

A Study to Evaluate the Effectiveness of Video Assisted Teaching on Knowledge of Newborn Resuscitation among Nursing Students in Selected Nursing Institutions of Dist Patiala, Punjab

Dalbir Kaur, Surbhi Sharma

Assistant Professor, Swift Institute of Nursing, Rajpura Patiala, Punjab, India

ABSTRACT

RESEARCH PROBLEM: A study to evaluate the effectiveness of video assisted teaching on knowledge of newborn resuscitation among nursing students in selected nursing institutions of Dist. Patiala, Punjab.

BACKGROUND OF THE STUDY: Newborn birth is a natural challenge; this is a transition from the intrauterine to extra uterine life. Majority of babies handle this transition well, and if they do not need any medical intervention for survival, but 5-10% of newborn needs some resuscitation. The interventions require may range from simple tactile stimulation to complex cardiac pulmonary resuscitation.

AIMS OF THE STUDY: To impart knowledge regarding newborn resuscitation among nursing students.

DESIGN: Quasi experimental non-randomized control group design.

METHODOLOGY: A quantitative approach with experimental research design was used for this study. The sample consisted of 100 B.SC (N) 3rd and 4th year at selected Colleges of Patiala, Punjab. The sample was chosen by using convenience sampling technique. VAT was administered and data was collected by using self- structured knowledge questionnaire.

RESULTS: The mean knowledge score of nursing students regarding newborn resuscitation in the control group was 54.8 % and 55.2%, in pre-test and post-test respectively. The mean knowledge score of B.Sc (N) 3rd and 4th students regarding newborn resuscitation in the experimental group was 54.67 % and 73.53 %. The computed 'Z' test value was 24.36 significant at 5% level.

CONCLUSION: The enhancement of knowledge score in the experimental group was 5.66 after the structured teaching programme and in the control group was 0.14. There was a significant association between year of persuing and previous percentage of academic qualification of students and the other demographic variables did not shown any significant association.

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KEYWORDS: Newborn resuscitation, VAT, Effectiveness

1. INTRODUCTION

“Every child that is born; it brings with it the hope that god is not yet disappointed with man”

- RABINDRANATH TAGORE

Birth of a newborn is a special moment of joy with lot of expectations. However the first minute after birth is full of anxious moments and rapid physiological adjustments. Most babies go through the transition

successfully as a matter of routine; 10% however newborn may need varying degrees of assistance. Opportunity lost to provide needed assistance at this time would be a crucial impediment for saving these babies.¹

Neonatal death is a global problem. It is a leading factor contributing in Perinatal and neonatal mortality

which reflects social, educational and economical standards of community. Its incidence is very high in developing countries like India where health facilities are restricted to urban area and only 21 percent is getting benefits². The causes of neonatal deaths are preterm birth, diarrhea, sepsis, pneumonia, congenital abnormalities, tetanus and asphyxia.² Among all birth asphyxia is a major cause of neonatal deaths.³

The first 28 days of life, referred to as the “neonatal period”, is the most crucial time periods for determining whether or not a newborn baby will survive and continue through his/her development. Neonatal mortality is a critical global health problem and accounts for having its largest share in the global under-five mortality rates. Newborn birth is a natural challenge; this is a transition from the intrauterine to extra uterine life. Majority of babies handle this transition well, and they do not need any medical intervention for survival, but 5-10% of newborn needs some resuscitation. The interventions require may range from simple tactile stimulation to complex cardiac pulmonary resuscitation.⁴

According to World Health Organization (WHO), Birth Asphyxia as failure to initiate and sustain breathing immediately after birth. It is the third major cause of newborn death after infections. Preterm births in developing countries accounts for an estimated 23% of the annual 4 million newborn deaths. WHO estimates that 120 million infants born in every year develop birth asphyxia in developing countries and require resuscitation. Based on a literature it is estimated that 24% - 61% of prenatal mortality is attributed to asphyxia. The cause of specific prenatal mortality rate associated with asphyxia is generally between 10 and 20 per 1000 births. Birth asphyxia generally refers to lack of oxygen close to the time of labour and delivery.⁵

As per WHO it is estimated in the 2005, among 4 million newborn deaths, 23% were directly caused by asphyxia and related complication. According to the latest estimates by WHO approximately 4 million babies die each year before they reach the age of 1 month. 90% of the peri-natal asphyxia and birth injuries contribute about 29% of these deaths. Most of the deliveries in developing countries take place at home, usually attended by untrained birth attendants.⁶

As per UNICEF the first 28 days of life- the newborn period- is the most vulnerable time for a child's survival. But in recent years newborn mortality is declining globally. The worldwide newborn mortality rate fell by 40 percent between 1990 to 2013 that is from 33 to 20 deaths per 1,000 live births. Over the same period, the number of newborn babies who died

within the first 28 days of life declined from 4.7 million to 2.8million.⁷

According to UNICEF, in 2013, almost 1 million newborns died on the day they were born, accounting for 16 per cent of all under-five deaths and more than a third of all newborn deaths. A total of 2 million newborns died within the first seven days after birth, representing 73 % of all newborn deaths. Between 1990 and 2013, 86 million newborn babies born worldwide died within their first 28days of life.⁸

India is one among ten countries, i.e China, Democratic republic of congo, Pakistan, Nigeria, Ethiopia, Bangladesh, Indonesia, Afghanistan, and Tanzania that account for more than 65%of all intrapatum related neonatal deaths. Despite the recognition of neonatal survival as a key to child survival, poor progress in neonatal survival in India poses concern regarding attainment of the fourth Millennium Development Goal (MDG) target.⁹

In newborns, the most common cause of cardiopulmonary arrest is respiratory failure caused by foetal distress, meconium-stained liquor, placental insufficiency, premature onset of labour, ante-partum haemorrhage, mal-presentation, operative delivery, cord prolapse, rhesus isoimmunisation and multiple gestations. Resuscitation must be performed if a neonate is unconscious and not breathing, by a trained healthcare professional within four to six minutes after cessation of breathing to prevent brain damage or death.¹⁰

Newborn resuscitation is a procedure to support and maintain breathing and circulation for a neonate who has stopped breathing or whose heart has stopped. Make sure the proper equipment is available. The baby should be in a warmer. The first step of neonatal resuscitation asks three questions to determine if the baby is ok: Is this a term gestation, is there good tone, and is the baby breathing or crying? Dry the baby with towels, position and clear the upper airway, stimulate with gentle rubbing or heel flicks. (In the premature infant, less than 28 weeks, do not towel dry as the skin is very fragile. Instead, maintain warmth by wrapping in plastic or placing the child in a plastic bag.) Make sure that the radiant warmer has been turned on, because the baby needs to be kept warm whether or not further resuscitation is required. After 30 seconds evaluate heart rate, Respiration, Color, Tone. If HR <100 or apneic → Bag valve mask at 30-60/min and apply an O₂ sat probe. Consider ECG monitoring for more accurate HR assessment. Start the resuscitation with room air rather than 100% oxygen. If isolated central cyanosis or laboured breathing → Position and clear the airway, provide

100% O₂, and apply the O₂ sat probe. CPAP is an option. After 60 seconds Re-evaluate HR, Respiration, Color, Tone. If HR between 60 and 100 → Continue BVM ventilation. If there is any difficulty with BVM ventilation place an Laryngeal mask airway or intubate If HR <60 → Start chest compressions (3:1 with respirations, 90 compression and 30 breaths per minute) and intubate. Change to 100% oxygen. This is the time to start on venous access, either an IV or an umbilical vein catheter. After 90 seconds Re-evaluate HR, Respiration, Color, Tone. If HR <60 → add epinephrine (0.01mg/kg = 0.1ml/kg of 1:10,000 iv, io, umbilical). Endotracheal epinephrine is a distant second choice (0.03mg/kg = 0.3ml/kg of 1:10,000 ETT) After 120 seconds Re-evaluate HR, Respiration, Color, Tone. If HR <60 → add a fluid bolus (NS 10ml/kg slow push over 5-10min) and assess for pneumothorax. Nurses play a vital role in the neonatal resuscitation and preventing from complications. Nursing personnel should work in all levels of care to prevent this life-threatening condition.¹¹

Therefore all the attendants must be competent in newborn resuscitation and must have the necessary equipment ready for the resuscitation of the newborn baby. Approximately resuscitation equipment is essential for optimal management of asphyxia; however, asphyxiated babies can be resuscitated without the use of equipment.¹²

A study was conducted to assess the Knowledge, attitude and practices (KAP) of community health center staff on birth asphyxia in Kolokani Mali. It was found that the prolonged labor (63.7 percent), the infection/malaria of mother (60.7 percent) and the Dystocic delivery (45.5 percent) were the mostly reported causes of birth asphyxia and also revealed that good practices as aspirating with a bulb (69.7 percent) and clearing upper ways with a finger covered with gauze (30.3 percent); doing the mouth to mouth (51.5 percent); stimulating the newborn (66.7 percent). The improvement of the neonatal mortality requires the training of the staff and the equipment of the centers in small simple materials of resuscitation.¹³

Data collected from tertiary neonatal intensive care units in India during a study showed that Apgar score < 7 at 1 minute (includes moderate and severe asphyxia) were documented in 9% of all intramural deliveries. 2.5% babies continued to have Apgar scores < 7 at 5 minutes of age. Bag and mask ventilation was used in 4.5% infants and less than 1% infants needed cardiac compressions and/or medications for resuscitation at birth. Perinatal asphyxia was responsible for 20% of all neonatal

deaths; manifestations of hypoxic-ischemic encephalopathy were seen in approximately 1.5% of all babies. The result showed that perinatal asphyxia was commonest cause of still births accounting for one-third of all such studies.¹⁴

Effective resuscitation of the newborn infant requires adequate training and preparation of staff involved in the care of women in labour. As poor cardio respiratory adaptation at birth cannot be predicted in majority of the cases all staff involved in the care during labour should be skilled in resuscitation of the newborn.¹⁵

NEED FOR THE STUDY

According to Global Health Observatory Data Repository Distribution the causes of deaths among children ages due to Birth asphyxia and birth trauma in India was 19.2% in 2013.¹⁶

Globally, the main causes of newborn deaths are preterm birth complications (35 per cent), intrapartum-related complications (complications during labour and delivery) (24 per cent), and sepsis (15 per cent). Together, these three causes account for almost three quarters of all newborn deaths.¹⁷

Globally, the newborn mortality rate is 5.1 million annual newborn deaths. Of these, five million annual newborn deaths (98% of the world's total) occur in developing countries. In other words, of 136 million babies born annually, around 10 million require assistance to breath. Each year 814,000 newborn deaths result from intra-partum related events in term babies and 1.03 million from complications of prematurity. Still no systematic assessment of mortality reduction or resuscitation has been done.¹⁸

The current state of newborn health in India is indeed dismal to state the least. Three newborn are dying every minute in India and every 4th baby born is low birth weight! India contributes 30% of the global burden of newborn deaths. In India, the number is estimated to be about 1 million, highest for any country. Current newborn mortality rate in India is 40/1000 live births accounting for almost two thirds of the infant deaths. Newborn Mortality Rate (NMR) shows a wide variation in different states being the lowest in Kerala(11.5) with highest rates seen in Chhattisgarh(51.1), Jharkhand(48.6), Uttar Pradesh(47.6) and Madhya Pradesh(44.9). Surveys in Karnataka, depicts a newborn mortality rate of 28.9. The World Health Organization (WHO) reports that between 4 and 9 million newborns have birth asphyxia, of whom an estimated 1.2 million die from birth asphyxia. Approximately 3.2 million stillbirths occur in the developing countries. Birth asphyxia

results from events in the ante-partum (50%), intra-partum (40%), and post-partum (10%) periods.¹⁹

A study was conducted to assess the impact of a newborn resuscitation programme on the incidence, management and outcome of birth asphyxia in 14 teaching hospitals in India. Two faculty members from each institution attended a newborn resuscitation certification course and afterwards trained staff in their respective hospitals. Each institution provided 3 months pre-intervention and 12 months post-intervention data. Introduction of the Newborn Resuscitation Programme significantly increased awareness and documentation of birth asphyxia, as judged by an increased incidence of asphyxia based on apnoea or gasping at 1 and 5 minutes ($p < 0.001$ and < 0.01 , respectively). A significant shift towards more rational resuscitation practices was indicated by a decline in the use of chest compression and medication ($p < 0.001$ for each) and an increase in the use of bag and mask ventilation ($p < 0.001$). Although overall newborn mortality did not decrease, asphyxia-related deaths declined significantly ($p < 0.01$).²⁰

In India (2009) 87 per/1000 live birth and in Tamilnadu 23% death occur during infant period. Karnataka 28.9% death occurs during newborn period due to asphyxia.²¹

Prospective evaluation of the resuscitation program in teaching hospitals has revealed the use of rational resuscitation practices and a significant decline in asphyxia related deaths. It is estimated that there would be a 6-42 percent reduction in all causes of neonatal mortality if programs implemented newborn resuscitation.²²

A cross sectional study in 36 hospitals of Brazilian state capitals to analyze the teaching of neonatal resuscitation offered to undergraduate nurses demonstrated that 23 of the nurses were undergraduates and at 8 hospitals students had clinical activities in the delivery room without specific training. The study expressed that formal neonatal resuscitation training is insufficient during nursing education.²³

The investigator experienced the need for newborn resuscitation education for nursing students at nursing college. Since nursing students are the future Nurses to provide care for the patients and newborn resuscitation skills are essential for all health care providers. The statistics have proved a threat to neonate especially in increasing the morbidity and mortality. Education in newborn resuscitation resuscitation, standard, knowledge and skills that is focused for the health care provider is essential. This means that equipment be immediately available in the

delivery room and nursery, but also personnel should be trained who are skillful in resuscitating newborn. Health care professionals must be capable of working effectively.¹⁶ Thus the investigator motivated it to undertake the present study.²⁴

STATEMENT OF PROBLEM

A study to evaluate the effectiveness of video assisted teaching on knowledge of newborn resuscitation among nursing students in selected nursing institutions of Dist. Patiala, Punjab.

AIM OF THE STUDY

To impart knowledge regarding newborn resuscitation among nursing students

OBJECTIVES OF THE STUDY:

1. To determine the pre-test and post-test knowledge regarding newborn resuscitation among nursing students in experimental and control group.
2. To evaluate the effectiveness of video assisted teaching regarding newborn resuscitation by comparing post-test knowledge scores in experimental and control group.
3. To determine the association of pre-test knowledge scores regarding newborn resuscitation among nursing students with selected demographic variables in experimental and control group.

OPERATIONAL DEFINITION:

1. **Effectiveness:** It refers to the extent to which the video assisted teaching has achieved the desired outcome as expressed in terms of gain in knowledge score regarding the newborn resuscitation.
2. **Video assisted Teaching:** It refers to a system of recording and reproducing moving audio visual images used to provide knowledge regarding newborn resuscitation to a group of nursing students.
3. **Knowledge:** It refers to correct responses from the nursing students on newborn resuscitation through a self-structured questionnaire.
4. **Nursing student:** It refers to an individual who is pursuing graduation in a nursing institution.
5. **Newborn Resuscitation:** It is refer to the basic emergency procedure for life support consisting of artificial respiration and cardiac massage to a newborn ranging from birth to 28 days of life.

RESEARCH HYPOTHESIS

H₁: The mean post-test knowledge score will be significantly higher than the pre-test knowledge score regarding newborn resuscitation among nursing students in experimental and control group.

H₂: There will be significant association of pre-test knowledge scores of nursing students with selected demographic variables in experimental and control group.

DELIMITATIONS:

The study was delimited to nursing students of B.Sc(N)3rd and 4th year students.

CONCEPTUAL FRAMEWORK

This study will be based on “General System Theory” by Ludwig Von Bertalanffy’s (1968). It consists of three phases- input, process/ throughput and output.

Conceptual Framework:

Conceptual framework is an abstract generalization that explains systematically the relationship among phenomena and helps to summarize existing knowledge into coherent system and explain the nature of relationship between variables.

Conceptual framework deals with abstractions (concepts) that are assembled by virtue of their relevance to a common theme. Conceptualization is a process of forming ideas which is utilized and forms conceptual framework for development of research design. It helps the researcher by giving direction to go about entire research process.

The present study aims at assessing the knowledge and evaluate the effectiveness of student nurses regarding newborn resuscitation. The framework of the present study was developed by investigation based on general system theory which consists of 4 major components like input, through put/ process, output and feedback.

General system theory was first introduced by Ludwig Von Bertalanffy’s in 1968. He defines a system as an organized whole unit that produces an effect or product when interdependent component parts interact with the environment. All living system is open system, which promote the exchange of matter, energy and information with other systems (sub systems) and environment (supra system). The exchange within open system and their supra-system is continuous. The dynamic balance within and between the system, the sub system and the supra system helps to create and maintain internal stability. The exchange in our part of the system creates

changes in other parts. The openness of human system made the investigator to assess the relationship among the factors that affect the person, which includes the influence of sub system and supra system.

Open system:

The student nurses constitute an open system that continuously interacts with the patients in their immediate environment.

Input:

Input refers to the information, energy or matter which enters the system. In this study the input information is the knowledge imparted through Video assisted teaching regarding Newborn resuscitation.

Throughput/ Process:

Throughput refers to the action needed to accomplish the desired task to achieve the same output. The student nurses use the input information through self-regulation to maintain the system’s equilibrium. They also update their knowledge regarding Newborn resuscitation.

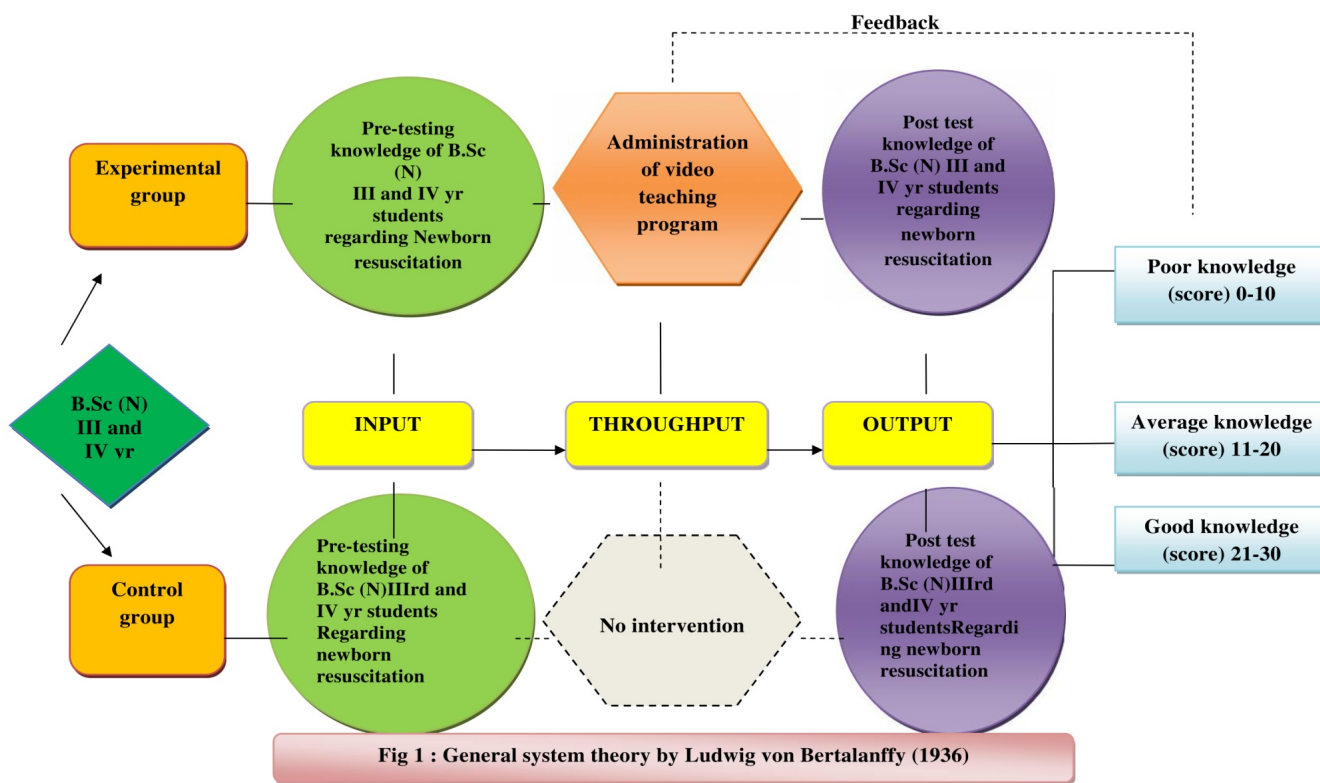
Output:

Output refers to the end result or product of the system. In this study it refers to the result of student nurses performance showing their knowledge level as adequate or inadequate based on the knowledge score. If knowledge level is found inadequate rectification can be done by strengthening the existing knowledge through continuous monitoring which is not under the preview of the study. Another output of the study is to conduct Video assisted teaching regarding Newborn resuscitation in order to improve the quality care.

Feedback:

It is the process whereby the output of the system is redirected to input of the same system. If the knowledge is found to be inadequate, the system input and throughout has to be re-evaluated, which is not included in the present study.

Summery: This chapter dealt with background of study, introduction, need for the study, statement of problem, aim of the study, objectives of the study, operational definition, research hypothesis, delimitations and conceptual framework.



2. REVIEW OF LITERATURE

Review of literature is a key step in research process. Review of literature refers to an extensive, exhaustive and systematic examination of publications relevant to the research project. Nursing research may be considered a continuing process in which knowledge gained from earlier studies is an integral part of research in general.

The review of literature for the present study is organized under the following sub-headings:

1. Literature related prevalence of asphyxia
2. Literature related to the knowledge of newborn resuscitation.
3. Literature related to effectiveness of video assisted teaching.

Literature related to prevalence of Asphyxia:

Baqi AH, et al (2014) conducted a study to assess the rates, timings and causes of newborn deaths and the burden of stillbirths in rural Uttar Pradesh (India) the results showed that there were 430 stillbirth reported, comprising 41% of all deaths in the sample. Of the 618 live births, 32% death were on the day of birth, 50% occurs during the first 3 days of life and 71% were during the first week. The primary cause of death of the first day of life (i.e day 0) were birth asphyxia (31%) and pre term birth (26%). The study concluded the stillbirth and deaths on the day of birth represent a large proportion of perinatal and neonatal deaths, highlighting and the urgent need to improve coverage with skilled birth attendants and to ensure access to emergency obstetric care. Health interventions to improve essential newborn care and care seeking behaviour are also needed.²⁵

Thornberg E, et al (2014) conducted a retrospective study on prevalence, clinical course and outcome of birth asphyxia in a swedish population. A total 227 newborns were included in a birth asphyxia group. The incidence of Apgar score <7 at 5 min. birth asphyxia 6.9, 5.4 per 1000 live birth newborn; 95% newborn resuscitated with bag and mask ventilation, compared, with 1 of 11 in whom resuscitation included adrenaline. The study highlights that there is increase the prevalence of birth asphyxia in newborn and the proper management of high risk cases can prevent further complications.²⁶

Asad Nauman Kiyani et al (2013) conducted a cross sectional study was, a total of 196 asphyxiated cases were selected through consecutive non-probability sampling technique from neonatal intensive care unit (NICU) of a tertiary care Military Hospital in Pakistan. Mode of delivery as a factor leading to birth asphyxia was found in 32.14% (n=63) cesarean section, 44.39% (n=87) spontaneous vertex delivery, and instrumental delivery in 23.47% (n= 46). Prolonged second stage of labor reported in 72% (n=141), 29.08% (n=57) had prolonged rupture of membranes, 7.65% (n=15) had meconium staining, 5.61% (n=11) had multiple births, 21.94% (n=43) had maternal fever, and 58.84% (n=113) had anemia at delivery. Birth asphyxia is a preventable problem and long term neurological sequelae almost untreatable. Early identification of high-risk cases with improved antenatal and perinatal care can further decrease such high mortality.²⁷

Anne CC Lee et al (2011) conducted a study to estimate the mortality effect of immediate newborn

assessment and stimulation, and basic resuscitation on neonatal deaths due to term intrapartum-related events or preterm birth, for facility and home births. A meta-analysis of three facility-based studies examined the effect of resuscitation training on intrapartum related newborn death; this estimate was used for the effect of facility-based basic newborn resuscitation. Delphi panel of 18 experts estimated that immediate newborn assessment and stimulation would reduce both intrapartum-related and preterm deaths by 10% facility-based resuscitation would prevent a further 10% of preterm deaths and community based resuscitation would prevent further 20% intrapartum-related and 5% of preterm deaths. The study concluded that in order to achieve maximal reduction in intrapartum-related newborn deaths an increasing investment in obstetric care and sustainability of immediate newborn care and basic newborn resuscitation is necessary.²⁸

Ensing S, et al (2010) Investigated trends in birth asphyxia and perinatal mortality in the Netherlands using a nationwide cohort study among women with a term singleton pregnancy. Multivariable analyses were used to adjust for confounding factors. The result of study concluded that the prevalence of birth asphyxia was 0.85% and severe asphyxia 0.16%. Simultaneously the referral rate from primary to secondary care during labour increased from 20% to 24% and the intervention rate for fetal distress from 5.9% to 7.7%.²⁹

London, H. et al (2010) conducted a study on simple measures could save millions of newborn” The study findings show that around 4 million babies in a year are still born and further 4 million die before a month old. The result showed that 80 percent of neonates are taking for resuscitation. The study concluded that the high death rate could be reduced by practices like keeping the baby warm and assuming that there are skilled birth attendants to carry out the resuscitation of newborn at delivery room which saves millions of newborns.³⁰

Sango H. et al (2010) concluded develop the management of birth asphyxia and to establish a community-based surveillance system of vital events in rural areas of Ouelessebouyou, Mali. Traditional birth attendants, female leaders of village associations and village health workers were trained to carry out communication activities designed to change behaviours in the management of birth asphyxia. The study has improved health facility-based delivery (from 80 to 93%) and the identification of birth asphyxia (11 to 12% new born babies have been resuscitated). As a result of training and supervising community actors, the quality of delivery was improved and neonatal mortality was reduced.³¹

Khalid A et al (2008) conducted a study on Ante- and intra-partum factors that predict increased need for newborn resuscitation. Over a 30-month period, the newborn resuscitation team (NRT) at the tertiary perinatal centre in St. Johns, Newfoundland and Labrador, prospectively recorded reasons for attending "at-risk" deliveries, and subsequent use of PPV-ETT, rates of low 1- and 5-min Apgar scores, and admission to newborn intensive care or death. Of 5691 deliveries, 3796 (66.7%) were attended by the NRT. Data were available for 3564 (94%) at-risk attendances, of which 780 (22%) required PPV-ETT. Significant ante-partum risk factors for PPV-ETT included multiple pregnancy <35 weeks, maternal infection, hypertension, and oligohydramnios; intra-partum factors were preterm delivery at <36 weeks, breech presentation, meconium-stained amniotic fluid (MSAF), non-reassuring fetal heart rate, emergency Caesarean section (EmCS), shoulder dystocia, and opiates in normal labour. The study concluded given the baseline risk (22%), factors that increase need for resuscitation in a tertiary centre may not alter the practice of the NRT attending all "at-risk" deliveries, with the exception of EICS.³²

Literature related to the knowledge of newborn resuscitation among nursing student:

Josphe, Teresa et al (2015) conducted on effectiveness of newborn resuscitation protocol for staff nurses of the selected hospitals in Mangalore. An evaluatory approach with one group pre-test post-test design was used on 50 staff nurses drawn through purposive sampling, with minimum two months of experience either in neonatal intensive care unit, pediatric intensive care unit, labour room. Results showed a highly significant difference ($t(49) = 36.412$, $p, 0.01$) between the mean post-test ($x_2 = 31.2$) and pre-test ($x_1 = 15.08$) knowledge score. The mean newborn resuscitation practice score of staff nurses in labour room after giving protocol was 31.1 and knowledge score was 32.3. There was a positive significant correlation ($r = 0.9757$) between the post-test knowledge and practice scores. There was significant association between pre-test knowledge scores and variables like total clinical experience ($\chi^2 = 4.5387$, $p < 0.05$). The opinionnaire showed 90% full acceptance of protocol. The study concluded that the protocol on newborn resuscitation has facilitated the staff nurses to learn more on theory and practical skills which was evident in post-test knowledge scores.³³

Florence Murila et al (2014) conducted a study to assess the knowledge of health care providers on newborn resuscitation in Kenya. Data were gathered among 192 health providers drawn from all countries of Kenya. The results shows that most medical

provider had heard of newborn resuscitation (85.4%) with only 23 receiving formal training. The average duration of newborn training was 3 hours with 50% having missed out on practical exposure. When asked on steps of resuscitation, only 68 (35.4%) of the participants scored above 85%. More than 70% of them considered their knowledge about newborn resuscitation was inadequate and blamed it on inadequate medical training programs. The study concluded that health providers, as the key personnel in the management of newborn resuscitation, in this survey seem to have inadequate training and knowledge on this subject. Increasing the duration and quality of formal training should be considered during the pre-service medical education to ensure acceptable newborn outcome.³⁴

Deepak Louis et al (2013) conducted a cross-sectional questionnaire based survey of healthcare personnel working in district hospital in Panchkula, Haryana study was conducted to assess the knowledge and practices regarding essential newborn care and resuscitation among healthcare providers, 2 community health centers, 5 primary health centers and 2 subcenters, each with at least 100 deliveries per year, was done. 58 medical personnel comprising of 27 staff nurses, 11 auxiliary nurse midwives, 15 doctors and 5 multipurpose workers were interviewed. Of them, 33 (57%) practiced holding the baby upside down after delivery. Early and exclusive breastfeeding including colostrum was advised to mothers of preterm babies. It was found that majority of healthcare personnel had good awareness about breastfeeding and clean practices while conducting delivery. In contrast, knowledge about newborn resuscitation was poor.³⁵

Lukasz Szarpak (2013) conducted to investigate the understanding of newborn resuscitation at birth among emergency medical personnel in 2012 among a group of 270 (doctors, nurses and paramedics) working in teams of emergency medical services in Poland. Results showed that 79% of respondents knew the time limits for the use of the term "newborn". All respondents had knowledge of the order of proceedings in cardiopulmonary resuscitation (76-100%) and the ratio of compressions to ventilation during resuscitation (76-100%). The group of nurses, compared to doctors and paramedics, knew very little about the following topics; energy shock (44% vs. 100% vs. 100%), tidal volume (24% vs. 92% vs. 78%), and the dose of sodium bicarbonate (32% vs. 96% vs. 87%). The study concluded that the best prepared professional groups regarding newborn resuscitation are doctors and paramedics. Incomplete knowledge observed among the nurses in this study suggests that intensive training in newborn

resuscitative procedures should be recommended for this professional group.³⁶

Remya Chidambaram et al (2013) conducted a study to assess the knowledge and practice of newborn resuscitation among staff nurses in Kerala, India. The result showed maximum of 22 (73.33%) subjects were in category of average knowledge and minimum of 4 (13.3%) staff nurses were in the category of below average and rest of 4 (13.3%) of staff nurses were in category above average score. Among 30 staff nurses minimum 6 (2%) belonged to the category of incorrect practices and maximum 14 (46%) belonged to the category of correct practices of resuscitation of newborn. Rest of the 10 (33.3%) belonged to the category of moderately correct practice. The study recommended that the knowledge of the respondents about appropriate action to be taken during newborn resuscitation is needed.³⁷

Serin Jyoti et al (2011) conducted a study to assess the expressed practices of Auxiliary nurse midwives (ANMs) regarding care of baby at birth including newborn resuscitation. Community based exploratory survey was conducted in selected sub centers of Ambala district in Haryana. Sampling technique was purposive and a semi-structured; Interview schedule was used to interview 31 ANM conducting delivery and rendering newborn care. Data was analyzed using descriptive statistics. Majority of ANMs (74%) held the babies upside down & 22.6% assessed for cry and only 19.4% assessed color to ascertain the life status of the babies. Cleaning & wrapping the baby in a warm towel was adopted correctly by majority of ANMs (90.32%). When baby was not crying, most of ANMs (70.96%) used unsafe practices of holding the baby upside down and slapping at the back and when the baby was not breathing; 29.02% ANMs gave mouth to mouth respiration. Some of them (35.48%) try to resuscitate the baby for 10-15 minutes; when unsuccessful they made a decision for referral to the nearest PHC/CHC/Hospital. Hence it was concluded that ANMs were having poor knowledge regarding newborn resuscitation.³⁸

Grzeskowiak M et al (2009) conducted a study on medical personnel in a pediatric hospital for assessment of CPR skills. The results revealed that medical personal do not possess adequate cardiopulmonary resuscitation skills. Participants usually positioned their hands or fingers correctly on the manikin's chest, but delivered slow and shallow compression, almost 50% of participants graded their skill as inadequate. He was concluded despite continuous education, the resuscitation skills of physician and nurses from pediatrics hospitals were far from satisfactory. The result indicated an urgent need for regular training.³⁹

Sidibe T et al (2009) was done a cross sectional survey to assess the knowledge and practices on birth asphyxia among matrons and nurse chief available at Mali, the time of survey. The result of the study showed that the staff had adequate knowledge on the main signs of birth asphyxia, such as bluish discoloration (69.7 percent), irregular or lack of breath (69.7 percent) & lack of cry (63.6 percent). They had (70 percent) of good practices of resuscitation. The study concluded that the improvement of newborn mortality requires the training of the staff and equipment of the centres.⁴⁰

Ogulesi T et al (2008) assessed knowledge of nurses in Western Nigeria about newborn resuscitation. Result showed that 179 nurses were interviewed, 72.6% had worked in labour room and the special care baby unit. Only 14.0% has attended newborn resuscitation training courses. Similarly, 31.8%, 53.1%, 58.1%, and 35.2% has access to radiant warmers, ambu bags, suction machine and oxygen delivery unit respectively. The knowledge of respondents was better for evaluation than for appropriate action (95.5% v.49.5%). The study concluded that the knowledge of the respondent during newborn resuscitation was poor.⁴¹

Literature related to effectiveness of video teaching:

Sheetal Udaykar¹, et al, (2015) conducted on effectiveness of Video Assisted Teaching Programme on Prevention of Swine Flu among Students. India had reported 937 cases and 218 deaths from swine flu in the year 2014. By mid-February 2015, the reported cases and deaths in 2015 had surpassed the previous numbers. Every year, there was a rise in number of cases and deaths during winter as temperature affects virus. Evaluative Research approach, Quasi Experimental (one group pre-test and post-test) research design was adopted. The sample consists of 40 students. Descriptive and inferential statistics like mean, median, standard deviation, paired 't' test, correlation, coefficient and chi-square was used for data analysis, average knowledge (13-22) and their frequency is 31 whereas 9 samples belong to good knowledge category (23-34) The post-test mean score of level of video assisted teaching program 26.13(SD±4.142) was higher than the pre-test mean score 13 (SD±3.258) the paired 't' value 14.591, So the video assisted teaching was highly effective in increasing knowledge of students regarding prevention of swine flu.⁴²

Sood Amita et. al (2014) carried out a study with an objective to evaluate the knowledge and skills of nursing personnel regarding concept of thermal protection of neonates before and after administration

of video teaching programme. Thirty nursing personnel working in the paediatric and allied units of selected hospital of Ambala, Haryana were selected. The experimental research approach with Pre-experimental: One group pre-test post-test research design was adopted. The mean post-test knowledge score of nursing personnel regarding concepts of thermal protection of neonates was 22.97 and the mean pre-test knowledge score was 13.83 with the mean difference of 9.14. The calculated 't' of 7.19 was found statistically significant at 0.05 level. 't' the mean post-test skills score and mean pre-test skills score of nursing personnel regarding assessment of temperature was 13.73 and 8.13 respectively with mean difference of 5.60. The calculated 't' of 7.27 was found to be statistically significant at 0.05 level. The data also reveals that the co-efficient of correlation between post-test knowledge score and post-test skills score was -0.05 suggesting a negligible negative correlation between post-test knowledge score and post-test skills score. The calculated 'r' value (-0.05) between the post-test knowledge score and assessment of temperature skills score is not significant at 0.05 level of significance.⁴³

Bookman et al (2010) conducted a study to assess midwives' baseline cognitive knowledge of evidence-based newborn resuscitation practices, and short- and long-term educational effects of teaching a newborn resuscitation program in a hospital setting in West Africa. A sample of 14 midwives included in the study. The percentage of items answered correctly on the written examination increased from 56% pre-training to 71% post training ($p < 0.01$). The percentage of items performed correctly on the practical evaluation skills increased from 58% pre-training to 81% ($p < 0.01$) The result shows that after receiving NRP training, newborn resuscitation knowledge and skills increased among midwives in a hospital in West Africa and were sustained over a 9-month period.⁴⁴

Jain A et al (2010) Conducted a study wason tele-education vs classroom training of gain in knowledge regarding neonatal resuscitation in New Delhi, India using a randomized controlled trail. In-service staff nurses were randomized to receive training by tele-education instruction (TI=26) or classroom teaching (CT =22). A standardized teaching module on neonatal resuscitation was used with the assistance of two neonatology instructors. Results showed that Pre-training mean knowledge scores were higher in TI group (8.3+/-1.7 vs 6.6+/-1.4, $P=0.004$). Training resulted in a significant and comparable gain in knowledge scores (4.2+/-2.2 vs 5.3+/-1.7; $P=0.06$). The post-training knowledge scores (TI: 12.5+/-1.7 vs CT: 12.0+/-1.7, $P=0.37$) were comparable in the two

groups. However, the post-training scores, adjusted for baseline knowledge scores, were statistically higher in the in-person group compared with the telemedicine group (knowledge: 12.46+/-0.03 vs 12.16+/-0.01, P=0.00).⁴⁵

Neelimarani G.R. (2009) conducted a study to assess the knowledge gain with video assisted teaching on kangaroo mother care among B.Sc. nursing III year students at NIMS College of nursing Hyderabad. A Pre experimental approach with single group pre-test and post-test was under taken. Total score and item wise analysis on kangaroo mother care among B.Sc. nursing III year students improved (35.22) with pre-test and post-test score. The 't' is 9.6429 at 29 degrees of freedom, which shows significant gain in knowledge of students, ensuring that the video teaching programme was highly effective.⁴⁶

Summery: This chapter dealt with, Review of literature, literature related prevalence of asphyxia, literature related to the knowledge of newborn resuscitation, literature related to effectiveness of video assisted teaching.

3. METHODOLOGY

This chapter deals with methodology adopted to evaluate the effectiveness of video assisted teaching on knowledge of newborn resuscitation among nursing students in selected nursing institutions of Dist. Patiala, Punjab.

The methodology is most important part of research as it is framework for conducting a study. It indicates the general pattern for organizing the procedures to gather valid and reliable data for an investigation.

This chapter includes:

- Research Approach
- Research Design
- Research Setting
- Target Population
- Sample size and Sampling techniques
- Inclusion and exclusion criteria
- Development and description of tool
- Validity of tool
- Ethical consideration
- Pilot study
- Reliability of the tool
- Data collection procedure
- Plan of data analysis
- Summary

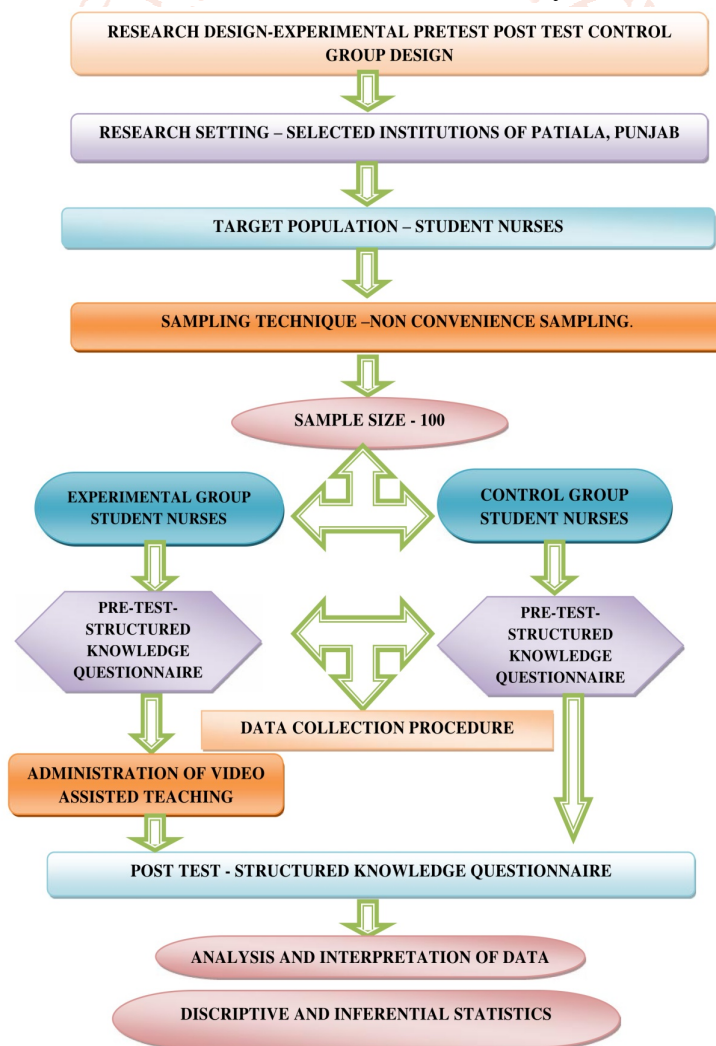


Fig.3: SCHEMATIC REPRESENTATION OF METHODOLOGY.

Research Approach

The appropriate choice of the research approach depends upon the purpose of the research study which has been undertaken in order to accomplish the objectives of the study; a Quasi experimental research approach is employed for this study to the knowledge of B.Sc Nursing 3rd and 4th year students.

Research Design

The research refers to plan or organization of scientific investigating the study. Designing a research study including a plan strategy that is accurate objectives and meaningful that will guide the collection and analysis of data, basically a central purpose of research design is to maximize the amount of control that an investigator has over the research situation and variables (Polit & Hungler 1999) The research design adopted for the present study is experimental pre-test post-test control group design.

In two group pre-test post-test design, the investigator introduced base measure to experimental group (E) before and after video assisted teaching (VAT) which is depicted as O₁ and O₂ and base measure is also introduced to control group (C) without exposure to video assisted teaching (VAT) as O₁ and O₂ respectively. In this study the base measure was structured knowledge questionnaire used to assess the effectiveness of video assisted teaching on knowledge regarding newborn resuscitation. The administration of video assisted teaching (Intervention) is depicted as X.

Group	Pretest	Intervention (X)	Posttest
E	O ₁	X	O ₂
C	O ₁	X ₀	O ₂

FIGURE 1: Symbolic representation of Research design of the study

Symbols Discriptions:

- O₁ - Pretest on experimental group and control group
- X - Video assisted teaching to experimental group
- O₂ - Post-test on experimental group and control group
- X₀ - No intervention to control group

Research setting

Setting is the physical location and condition in which data collection takes place in the study. The setting is chosen on the basis of feasibility in terms of availability of the subjects, who are the nursing students.

The study was conducted on nursing students (B.sc nursing 3rd and B.sc nursing 4th year) of Adarsh college of nursing, Patiala, and Swift college of nursing Gaggar sarai Rajpura, respectively both are pioneer institutes of nursing education. Many programmes of nursing education ANM, GNM, B.sc

nursing, Post basic nursing, M.sc nursing are running in these institutions.

Target population

The population of this study includes nursing students studying in Adarsh College of Nursing, Patiala and Swift college of nursing Gaggar sarai Rajpura

Sample size

Sampling is a process of selecting a portion of the population of the population to represent the entire population. The sample size of the study consists of 100 nursing students, who were available at the time of data collection and also who fulfill the inclusion criteria. The sample was equally divided in experimental (n=50) and control group (n=50)

Sampling technique

Non probability convenience sampling technique was used to select the nursing colleges as well as to select nursing students from nursing colleges.

Sampling criteria

Sampling criteria was the list of characteristics essential for inclusion or exclusion in the target population.

Inclusion criteria

- Nursing students who were studying in selected nursing institutions of Patiala
- Nursing students who were available at the time of data collection.
- Nursing students who were willing to participate in the study.
- Nursing students studying in B.Sc (N) 3rd and 4th year.

Exclusion criteria

- Those students who were absent on the day of data collection

SELECTION AND DEVELOPMENT OF TOOL

The instrument selected in research must be a vehicle that obtains best data for drawing conclusion, which is pertinent to the study. Tool is the device that a researcher uses to collect the data. The tool acts as a best instrument to assess and collect the data from the subjects of the study. In the present study, structured knowledge questionnaire was selected based on the objectives of the study as it was considered the most best and appropriate instrument to elicit the response from literate subjects. In the present study, 30 items were prepared for structured knowledge questionnaire. After extensive and systematic review of literature and discussion with the experts, the investigator developed the structured knowledge questionnaire. The main strengths behind developing the tool were:

- Related reviews of literature

- Based on the opinions and suggestions of experts
- Books, journals and Internet etc.

All of the above provided relevant data necessary to construct the tool to assess the knowledge regarding newborn resuscitation. A blue print was prepared prior to the construction of the questionnaire.

Preparation of blue print

A blue print on structured knowledge questionnaire on knowledge regarding newborn resuscitation, was prepared, which consisted of 2 sub areas. It depicted the distribution of items according to the content areas based on three domains: knowledge, comprehension and application, covering all aspects of knowledge regarding newborn resuscitation

- Knowledge has 5 items (17%)
- Comprehension has 5 items (17%)
- Application has 20 items (66%)

Domains	Items	Percentage (%)
Knowledge	5	17
Comprehension	5	17
Application	5	66

According to the content area in blue print, adequate number of items were prepared in each area. The prepared items were subjected to content validity, pre-testing and estimation of reliability.

Description of the tool

After a thorough review of literature related to the topic, a structured knowledge questionnaire was developed.

The structured knowledge questionnaire consists of two parts:

Part- I: It consist of selected socio demographic variables such as:-

Academic qualification, year of persuing, recent clinical posting, posting in NICU/Nursery, previous knowledge.

This section consists of 5 items.

Part-II: consist of structured knowledge Questionnaire on knowledge regarding newborn resuscitation. This section consists of 30 items on selected aspects on knowledge regarding newborn resuscitation. The selected aspects are:-

- Concept on newborn resuscitation, purposes, indications (4items).
- Concept on assessment, Apgar score, steps of resuscitation (7items)
- Procedure and medications (19items)

Each multiple choice type question has been given 4 options, out of which one is the correct response. Each item correct response a score of “one” and for every wrong response a “zero” was awarded.

Table 2: Criterion measures:

Level Of Knowledge	Score Range
Poor	0-10
Average	11-20
Good	21-30

Scoring: Maximum marks =30

Minimum marks =0 (zero)

Content validity of tool

Content validity of the was done by the expert's opinion regarding the relevance clarity, appropriateness of the items. As per their suggestions, needed amendments were made in the tool i.e. total knowledge questionnaire tool consists of 30 items. So the final tool was developed.

VALIDITY OF TOOL:

Content validity of the tool was ensured by submitting the tool along with the objectives, hypothesis, blue print, knowledge questionnaire, video assisted teaching and criteria checklist to nine experts comprising of 8 Nurse Educators in the field of Obstetrics and Gynaecology and 1 pediatrician. The experts were requested to judge items for relevance, clarity, appropriateness of the content area. The modifications were done in the tool based on expert’s suggestions and in consultation with the guide. The first draft tool consisted of 30 items and then based on experts suggestions and opinions 2 item were deleted modified and rearranged. The final draft was reframed with 30 items. Later the tool was edited by language expert. Their suggestions were taken into consideration and the modifications were incorporated in the final preparation of the structured knowledge questionnaire and observational checklist regarding newborn resuscitation.

Reliability of the tool:

The tool was administered to 10 nursing students 5 in each experimental and control group of selected nursing institution of Patiala and using the Split half method and Karl Pearson’s coefficient of correlation formula, the reliability of the tool with the help of their calculated knowledge score was established. Co-efficient of correlation of knowledge was found to be 0.8. Since the computed correlation of knowledge score was high, the tool was found to be reliable. The sample taken to check the reliability of the study was excluded in the pilot study and in the main study.

Karl Pearson’s Co-efficient of correlation

$$r = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2 \sum(y-\bar{y})^2}}$$

PILOT STUDY

Pilot study is a small-scale version or trial run done in preparation for a major study. It is developed with similar subjects, and same data collection and data

analysis technique. For the present study, the investigator selected the nursing institution of Patiala in the month of February, 2016.

Formal approval was obtained from the principal of Gain Sagar institute of nursing and Govt. College of nursing, for the pilot study. The investigator selected 10 samples from the group during the month of February, 2016 by Non probability convenience sampling technique to find out the practicability and feasibility of the tool. The time taken to complete the questionnaire was 15-20 minutes. Based on the information the investigator proceeded with the actual data collection from the main study. The subjects and institutions taken for the pilot study were excluded from the final study.

The purpose of the pilot study was to find out the feasibility of conducting the study. The Pilot study results showed that the settings, samples and tool were feasible enough to conduct the main research study.

PROCEDURE OF DATA COLLECTION

The data was collected during the month of April, 2016 in Adarsh college of nursing, Patiala, (Experimental group) and in the Swift institutions of nursing (Control group) The study was conducted as follows.

1. These nursing students were consulted personally by the investigator. They were explained about the purpose and the nature of the study. Their informed consent was obtained before enrolling them in the present study.
2. The investigator conducted pretest by personally handling over the knowledge assessment tool- a questionnaire to nursing students of B.Sc (III,IV) class regarding knowledge of Newborn resuscitation. Average time spent by the subjects for completing the pretest was approximately 15-20 minutes.
3. After the pretest, nursing students of experimental group were given video assisted teaching regarding Newborn resuscitation.
4. 7-10 days following the pretest, a posttest was re-administered with the same questionnaire to both groups.
5. The control group was given video assisted teaching after post-test so as to impart knowledge regarding Newborn resuscitation.

All respondents co-operated well with the investigator in both Pre-test and Post-test. It was found that the students appreciated video assisted teaching. The data collection procedure was terminated by thanking the respondents

Ethical consideration:

With the view of ethical consideration, the researcher discussed the purpose of study with Principal of the college of nursing. Written permission was obtained. Also B.Sc nursing 3rd and 4th year students were explained about the purpose of the study and written consent was taken from them. The B.Sc nursing 3rd and 4th year students were assured that the information given by them will be kept confidential and used only for research purpose.

Plan for data analysis:

After coding the collected data, it was transferred to the master coding sheet. Then both descriptive and inferential statistics were used for analysis of the data. The Knowledge of B.Sc Nursing 3rd and 4th year students before and after the structured teaching programme was analyzed in terms of frequency, percentage, mean, mean percentage and standard deviation. The comparison of Pre- test and Post- test Knowledge level and practice scores were determined by 'Z' test. Further, chi square was employed to measure the association of knowledge with selected demographic variables. The test results were subjected for testing at 0.05% level of probability. The outcome of the result interpreted using diagrams and graph. Details of the analysis and interpretations are given in the following chapter.

Summary: This chapter dealt with research approach, research design, research Setting, target Population, sample size and sampling techniques, inclusion and exclusion criteria, development and description of tool, validity of tool, ethical consideration, pilot study, reliability of the tool, data collection procedure and plan of data analysis.

4. DATA ANALYSIS & INTERPRETATION

The data themselves do not provide us with answer to our research questions. In order to meaningfully answer the research questions, the data must be presented and analyzed in same order, so that relationship can be described. Statistical analysis is a method of rendering quantitative information and elicits meaningful and intelligible form of research data. Analysis is the process of organizing and synthesizing data so as to answer to research questions and test hypotheses.

This chapter deals with analysis and interpretation of data collected from nursing students in selected nursing institutions of Distt. Patiala, Punjab, to evaluate the effectiveness of video assisted teaching on knowledge regarding newborn resuscitation. The data was collected from 100 Nursing students (50 Control group and 50 Experimental groups) was organized, tabulated, analyzed and interpreted by using descriptive and inferential statistics. The

analysis and interpretation was based on the data collected and the objectives of the study.

Statement of the problem:

A study to evaluate the effectiveness of video assisted teaching on knowledge of newborn resuscitation among nursing students in selected nursing institutions of Dist. Patiala, Punjab.

OBJECTIVES OF THE STUDY:

1. To determine the pre-test and post-test knowledge regarding newborn resuscitation among nursing students in experimental and control group.
2. To evaluate the effectiveness of video assisted teaching programme regarding newborn resuscitation by comparing post-test knowledge scores in experimental and control group.
3. To determine the association of pre-test knowledge scores regarding newborn resuscitation among nursing students with selected demographic variables in experimental and control group.

Organization and presentation of the data:

The data collected were edited, tabulated, interpreted and findings obtained were presented in the form of

SECTION A:

Table-1: Frequency and percentage distribution of nursing students according their demographic variables in both experimental and control group.

N=100

cc	Demographic Variables	Experimental Group n= 50		Control Group n= 50	
		(f)	%	(f)	%
1	Previous Percentage of Academic Qualification of Students.				
	Below 65%	21	42	15	30
	65%-70%	22	44	30	60
	Above 75%	7	14	5	10
2	Year of Perusing Study.				
	B.Sc Nursing 3rd year	34	68	37	74
	B.Sc Nursing 4 th year	16	32	13	26
3	Area of Recent Clinical Posting				
	Labour Room	26	52	27	54
	Neonatal ICU	19	38	18	36
	Nursery	5	10	5	10
4	Posting in NICU/Nursery.				
	Yes	35	70	35	70
	No	15	30	15	30
5	Previous knowledge Regarding the Newborn Resuscitation				
	Yes	21	42	16	32
	No	29	58	34	68

Table 1: depicts that with respect to Previous percentage of academic qualification of students, in the experimental group majority 22(44%) had academic percentage 65% -70% and in the control group majority 30 (60.0) had previous academic percentage 65%-70%.

With regard to year of pursuing study in experimental group maximum no. of students 34(68%) were in BSc (N) 3rd year in the control group maximum no. of students 37(74%) were in BSc (N) 3rd year followed by 16 (32%) in BSc (N) 3rd year respectively in both groups.

With respect to area recent clinical posting of the students, in the experimental group majority 26(52%) and in the control group majority 27(47%) were having recent posting in labour room followed by 38% & 36 % NICU in both experimental and control group respectively.

With regard to the posting in NICU/Nursery of the nursing students, in the experimental group majority 35(70%) and in control group majority 35(70%).

With respect to previous knowledge regarding the newborn resuscitation maximum no. of students 34 (68%) who had no previous knowledge in the control group followed by 29 (58%) in experimental group only 21(42%) and 16(32%) students were having knowledge regarding newborn resuscitation had no previous knowledge regarding newborn resuscitation and in experimental and control group respectively.

Hence it was concluded that maximum no of students 30(60%) were having 65-70% marks in control group followed by 37 (74%) BSc nursing 3rd year student in control group, 54(27%) in labour room, 35(70%) students who had posting in NICU in experimental group and 68(34%) having previous knowledge regarding newborn resuscitation in control group.

SECTION B:

Objective: 1. To determine the pre-test and post-test knowledge regarding newborn resuscitation among nursing students in experimental and control group.

Assessment of the Pre-test knowledge level of Bsc 3rd and 4th year nursing students (experimental group and control group) regarding newborn resuscitation.

Table-2: Percentage and frequency distribution of pretest knowledge levels of nursing students (experimental group and control group) regarding newborn resuscitation.

N=100

Sr. No	Pre- test level of knowledge category	Experimental group (n =50)		Control group (n=50)	
		(f)	%	(f)	%
1	Inadequate (0-10)	3	6	1	2
2	Moderately adequate (11-20)	43	86	49	98
3	Adequate (21- 30)	4	8	0	0

Maximum score = 30

Minimum score = 0

Table 2: depicts that in **experimental group**, the above table reveals that in the pretest majority 43 (86%) had Moderately knowledge on newborn resuscitation, followed by 4 (8%) respondents had Adequate knowledge and 3 (6%) had inadequate knowledge on newborn resuscitation.

With respect to **Control group**, the above table reveals that in the pre-test 49 (98%) had moderate knowledge on newborn resuscitation, followed by 1 (2%) respondents had inadequate knowledge and none them had adequate knowledge on newborn resuscitation. Hence it was concluded that majority of students 49(98%) having moderately adequate knowledge were in control group followed 43(86%) students with moderately adequate knowledge in experimental group.

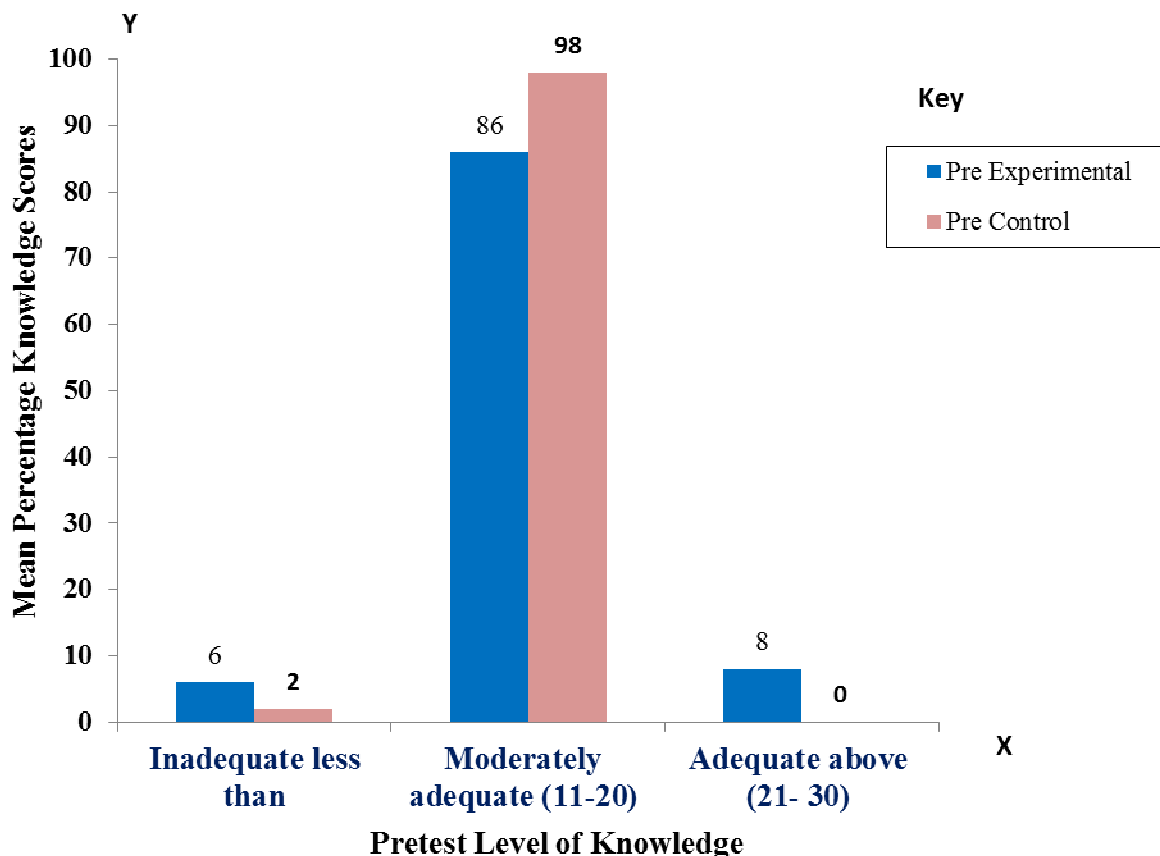


Fig 3: Bar graph showing the comparison of Percentage and frequency distribution of pre-test knowledge scores of Nursing students (experimental group and control group) regarding newborn resuscitation

Table-3: Shows the Percentage and frequency distribution of post- test knowledge levels of nursing students (experimental group and control group) regarding newborn resuscitation.

N=100

Sr. No	Post- test level of knowledge category	Experimental group (50)		Control group (50)	
		Frequency	Percentage	Frequency	Percentage
1	Inadequate (0-10)	0	0	2	4
2	Moderately adequate (11-20)	14	28	46	92
3	Adequate (21-30)	36	72	2	4

Maximum score = 30

Minimum score = 0

Table 3: With respect to **experimental group**, the above table reveals that in the post-test majority 36 (72%) had adequate knowledge on newborn resuscitation, followed by 14 (28%) respondents had Moderate knowledge and 0 (0%) inadequate knowledge on newborn resuscitation

With respect to **Control group**, the above table reveals that in the post-test majority 46 (92%) had moderate knowledge on newborn resuscitation, followed by 2 (4%) respondents had adequate knowledge and 2 (4%) adequate knowledge on newborn resuscitation

Thus, the **video assisted teaching** on knowledge regarding newborn resuscitation among nursing students experimental group was effective in enhancing the knowledge of the respondents in the post-test when compared to the pretest.

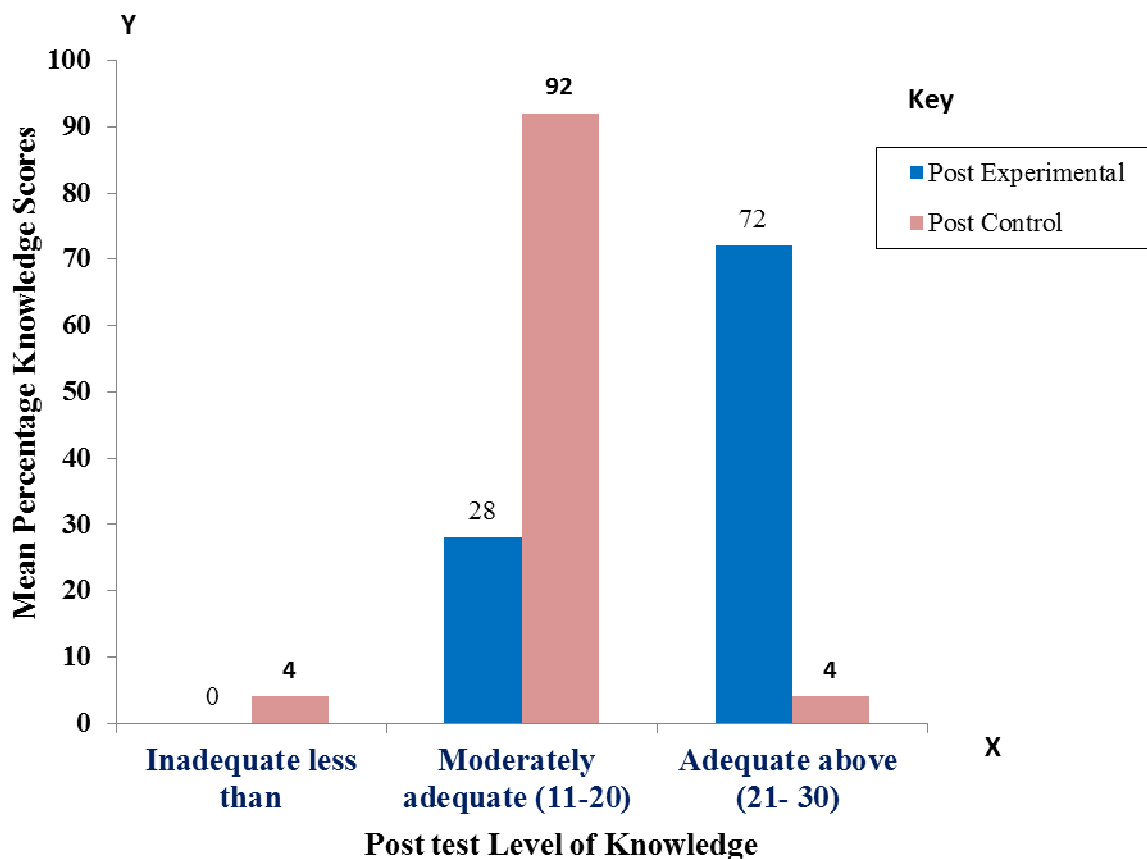


Fig 4: Bar graph showing the comparison of Percentage and frequency distribution of Post-test knowledge levels of nursing students (experimental group and control group) regarding new born resuscitation

Objective 2: To evaluate the effectiveness of video assisted teaching regarding newborn resuscitation by comparing post-test knowledge scores in experimental and control group.

Table-4 Assessment comparison pre-test and post-test of effectiveness of video assisted teaching regarding newborn resuscitation among Nursing students in the Experimental group and control group.

N= 100

Sl. No	Groups	Level of knowledge	Mean±SD	Mean %	Enhancement		Z-Test
					Mean+SD	Mean %	
1.	Experimental group	Pre-test	16.40±2.78	54.67	5.66+3.075	18.87	13.017* P <0.05
		Post-test	22.06±2.71	73.53			
2.	Control group	Pre-test	16.44±2.11	54.80	0.14+2.041	0.47	0.485 NS P > 0.05
		zPost-test					

Maximum score = 30

Minimum score = 0

Note: *- Significant at 5% level, i. e. (P< 0.05); NS- Not significant at 5% level, i. e. (P>0.05)

Table 4: With respect to **experimental group**, the above table depicts that, The ‘Z’ test for the level of knowledge in the experimental group was 13.017 i.e significant at 5% level. Thus it showed that **video assisted teaching** on knowledge regarding newborn resuscitation was effective in enhancing knowledge of Nursing students in the experimental group in the post-test when compared to pretest. The ‘Z’ test for the level of knowledge in the control group was 0.485 i.e which is not significant at 5% level. Hence: Researchable hypothesis H1 was accepted

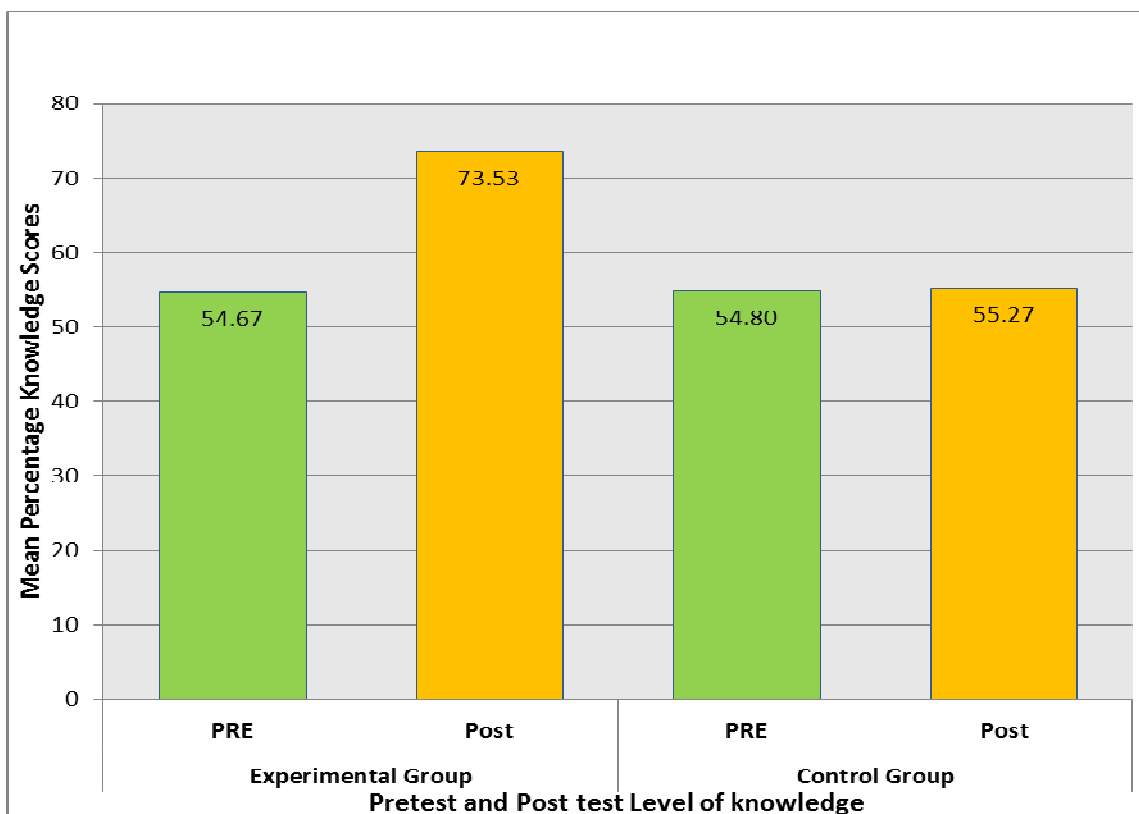


Fig 5: Bar graph showing the Comparison pre-test and post-test of effectiveness of video assisted teaching regarding newborn resuscitation among Nursing students in the Experimental group and control group.

Objective 3: To determine the association of pre-test knowledge scores regarding newborn resuscitation among nursing students with selected demographic variables in experimental and control group.

Table-5 Association between pre-test levels of knowledge with selected demographic variables of Nursing students in the Experimental group.

Sl. No	Demographic Variables	F				χ^2 value	
		Level of knowledge in experimental group					
		50	> Median (16)		≤ Median (15)		
		F	%	F	%		
1	Previous Percentage of Academic Qualification of Students.					1.969NS df=2	
	Below 65%	21	10	20	11		22
	65%-70%	22	6	12	16		32
	Above 75%	7	3	6	4	8	
2	Year of Pursuing Study.					0.455 ^{NS} df=1	
	B.Sc Nursing 3rd year	34	14	28	20		40
	B.Sc Nursing 4 th year	16	5	10	11		22
3	Area of Recent Clinical Posting					1.522NS df=2	
	Labour Room	26	9	18	17		34
	Neonatal ICU	19	9	18	10		20
	Nursery	5	1	2	4	8	
4	Posting in NICU/Nursery.					0.002 ^{NS} df=1	
	Yes	34	13	26	21		42
	No	16	6	12	10		20
5	Previous knowledge Regarding the Newborn Resuscitation					0.455 ^{NS} df=1 0.455 ^{NS}	
	Yes	16	5	10	11		22
	No	34	14	28	20		40

Note: *- Significant at 5% level, i. e. (P< 0.05); NS- Not significant at 5% level, i. e. (P>0.05)

Table 5: depicts that, the chi square test was used to assess the association between pre-test levels of knowledge of B.Sc (N) 3rd and 4th year students with the demographic variables in the experimental group.

The obtained chi square value for the Previous percentage of academic qualification of students is ($\chi^2=1.916$, $df=2$, NS), year of pursuing ($\chi^2=0.455$, $df=1$, NS), Area of recent clinical posting ($\chi^2=1.522$, $df=2$, NS) posting in NICU/Nursery ($\chi^2=0.002$, $df=1$, NS) previous knowledge regarding newborn resuscitation ($\chi^2=0.455$ $df=1$, NS) has not shown any significant association with pre-test knowledge of B.Sc (N) 3rd and 4th year students in the experimental group Hence: Researchable hypothesis H2 was partially accepted.

Table-6 Association between pre-test levels of knowledge with selected demographic variables of Nursing students in the Control group.

N= 50

Sl. No	Demographic Variables	F	Level of knowledge in Control group				χ^2 Value
		50	> Median (16)		≤Median(15)		
			F	%	F	%	
1	Previous Percentage of Academic Qualification of Students.						1.216 ^{NS} df=2
	Below 65%	15	9	18	6	12	
	65%-70%	30	16	32	14	28	
	Above 75%	5	3	6	2	4	
2	Year of Pursuing Study.						2.193 ^{NS} df=1
	B.Sc Nursing 3 rd year	37	23	46	14	28	
	B.Sc Nursing 4 th year	13	5	10	8	16	
3	Area of Recent Clinical Posting						2.742 ^{NS} df=2
	Labour Room	27	18	36	9	18	
	Neonatal ICU	18	8	16	10	20	
	Nursery	5	2	4	3	6	
4	Posting in NICU/Nursery.						0.835 ^{NS} df=1
	Yes	35	19	38	16	32	
	No	15	8	16	6	12	
5	Previous knowledge Regarding the Newborn Resuscitation						0.403 ^{NS} df=1
	Yes	16	10	20	6	12	
	No	34	18	36	16	32	

Note: *- Significant at 5% level, i. e. ($P < 0.05$); NS- Not significant at 5% level, i. e. ($P > 0.05$)

Table 6: depicts that, the chi square test was used to assess the association between pre-test levels of knowledge of B.Sc (N) 3rd and 4th year students with the demographic variables in the control group.

The obtained chi square value for the Previous percentage of academic qualification of students is ($\chi^2=1.216$, $df=2$, NS), year of pursuing ($\chi^2=2.193$, $df=1$, NS), Area of recent clinical posting ($\chi^2=2.742$, $df=2$, NS) posting in NICU/Nursery ($\chi^2=0.835$, $df=1$, NS) previous knowledge regarding newborn resuscitation ($\chi^2=0.403$ $df=1$, NS) has not shown any significant association with pre-test knowledge of B.Sc (N) 3rd and 4th year students in the control group.

Summary: This chapter dealt with data analysis & interpretation, statement of problem, objectives, organization and presentation of the data and figures and tables of data.

5. DISCUSSION

The discussion section of a study draws conclusion about the meaning and implications of the study. This section deals with discussion, major recommendations in accordance with objectives of the study. The main aim of the study is to impart knowledge regarding newborn resuscitation among B.Sc nursing 3rd and 4th year students at selected college of nursing, Patiala Punjab.

The findings of the study were based on its objectives and are discussed under the following headings:-

Objective 1: To determine the pre-test and post-test knowledge regarding newborn resuscitation among nursing students in experimental and control group.

H₁ -> The mean post-test knowledge score will be significantly higher than the pre-test knowledge score regarding neonatal resuscitation among nursing students in experimental and control group.

The findings of the study revealed that out of 50 B.Sc (N) 3rd and 4th year students, according to pre-test knowledge score regarding newborn resuscitation in the experimental group maximum 25 (50%) B.Sc (N) 3rd and 4th year students had inadequate knowledge regarding newborn resuscitation in the pretest majority 43 (86%) had Moderately knowledge on newborn resuscitation, followed by 4 (8%) respondents had Adequate knowledge and 3 (6%) had inadequate knowledge on newborn resuscitation. With respect to **Control group**, that in the pre-test 49 (98%) had moderate knowledge on newborn resuscitation, followed by 1 (2%) respondents had inadequate knowledge and none them had adequate knowledge on newborn resuscitation. The findings of the study revealed that out of 50 B.Sc (N) 3rd and 4th year students, according to post-test knowledge score regarding newborn resuscitation in the experimental group maximum 36 (72%) had adequate knowledge on newborn resuscitation, followed by 14 (28%) respondents had Moderate knowledge and 0 (0%) inadequate knowledge on newborn resuscitation, **Control group**, the above table reveals that in the post-test majority 46 (92%) had moderate knowledge on newborn resuscitation, followed by 2 (4%) respondents had adequate knowledge and 2 (4%) adequate knowledge on newborn resuscitation. The similar findings were observed in the study conducted by **Josphe, Teresa et al (2015)** The study concluded that the protocol on newborn resuscitation has facilitated the staff nurses to learn more on theory and practical skills which was evident in post-test knowledge scores.

Objective 2: To evaluate the effectiveness of video assisted teaching regarding newborn resuscitation by comparing post-test knowledge scores in experimental and control group.

H₂ -> There will be significant association of pre-test knowledge scores of nursing students with selected demographic variables in experimental and control group.

The findings of the study revealed that out of 50 B.Sc (N) 3rd and 4th year students, according to post-test knowledge score regarding newborn resuscitation in the experimental group 13.017 i.e significant at 5% level. Thus it showed that **video assisted teaching** on knowledge regarding newborn resuscitation was effective in enhancing knowledge of Nursing students in the experimental group in the post-test when compared to pretest. The 'Z' test for the level of knowledge in the control group was 0.485 i.e which is not significant at 5% level similar findings were observed in the study conducted by **Bookman et al (2010)** The result shows that after receiving NRP

training, newborn resuscitation knowledge and skills increased among midwives in a hospital in West Africa and were sustained over a 9-month period.

Objective 3: To determine the association of pre-test knowledge scores regarding newborn resuscitation among nursing students with selected demographic variables in experimental and control group.

Chi square value for the Previous percentage of academic qualification of students is ($\chi^2=1-216$, df=2, NS), year of persuing ($\chi^2=2.193$, df=1, NS), Area of recent clinical posting ($\chi^2=2.742$, df=2, NS) posting in NICU/Nursery ($\chi^2=0.835$, df=1, NS) previous knowledge regarding newborn resuscitation ($\chi^2=0.403$ df=1, NS) (NS has not shown any significant association with pre-test knowledge of B.Sc (N) 3rd and 4th year students in the control group

Summery: This chapter dealt with discussion, objectives and hypothesis.

6. SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter gives a brief account of the present study including conclusion drawn from the finding, limitations, and implications of the study and recommendations for future research.

SUMMARY OF THE STUDY:

The present study undertaken by the investigator for evaluating the effectiveness of video assisted teaching on newborn resuscitation among B.Sc nursing 3rd and 4th year students at selected college of nursing, Patiala, Punjab.

The study was quasi experimental in nature with a sample size of 100 B.Sc nursing 3rd and 4th year students (50 in control and 50 in experimental group). The B.Sc nursing 3rd and 4th year students were selected by simple random sampling technique. Pre-test was conducted for both control and experimental group, followed by administration of video assisted teaching only to experimental group and post- test was taken from both groups.

Analysis and interpretation was done according to objectives of the study. Descriptive and inferential statistics were used in data analysis. Bar diagrams were used to depict the findings. Mean, mean percentage, standard deviation was used for analyzing the distribution of the students according to their demographic variables. In inferential statistics chi-square, Z test were used.

A study to assess the effectiveness of video assisted teaching regarding knowledge of newborn resuscitation among B.SC (N) 3rd year 4th year students of selected colleges of Patiala (Punjab).The

purpose of the study is to assess the effectiveness of video assisted teaching on newborn resuscitation among B.Sc nursing 3rd and 4th year students at selected college of nursing, Patiala Punjab.

Objectives:

1. To determine the pre-test and post-test knowledge regarding newborn resuscitation among nursing students in experimental and control group.
2. To evaluate the effectiveness of video assisted teaching regarding newborn resuscitation by comparing post-test knowledge scores in experimental and control group.
3. To determine the association of pre-test knowledge scores regarding newborn resuscitation among nursing students with selected demographic variables in experimental and control group.

HYPOTHESIS

H₁ -> The mean post-test knowledge score will be significantly higher than the pre-test knowledge score regarding neonatal resuscitation among nursing students in experimental and control group.

H₂ -> There will be significant association of pre-test knowledge scores of nursing students with selected demographic variables in experimental and control group.

The independent variables included in this study were video assisted teaching on Knowledge regarding newborn resuscitation. The dependent variable was knowledge score of B.Sc Nursing 3rd and 4th year student's regarding newborn resuscitation.

The conceptual framework of this study was drawn on the basis of the concepts in General System Theory. This theory was developed by biologist Ludwig von Bertalanffy in 1936 and furthered by Ross Ashby. He felt the need for a theory to guide research in several disciplines. The function of any system is to convert or process energy, information, or materials into a product or outcome for use within the system, or outside of the system (the environment) or both. Indeed, if a system is to survive, it must save some of the outcome or product to maintain the system. General system theory emphasize that real systems are open to and interact with their environment, they acquire qualitatively new properties through emergence, self-regulating, capable of growth, development, adaptation and resulting in continual evolution.

The study was conducted among B.Sc Nursing 3rd and 4th year students at selected Adarsh college, Swift college, Rajindra college, Gian sagar colleges of Nursing, Patiala Punjab. The tool consists of two parts:

Part 1: sample demographic characteristics: This part consists of 5 items for obtaining personal information about the respondents i.e. Academic qualification, year of persuing, recent clinical posting, posting in NICU/Nursery, previous knowledge.

Part 2: Knowledge questionnaire: This part consists of a self -structured knowledge questionnaire was prepared to assess the knowledge of B.Sc Nursing 3rd and 4th year student's regarding infection control measures in labour room. It consists of total 30 questions. Each question has 4 options out of which one is correct answer. Each item has a score of one (1) mark for correct answer and zero (0) mark for incorrect answer.

Part 3: Video assisted teaching: This part consists of video assisted teaching on newborn resuscitation.

- The Content Validity was done by expert's opinion; the tool was validated from 5 experts did the validation of tool. The tool was found to be reliable and valid.
- The Reliability of tool was calculated by split half methods and it was 0.89.
- The Pilot study was done in the month of February, 2015 among 5 B.Sc Nursing 3rd year student's from Rajindra college, Gian sagar colleges of Nursing, Patiala Punjab, after taking permission from Principal of the college of nursing.
- The reliability of tool was found to be 0.89.
- The final study was conducted personally by investigator after taking the written consent of the principals of colleges of nursing. During the period of month of March; 2015. The investigator took 7 days to collect the data.
- The B.Sc Nursing 3rd and 4th year student's were assured that their reference will be kept confidential and the collected data would be used only for the research purpose. The investigator collected data by using self -structured questionnaire in both experimental and control group pre and post- test was taken.
- In experimental group video assisted teaching on newborn resuscitation was given to the B.Sc Nursing 3rd and 4th year student's. Before data collection written consent was obtained from the B.Sc Nursing 3rd and 4th year students.
- The data collected was tabulated, coded and analyzed by means of descriptive and inferential statistics, such as mean, mean percentage, standard deviation (SD), 'Z' test. The level of significance chosen was $p=0.05$; bar graphs were used to deficit the findings.

Major findings

Findings related to sample characteristics:

- Majority in the control group 30 (60.0) had previous academic percentage 65%-70%. and in the experimental group majority 22(44%) had academic percentage 65% -70% .
- Majority in the control group 37(74%). year of persuing should in experimental group majority 34(68%).
- Majority in the control group 27(47%). area recent clinical posting of the students, in the experimental group majority 26(52%).
- Majority in the control group 35(70%) the posting in NICU/Nursery of the nursing students, in the experimental group majority 35(70%).
- Majority in the control group 34 (68%) had previous knowledge regarding the newborn resuscitation and in the experimental group majority 29 (58%) had previous knowledge regarding newborn resuscitation.

Findings related to knowledge among B.Sc Nursing 3rd and 4th year student's regarding newborn resuscitation.

Majority of the B.Sc (N) 3rd and 4th year students, according to pretest knowledge score regarding newborn resuscitation in the experimental group followed by 43 (86%) respondents had Moderate knowledge and 4(8%) had adequate knowledge on newborn resuscitation, maximum 3 (6%) B.Sc (N) 3rd and 4th year students had inadequate knowledge on newborn resuscitation.

According to pre-test knowledge score in the control group regarding newborn resuscitation, had moderate knowledge on newborn resuscitation followed by 49 (98%) maximum 1 (2%) knowledge of newborn resuscitation.

Majority of the B.Sc (N) 3rd and 4th year students,, according to post- test knowledge score regarding newborn resuscitation in the control group 46 (92%) had Moderate knowledge on newborn resuscitation, followed by 2 (4%) respondents had adequate knowledge and 2 (4%) inadequate knowledge on newborn resuscitation. According to post- test knowledge score in the experimental group regarding newborn resuscitation, 36 (72%) had adequate knowledge on newborn resuscitation, followed by 14 (28%) respondents had moderate knowledge on newborn resuscitation. Thus, the **video assisted teaching** on knowledge of newborn resuscitation among B.Sc nursing 3rd and 4th year experimental group was effective in enhancing the knowledge of the respondents in the post-test when compared to the pretest.

In the experimental group, the pretest mean score was 16.40+2.78 with Mean % 54.67 and in the post-test mean score was 22.06+2.71 with Mean % 73.53. The 'Z' 'test for the level of knowledge in the experimental group was 13,017* i.e significant at 5% level. Thus it showed that Video assisted teaching on knowledge of newborn resuscitation was effective in enhancing knowledge of B.Sc Nursing students (experimental group) in the post-test when compared to pretest. In the Control group, the pretest mean score was 16.13+2.11 with Mean % 54.80 and in the post-test mean score was 16.58+2.3 Mean % 55.27. The 'Z' 'test for the level of knowledge in the control group was 0.485 i.e which is not significant at 5% level.

The obtained chi square value for the Previous percentage of academic qualification of students is ($\chi^2=1-216$, df=3, NS), year of persuing ($\chi^2 =2.193$, df=3, NS), Area of recent clinical posting ($\chi^2 =2.742$, df=1, NS) posting in NICU/Nursery ($\chi^2 =0.835$, df=1,NS) previous knowledge regarding newborn resuscitation ($\chi^2 =0.403$ df=1, NS) (NS has not shown any significant association with pre-test knowledge of B.Sc (N) 3rd and 4th year students in the control group.

CONCLUSION:

The video assisted teaching on knowledge of newborn resuscitation B.Sc nursing 3rd and 4th year experimental group was effective in enhancing the knowledge of the respondents in the post-test when compared to the pretest. The pretest mean score was 16.40+2.78 with Mean % 54.67 and in the post-test mean score was 22.06+2.71 with Mean % 71.75. The 'Z' 'test for the level of knowledge in the experimental group was 13.017 i.e significant at 5% level. Thus it showed that **video assisted teaching** on knowledge regarding newborn resuscitation was effective in enhancing knowledge of Nursing students in the experimental group in the post-test when compared to pretest. The 'Z' 'test for the level of knowledge in the control group was 0.485 i.e which is not significant at 5% level., the chi square test was used to assess the association between pre-test levels of knowledge of B.Sc (N) 3rd and 4th year students with the demographic variables in the experimental group. The obtained chi square value for the Previous percentage of academic qualification of students is ($\chi^2=1.969$, df=2, NS), year of persuing ($\chi^2 =0.455$, df=1, NS), Area of recent clinical posting ($\chi^2 =1.522$, df=2, NS) posting in NICU/Nursery ($\chi^2 =0.002$, df=1,NS) previous knowledge regarding newborn resuscitation ($\chi^2 =0.455$ df=1, NS) has not shown any significant association with pre-test knowledge of B.Sc (N) 3rd and 4th year students in the experimental group

NURSING IMPLICATIONS

Findings of the study have several implications, which are discussed under the following areas:-

1. Nursing education
2. Nursing administration
3. Nursing practice
4. Nursing research

Nursing Education

As a nurse educator, there are abundant opportunities for nursing professionals to educate the B.Sc (N) 3rd and 4th year students regarding newborn resuscitation.

- The study can be extended for educating the B.Sc (N) 3rd and 4th year students during the hospital and class room training period regarding newborn resuscitation.
- This study stresses the need for imparting education for the B.Sc (N) 3rd and 4th year students in order to teach and make aware them regarding newborn resuscitation

Nursing Practice

- It helps the health care professionals to gain an insight into the problems faced by the B.Sc (N) 3rd and 4th year students due to lack of knowledge on newborn resuscitation.
- Nursing professionals can educate B.Sc (N) 3rd and 4th year students by making use of every opportunity when they encounter B.Sc nursing students in the clinical practice.
- Nursing professionals can motivate B.Sc (N) 3rd and 4th year students regarding newborn resuscitation.
- Nursing interventional programs can be used as a teaching strategy in the classroom and hospital settings. Health education can be imparted through mass media, such as through radio, television, documentary films, pamphlets, leaflets and booklets etc.

Nursing Administration

- Research Nurse administrator is responsible for conducting continuing education programme for the student nurses. An in-service education programme regarding newborn resuscitation will update the knowledge of the student nurses and latest technologies
- As there is high turnover among staff nurses of Rajindra Hospital, Patiala, therefore the nursing administrators should periodically organize continuing in-service education programme for them to update their knowledge on newborn resuscitation.
- Clinical nursing audit should be encouraged to improve nursing practice and reduce mortality rate in babies suffering with birth asphyxia.

Nursing Research

- This study helps nurse researchers to conduct researches on various ways of newborn resuscitation.
- Plan for mandatory continuous awareness programme on newborn resuscitation.
- Research on other comparison between Graduate and diploma nursing students.
- The study will motivate the beginning researchers to conduct same study with different variables on a large scale. The public and private agencies should also encourage research in this field through materials and funds.

RECOMMENDATIONS

On the basis of the findings of the study following recommendations have been made.

- A similar study can be replicated on large sample to generalize the findings.
- A comparative study can be conducted between the Graduate and diploma nursing students.

LIMITATIONS:

1. The study was limited only to B.SC (N) 3rd and 4th year students.
2. The study was limited in the selected colleges of Patiala.

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