed through the blood and lymph system and is replaced by air your baby's lung must be able to exchange oxygen and carbon dioxide results suggest that lecture and demonstration method highly efficacious in 4th year basic BSc nursing students. This study was based on Quantitative research approach. Probability in simple random sampling technique. True experimental pre test post test control group research design. In this study included 60 samples. Based on the objectives and the hypothesis the data were analyzed by using various statistical tests. Analysis of data showed that there is significant difference between pre test and post test knowledge. The calculated 't' test values are much higher than the tabulated values. Hence it is statistically interpreted that the lecture and demonstration method on initiation of breathing pattern for early newborn among 4th year basic b.sc nursing students effective in selected nursing college. In this study lecture and demonstration method was very effective to improve the 4th year basic b.sc nursing students' knowledge and practice.*

**Keywords:** Effectiveness, Lecture, Demonstration, Knowledge, Practice, Initiation

## 1. Introduction

*"A newborn to be born asked god you are going to send me to the earth but how will I survive being so small. God replied among the many angles I have chosen best for you."*
*- Carl Sandburg.*

*A newborn is a god's divine precious gift given to a mother. Hence the birth of a newborn is one of the most inspiring and* marvelous joyful events that occurs in every women's life time. The most profound change at birth is your baby's first breath. At this point your baby's lungs, which were filled with fluid during pregnancy, most suddenly fill with oxygen from the air. The fluid in the lungs is removed through the blood and lymph system and is replaced by air your baby's lung must be able to exchange oxygen and carbon dioxide. (1) There are two pathways of motor neuron stimulation of respiratory muscles the first is the control of voluntary breathing by the cerebral cortex. The second is involuntary breathing controlled by the medulla oblongata. There are chemoreceptor's in the aorta, the carotid body of carotid arteries and in the medulla oblongata of the brainstem that are sensitive to P.H. as carbon dioxide levels increase there is buildup of carbonic acid which releases hydrogen ions and lowers P.H thus the chemoreceptor's do not respond to changes in oxygen levels but to pH, which is dependent upon plasma carbon dioxide levels. In other words Co2 is the driving force for breathing. The receptors in the aorta and the carotid sinus initiate a reflex that immediately stimulates breathing rate and the receptors in the medulla stimulate a sustained increase in breathing until blood P.H returns to normal. The equipment used to provide pressure ventilation to newborns needing resuscitation at delivery varies between institutions. Mechanical factor during vaginal delivery the compression of the fetal chest by the narrow birth canal forces small amount of fetal lung fluid to be pushed out of the lungs to the upper airway channels. This fluid is then suctioned in the mouth and nose of neonate as the head emerges from the vagina. When the pressure from the chest is released the chest draws in air into the lungs. Thermal factor intrauterine temperature is warm .at birth when the neonate moves into a cooler environment, sensors of the skin transmit impulses to the brain to stimulate the respiratory center, thus breathing is initiated.

## 2. Review of Literature

**E W Hoskyns, A D Milner (1987)** A a study was conducted on, "simple method of face mask resuscitation at birth."Twenty two infants were resuscitated at birth using a face mask connected to an oxygen supply from a conventional resuscitaire. Intermittent finger occlusion provided the positive pressure within the mask. This method was apparently at least as effective as the best bag and mask systems and was convenient to use.(2)

**Ahmed RG[1], Suliman GI, Elfakey WA, Salih KM (2015)** They conducted the study on, "Effect of tactile kinesthetic stimulation on preterm infants' weight and length of hospital stay in Khartoum, Sudan." The objective of this study was to determine the effect of 7 days tactile kinesthetic stimulation (TKS) on preterm infants' weight and hospital stays in Khartoum State, Sudan the method was used in quasi experimental design Data was collected using a structured self-designed and validated questionnaire, checklist, and weighting scale. Weight gain and hospital stay were compared between the 2 groups. The result was Over the

constitutive 7 days, the case group gained significantly more weight (1071 gm versus 1104 gm) compared with the control group (1077 gm versus 1084 gm) (1084.55±90.74) who gained only 6.9 gm within the same 7 days without TKS treatment. The mean difference in weight gain was significant (p=0.00). The hospital stay for preterm infants in the case group was significantly shorter (18.05±9.36 versus 25.47±10.25; p=0.00). they concluded that Tactile kinesthetic stimulation for preterm infants has a beneficial effect on weight gain and earlier discharge from hospital, which are sequentially efficient and cost effective.[3]

The Quasi experimental study was conducted on Efficacy of Lecture Cum Demonstration Method on Nursing Students' Knowledge and Skills of using Partograph, in Selected Nursing Institution of Dehradun, Uttrakhand on September 2016.

The Objectives of the study was to assess nursing students' knowledge and skills of using Partograph, develop a teaching plan and evaluate the efficacy of lecture cum demonstration method on their knowledge and skills of using Partograph. The data analyzed was Quasi experimental (one group pre-test and post-test) investigator design was adopted in quantitative approach. A structured knowledge questionnaire and simplified Partograph were used for data collection. This study concluded that Demonstration method was found to be more effective in achieving the objective of teaching Partograph.

**Problem definition** :- A true experimental study to assess the effectiveness of lecture and demonstration on knowledge and practice regarding initiation of breathing pattern for early new born among 4th year basic b.sc nursing students at selected nursing college.''

# 3. Methodology

**Research approach:** An evaluative approach was used for this study

**Research design:** experimental research, pre test post test control group design

**Variables under study:** (1) Independent variable:

**Lecture & Demonstration** regarding initiation of breathing pattern in early newborn. (2) Dependent variable

**Knowledge & Practice** regarding initiation of breathing pattern in early newborn.

**Setting:** The study was conducted in selected nursing college

**Population:** In this study, the population includes basic b.sc nursing students. **Target population** consists of 4th year Basic BSc nursing students in all colleges.

**Accessible population** 4th year Basic BSc nursing students in selected college

## Sample and sampling technique

**Sample:** In the present study sample is 4th year Basic BSc nursing students in selected nursing college.

**Sample size**: The sample size for the present study is 60 students who fulfill the set inclusion criteria.

**Sampling technique:** A probability simple random sampling technique.

### Inclusion criteria- Students who are
- Studying in 4th yr B.sc nursing students.
- Present during the time of data collection.
- Willing to participate in the study.
- Able to read speak and write in English

### Exclusion criteria- Students who are
- Ill in between the time of data collection.
- Not able to do demonstration.
- Will not available at the time of data collection

**Plan for data analysis: -** (1) Description of demographic characteristics of the nursing students was computed by using frequency and percentage. (2) Mean, Standard deviation of pre and post- test knowledge scores was computed. (3) "t" test was applied to determine the significance of mean difference between mean pre-test and post- test knowledge scores. (4) Chi- square test was used to find the association of knowledge score with demographic variables and the findings were documented in tables, graphs and diagram.

**Scoring mode:** Score 1 was given to every correct answer. 0 was given to every wrong answer. Based on the percentage of scores, level of knowledge was graded as **Poor**- 0 to10 **Average**- 10 to 20, **Good**- 20 to 30.

**Prepration of the tool** Section I: Demographic data, Section II Structured knowledge questionnaire, Section III Observational Checklist

# 4. Results

**Organization of the data**: The collected data is tabulated, analyzed, organized and presented under the following sections: The finding suggest that there was significant increasing the knowledge in experimental group related 4th year Basic B.sc nursing students after giving lecture. The findings suggest that there was significant increasing the knowledge in experimental group related 4th year b.sc nursing students after giving lecture.

| Experiment | Frequency | Mean | S.D. | t value | P value |
|---|---|---|---|---|---|
| PRE | 30 | 11.26 | 2.94 | 15.04 | 0.000 |
| POST | 30 | 18.50 | 3.2 | | |

The comparisons of the pre test and post test means of the knowledge of control group were done by the paired t test. The pre test average score was **11.90** with standard deviation of 3.01. The post test average score was **12.06** with standard deviation of **2.9**. The test statistics value of the paired t test

was **0.50** with **p value 0.62**. Shows no significant difference in the pre and post test knowledge.

**Table III.1:** Comparison of the pre and post test knowledge in experimental

| Control | Frequency | Mean | S.D. | t value | P value |
|---------|-----------|-------|------|---------|---------|
| PRE | 30 | 11.90 | 3.01 | 0.5 | 0.620 |
| POST | 30 | 12.06 | 2.9 | | |

The comparisons of the pre test and post test means of the knowledge of experimental group were done by the paired t test. The pre test average score was 11.26 with standard deviation of 2.94. The post test **average score was 18.50** with standard deviation of 3.2. The test statistics value of the **paired t test was 15.04** with **p value 0.00**. Shows significant difference in the pre and post test knowledge.

**Table IV:** Comparison of the pre and post test Practice – Experimental

| Experimental | Frequency | Mean | S.D. | t value | P value |
|--------------|-----------|-------|------|---------|---------|
| PRE | 30 | 12.03 | 2.44 | 15.84 | 0.000 |
| POST | 30 | 17.93 | 2.93 | | |

The comparisons of the pre test and post test means of the practice of experimental group were done by the paired t test. The pre test average score was 12.03 with standard deviation of 2.44. The post test average score was 17.93 with standard deviation of 2.93. The test statistics value of the **paired t test was 15.84 with p value 0.00**. Shows significant difference in the pre and post test practice. The finding suggests that there was significant increasing the knowledge in experimental group related 4th year Basic B.sc nursing students after giving Lecture. The finding suggest that there was significant increasing the Practice in experimental group related 4th year Basic B.sc nursing students after giving demonstration. **Karl Pearson test** was applied to find out the correlation between knowledge and practice regarding initiation of breathing Pattern for early newborn among 4th year Basic B.sc nursing students in experimental and control group**.** n order to find out the correlation between pretest knowledge and practice in experimental and control group was computed **0.02** the table value significant is more than **0.7**. Here **0.02** is no correlation. In order to find out the correlation between post test knowledge and practice in experimental and control group was computed 0.19 the table value

## 5. Discussion

The lecture and demonstration is important method to understand the nursing students of concepts. Here there are several teaching –learning methods used in education, such as lecture, demonstration. Simulation, problem based learnig, lecture cum demonstration. (Basavanthappa, 2011& crookes et al., 2013) [(23)] delivering the lecture is by far the most traditional and frequently used method to impart knowledge to the students despire all the problems that are often attributed to it ( saleh et al., 2013)

The present study is "Effectiveness of Lecture And Demonstration On Knowledge And Practice Regarding Initiation Of Breathing Pattern For Early New Born Among

4th Year Basic B.Sc Nursing Students selected Nursing College."

A structured knowledge questionnaire was prepared to assess the knowledge score and checklist was prepared to assess the practice score. The pre test was taken. Lecture and demonstration was administered to all subjects. The post test was taken after administer Lecture and demonstration.

The findings of the study were discussed with reference to the objectives stated in chapter I and with the findings of the other sections. The findings of the study have been discussed with reference to the objective of the study and with findings of other studies.

**Findings related to General assessments of Knowledge in Experimental Group:** In pre test knowledge scores, in the experimental group no one of subjects were having good knowledge, 56.67% were having average knowledge and 43.33% in the poor knowledge category.

**Findings related to General assessments of Knowledge in Control Group:** In pre test knowledge scores, in the control group no one of subjects were having good knowledge, 60% were having average knowledge and 40% in the poor knowledge category.

**Findings related to General assessments of *Practice in Experimental Group:*** In pre test practice scores, in the experimental group no one of subjects were having good practice, 73.33% were having average practice and 26.67% in the poor practice category.

**Findings related to General assessments of Practice in Control Group:** In pre test practice scores, in the control group no one of subjects were having good practice, 60% were having average practice and 40% in the poor practice category.

**Findings related to Comparison of the Knowledge in Experimental vs Control:** The comparisons of the post test means of the knowledge of experimental & control group were done by the unpaired t test. The post test average score for experimental group was 18.50 with standard deviation of 3.20. The post test average score of control group was 12.07 with standard deviation of 2.9. The test statistics value of the unpaired t test was 8.16 with p value 0.000. Shows the significant difference in the post test knowledge.

**Findings related to Comparison of the Practice in Experimental vs Control:** The comparisons of the post test means of the practice of experimental & control group were done by the unpaired t test. The post test average score for experimental group was 17.93 with standard deviation of 2.94. The post test average score of control group was 11.97 with standard deviation of 2.09. The test statistics value of the unpaired t test was 9.07 with p value 0.000. Shows the significant difference in the post test practice

**Findings related to association of knowledge score in relation to demographic variables *No Significant Association:*** For the all demographic variables the p value of the association test with knowledge was more than

0.05.That means, the knowledge regarding initiation of breathing pattern for early new born among b.sc nursing students is independent of these demographic variables. Concludes that, there was no significant association of demographic variables with the knowledge.

**Findings related to association of practice score in relation to demographic variables** *No Significant Association:* For the all demographic variables the p value of the association test with practice was more than 0.05. That means, the practice regarding initiation of breathing pattern for early new born among b.sc nursing students is independent of these demographic variables.

Concludes that, there was no significant association of demographic variables with the practice.

## 6. Conclusion

Lecture and demonstration was effective on knowledge and practice of 4th year basic b.sc nursing students in selected nursing college. 4th year basic b.sc nursing students need to know about initiation of breathing pattern for early newborn procedures. The lecture and demonstration is important method to understand the nursing students of concepts. Here there are several teaching –learning methods used in education, such as lecture, demonstration. Simulation, problem based learnig, lecture cum demonstration. (Basavanthappa, 2011& crookes et al., 2013) [23] delivering the lecture is by far the most traditional and frequently used method to impart knowledge to the students despire all the problems that are often attributed to it ( saleh et al., 2013)

In this study, significant improvement in knowledge and practice regarding initiation of breathing pattern for early newborn is observed after imparting lecture and demonstration. Such lecture and demonstration will improve the knowledge and practice of 4th year basic b.sc nursing students.

**The following conclusion can be drawn from the study.**
Lecture and demonstration regarding initiation of breathing pattern for early newborn is effective in knowledge and practice level of 4th year basic b.sc nursing students.

## 7. Future Scope

- Similar studies can be carried out on a large scale to estimate the level of competency regarding initiation of breathing pattern for early new born among 4th year basic b.sc nursing students .
- Study can be conducted to evaluate the effectiveness of video assess teaching programmed on knowledge and practice Regarding initiation of breathing pattern for early new born among 4th year basic b.sc nursing students Formal education Programme should be conducted in other colleges and hospitals regarding initiation of breathing pattern for early new born.
- The study can be replicated on a large subject; and on various settings, so that findings can be generalized to a large population.

- Such studies can be carried out using other teaching strategies like planned teaching on initiation of breathing pattern in early newborn etc.
- Comparative surveys can be carried out to ascertain the level of competency in performing initiation of breathing pattern in early newborn in hospital.

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