"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

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ABSRACT

The study was carried out to assess the effectiveness of self Instructional Module on knowledge regarding management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar, Odisha. It was conducted by Mrs. Sasmita Rout at Hi-Tech College of Nursing in partial fulfilment of the requirement for the degree of M.Sc. Nursing from Utkal University, Bhubaneswar, Odisha.

The objective of the study were to develop and administer a self instructional module on management of birth asphyxia, to find an association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variables.

The research approach used in this study is evaluating approach; research design is pre-experimental, one group pre-test post-test design; purposive sampling technique was used to select the sample. The sample size comprises of 60 staff nurses, working in Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha. Data was collected by using self-instructional module for assessing the knowledge regarding birth asphyxia. Self-Instructional module on birth asphyxia was developed and administered to the staff nurses. Analysis was done by using descriptive and inferential statistics.

The finding revealed that there was a significant difference between pre-test and post-test knowledge score of the staff nurses regarding birth asphyxia ,where the mean percentage of post-test knowledge score was 33.12% which is greater than the mean percentage of pre-test knowledge score that is 15.246%.

Thus , the study finding reveal a significant increase in the knowledge of staff nurses following the administration of instructional module as the calculated value of' t-test' 13.518 and found to be significant(p<0.0001).There was a significant association of the post test knowledge score with the selected demographic variables.

CHAPTER-1

INTRODUCTION

"The belief in charms for protecting newborn infants is very strong in Greece"

James Theodore Bent

The birth of baby is a wonderful yet very complex process. Many physical and emotional changes occur for mother and baby. A baby must make many physical adjustments of life outside the mother's body. The baby's body systems must work together in a new way. Sometimes a baby has difficulty making the transition to the world. There are many problems occurs during the intranatal and postnatal life of the newborns like diarrohea, tetanus, pneumonia, sepsis, preterm birth complication, birth asphyxia and congenital which may lead neonatal mortality. Being born prematurely having a difficult or birth defects can also make changes more challenging among these. Birth asphyxia is one of the major causes of neonatal mortality which require resuscitation immediately after the birth.**(DYER FAMILY,2011)**

Birth asphyxia is a serious clinical problem worldwide. **According to WHO**, birth asphyxia is defined as –The failure to initiate and sustain breathing at birth ''. Asphyxia is an insult to the fetus or newborn due to lack of perfusion to various organs. There are many reasons a baby may not able to take in enough oxygen before; during or just after birth .A mother may have medical conditions that can lower her oxygen levels. There may be problem with the placenta that prevents enough oxygen from circulating to the fetus; or the baby may be unable to breath after delivery.

According to **WHO** statistics on **2011** estimated 130 million, infants born each year worldwide, 4 million die in the first 28 days of life. Two thirds of world's neonatal deaths occur in just 10 countries mostly in ASIA, Pakistan is number 3 among these countries with an estimated 298.000 neonatal deaths annually and a reported neonatal mortality rates 49/1000 live birth Pakistan accounts for 7% of global neonatal deaths. Infection 36%, pre term birth 28%, and birth asphyxia 23% totally it accounts for 87% of neonatal deaths worldwide. since cause of neonatal death vary by country and which the availability and quality of health care understanding neonatal mortality in relation to these factors is crucial.

According to **National Neonatal Perinatal Database (NNPD)** 2000 data collected from 17 tertiary neonatal intensive care units in India. 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, perinatal asphyxia was the commonest cause of still births accounting for one-third of all such studies.

A study conducted on risk factors for perinatal asphyxia at Queen Elizabeth Central Hospital, Malawi among 100 mothers who delivered neonates with Apgar scores less than 6 at 5 minutes of birth. Study reveals that majority of the mothers were primigravidas (79%) and were within the normal childbearing ages of 20 to 34 years (61.2%). 65%of the mothers started antenatal care at 20 to28 weeks' gestation.65% of the mothers developed obstetric and medical problems that contributed to perinatal asphyxia, and of these, 12 mothers (18.5%) had more than one problem. The problems were premature labor and delivery (21%), preeclampsia (10%), Cephalo pelvic disproportion (8%), breech presentation (12%), prolonged second stage (11%), fetal distress (7%), cord prolapse (4%), ante partum hemorrhage (2%), prolonged rupture of membranes (1%), and malaria (1%). 46% had assisted deliveries, and these were caesarean section (18%), vacuum extraction (14%), breech delivery (12%), and forceps delivery (2%). 81% of the neonates were admitted to the neonatal nursery, and of these, 56 neonates (67.1%) developed complications, the most common was hypoxic ischemic

encephalopathy (38 neonates; 67.9%). 33% of the neonates died within 6 days post delivery. This study suggested that morbidity and mortality related to perinatal asphyxia can be reduced if staffs are knowledgeable and skilled in basic neonatal resuscitation and necessary equipment is available. **(MBWEZA E,2013)**

Inspite of major advances in monitoring technology and knowledge of fetal and perinatal medicine, Birth asphyxia is one of the significant causes of mortality and long term morbidity. Data from National Neonatal Perinatal Database suggests that perinatal asphyxia contributes to almost 20% of neonatal deaths in India. "Failure to initiate or sustain respiration after birth" has been defined as criteria for the diagnosis of asphyxia by WHO. Perinatal asphyxia results in hypoxic injury to various organs including kidneys, lungs and liver but the most serious effects are seen on the central nervous system. Good supportive care is essential in the first 48 hours after asphyxia to prevent ongoing brain injury in the penumbra region. Strict monitoring and prompt correction is needed for common problems including temperature maintenance, blood sugars, blood pressure and oxygenation.**(SDZAKPASU,2014)**

Asphyxia—insufficient oxygen supply—can lead to severe hypoxic ischaemic organ damage in newborns followed by a fatal outcome or severe life-long pathologies. Although birth asphyxia is not always distinguishable as the cause of perinatal and postnatal death, its pronounced impact for the mortality in newborns is well-documented, representing profound deficits in current healthcare systems worldwide. Secondary to birth asphyxia, a postnatal manifestation of hypoxic-ischaemic encephalopathy (HIE) is frequently observed being associated with either mild or severe organ damage in asphyxiated newborns, both leading to the development of chronic pathologies. The severe insults often cause neurodegenerative diseases, mental retardation and epilepsies. The mild insults lead to so-called "minimal brain-damage disorders" such as attention deficits and hyperactivity, but can also be associated with the development of schizophrenia and life-long functional psychotic syndromes. In some particular cases it is difficult to discriminate between mild and severe asphyxia: advanced methodology to improved diagnosis of birth asphyxia and prediction of individual short- and long-term outcomes obligatory needs to be developed. The task of individual prediction targeted prevention and personalised treatments before a manifestation of life-long chronic pathologies usually developed by asphyxiated newborns, should be given the extraordinary priority in paediatrics.

(HAFIZ MUHAMMAD ASLAM,2015)

According to the statistical data collected in years 2000–2002 by the Global Burden of Disease Study, worldwide 56 million deaths occur every year, from that 10.5 million, i.e. 20% represent children aged below 5 years. In this group, the leading cause of death is perinatal complications . Current statistical data considering epidemiology of prenatal, perinatal and postnatal pathologies are worldwide have not been systematically analysed; sometimes these data are even controversial as provided for single countries. Here we overview the most systematic studies as published to the issue. One the most reliable issue-related studies performed in the USA has demonstrated the perinatal morbidity comprising 60% of the child death cases giving a general idea of the biggest impact of perinatal complications in childhood and reflecting extensive issue-related problems in corresponding healthcare system as well as massive deficits in knowledge about and/or practical application of targeted prevention and effective treatment of neonatal, perinatal and postnatal pathologies.. Perinatal asphyxia (PA) or neonatal hypoxia- ischemia (HI) is a temporary interruption of oxygen availability that implies a risky metabolic challenge, even when the insult does not lead to a fatal outcome . Different clinical parameters have been used to both diagnose and predict the prognosis for PA, including non reassuring foetal heart rate patterns, prolonged labour, meconium-stained fluid, low 1-minute Apgar score, and mild to moderate acidemia, defined as arterial blood pH less than 7 or base excess greater than 12 mmol/L .

The guidelines of the **American Academy of Paediatrics (AAP)** and the American College of Obstetrics and Gynaecology (ACOG) consider all of the following criteria in diagnosing asphyxia: (i) profound metabolic or mixed acidemia (pH <7.00) in umbilical artery blood sample, if obtained, (ii) persistence of an Apgar score of 0–3 for longer than 5 min, (iii) neonatal neurologic sequelae (e.g., seizures, coma, hypotonia), and (iv) multiple organ involvement (e.g., kidney, lungs, liver, heart, intestines) . Clinically,

this type of brain injury is called Hypoxic-Ischemic Encephalopathy (HIE). The staging system proposed by Sarnat and Sarnat in 1976 is often useful in classifying the degree of encephalopathy. Mild (stage I), moderate (stage II), or severe (stage III) HIE is commonly diagnosed using physical examination, which evaluates the level of consciousness, neuromuscular control, tendon and complex reflexes, pupils, heart rate, bronchial and salivary secretions, gastrointestinal motility, presence or absence of myoclonus or seizures, electroencephalography findings, and autonomic function . However, these parameters have no predictive value for long-term neurologic injury after mild to moderate asphyxia .

PA is a major paediatric issue with few successful therapies to prevent neuronal damage. PA still occurs frequently when delivery is prolonged, despite improvements in perinatal care . The international incidence has been reported as 2–6/1,000 term births , reaching higher rates in developing countries . **(PAOLA MORALES,2016)**

 Globally, approximately 4 million deaths occur in neonates with 99% of them occurring in low and middle income countries . Birth asphyxia, defined as the failure to initiate and sustain breathing at birth by WHO, causes about a quarter of all the neonatal deaths . Approximately three – quarters of all neonatal deaths occur during the first week of life, with a million babies dying on the day they are born. Conspicuously, over half of these neonatal deaths occur within the first 24 h after birth . However, morbidity and mortality from birth asphyxia is mostly preventable and treatable . Effective resuscitation at birth can prevent a large proportion – approximately 30% - of these deaths. Furthermore, resuscitation may avert 5–10% of deaths due to complications of preterm birth.

Evidence around the world Maternal overweight and obesity during pregnancy increase the risks of severe maternal and infant complications . In Sweden, the proportion of women with overweight and obesity (body mass index [BMI] ≥ 25 kg/m2) in early pregnancy increased from 26% in 1992 to 38% in 2015 . In the US, 58% of women between 20 and 39 y of age were overweight or obese in 2014–2015 . As recently stated by WHO, the prevalence of maternal obesity must be reduced in order to improve maternal, fetal, and neonatal health .

 Maternal overweight and obesity increase the risks of severe neonatal complications, including major malformations, preterm birth, neonatal morbidities, and low Apgar score (0–6) . In term non-malformed infants, low Apgar score is commonly caused by birth asphyxia.

We have previously demonstrated a linear relationship between maternal BMI in early pregnancy and the risks of low Apgar scores at 5 and 10 min and birth-asphyxia-related neonatal morbidity in infants born at term . Furthermore, we have found that the risk of asphyxia-related infant mortality in term infants increases with the degree of maternal obesity . Risks being influenced by a change of exposure (i.e., maternal BMI) over time would be consistent with a causal relationship between maternal BMI and adverse outcomes of the offspring**.**

 (MARTINA PERSSON,2017)

The risk of death increases by 16% for every 30 s delay in initiating ventilation up to six minutes and every 6% for every minute of delay of applied bag and mask ventilation . Therefore, it is clear that the first minutes after birth are critical to reducing neonatal mortality. Evidence suggests that successful neonatal resuscitation by well – trained HCPs to provide appropriate and adequate resuscitation has the potential to prevent perinatal mortality caused by intrapartum related asphyxia for almost two million babies annually . Newborns with birth asphyxia can suffer from short- to long-term neurological complications. Severe asphyxia has been linked to cerebral palsy, mental retardation, epilepsy and learning disabilities . Therefore, there is need for urgent referral of complicated birth asphyxia cases to higher well specialized facilities in order to assist prevent some of these complications if anticipated early enough.

Neonatal mortality in Kenya is still high at 21 per 1000 live births with Kenya aiming to achieve the global SDG target of neonatal mortality to at least as low as 12 per 1000 live births by 2030 . Birth asphyxia is the leading cause of neonatal mortality contributing to 29% of the deaths in the country . The ministry of health (Kenya) recognizes the importance of neonatal resuscitation (NR) as part of the basic emergency obstetric and newborn care (BEmONC) from level 2 health facilities. National guidelines in the form of protocols have been developed and reviewed over time to standardize the performance of NR for newborns with birth asphyxia .

(DUNCAN N.SHIKUKU,2018)

Perinatal asphyxia is a significant cause of neonatal mortality and neurological complications (1). Although the majority of these disorders are transient, the long-term consequences of asphyxia may affect the central nervous system (CNS), which can ultimately lead to cerebral palsy, epilepsy, and learning disabilities .

There is considerable controversy over the definition and diagnosis of asphyxia. Apgar score, arterial blood gas, and signs of hypoxic-ischemic encephalopathy (HIE) are among the current criteria for the diagnosis of severe asphyxia. However, there is no correlation between patients' prognosis and the diagnostic criteria for asphyxia. About 25% of surviving asphyxiated newborns is likely to present with neurological problems. Annually, 4,000,000 babies are born with asphyxia, of whom 800,000 die and 800,000 suffer from the associated complications .

The incidence of asphyxia is 1 - 6 per 1000 births in developed countries and 5 - 10 per 1000 births in developing countries . According to statistics by world health organization (WHO), in developing countries 3% of infants (3.6 million people) suffer from moderate to severe asphyxia, of whom 23% (840,000) die, and almost the same number suffer from the associated consequences . Examination of the causes of neonatal mortality in Bushehr revealed that 22% of deaths are due to perinatal asphyxia .

Apgar score can be helpful in identifying newborns with fetal distress, intrauterine asphyxia, airway obstruction, CNS depression, and impaired airways. However, low Apgar score does not necessarily indicate fetal asphyxia, since other factors (e.g. prematurity, use of narcotics and sedatives) are also associated with reduced Apgar scores. Thus, Apgar score is not a predictive factor for consequent cerebral palsy in infants .

(HASSAN BOSKABADI, 2015)

<u>NEED FOR THE STUDY</u>

"All the evidence that we have indicated that it is reasonable to assume in practically every human being and certainly in almost every newborn baby. That there is an active will toward health an impulse towards growth or towards actualization".

-Abraham Maslow.

Birth asphyxia is a condition of inadequate supply of oxygen to the baby before during or just after birth. It results from multiple, maternal or neonatal factors. Birth asphyxia occurs worldwide and remains a serious cause of morbidity of the newborn. Its incidence and associated squeal have remained high in the developing world with an attendant high mortality as compared to more affluent societies or the developed world. Birth asphyxia is the fifth largest cause of neonatal death. Birth asphyxia accounts for an estimated 0.92 million neonatal deaths annually and is associated with another 1.1 million intrapartum stillbirths, as well as an unknown burden of long- term neurological disability. Perinatal asphyxia is an insult to the fetus or the newborn due to lack of oxygen (hypoxia) and /or a lack of perfusion (ischemia) to various organs. The common denominator of hypoxic ischemic injury is deprivation of the supply of oxygen to the centre nervous system. An oxygen deficit may be incurred by either hypoxemia or ischemia. Hypoxemia is defined as a diminished oxygen content of the blood and ischemia is characterized by reduced perfusion to a particular tissue; generally the two tend to occur simultaneously or in sequence. Asphyxia is an impairment of gas

exchange that results not only in the deficit of oxygen in blood but also an excess of carbon dioxide causing acidosis. The acidosis further leads to hypotension and ischemia culminating in hypoxic-ischemic injury. The brain is especially vulnerable to damage by hypoxia and ischemia because it has one of the highest oxygen requirements and base line blood flow than any other organs in a term fetus.

Birth asphyxia is a dangerous situation and if it is not managed correctly and promptly can be responsible for brain death, cardiac, lungs and kidneys failure and even death can occur. Neonatal intensive care unit (NICU) is a highly technical specialized unit in a hospital that provide medical/nursing care and technologies support to sick and high risk infants and premature even emergency like birth asphyxia. The common cause of neonatal mortality in each country are asphyxia, prematurity & low birth weight, infections like pneumonia and gastroenteritis and verity of surgical problems. Taking into consideration the fact that the neonatal intensive care unit (NICU) is more expensive that any health care system can provide.

Nursing constitutes a major role among team members in caring the neonates, with growing demand for quality care, nurses need to be oriented to quality care concept. The nurses who work in NICU require a high level of knowledge about the physiological changes that occurs in newborn as well as keen assessment skills to detect subtle changes in the newborn. The nurses must be able to communicate effectively with family members and members of the entire interdisciplinary NICU team. This will enable quality care which increase likelihood of newborns survival and promote optimal quality care.

A descriptive survey conducted on birth asphyxia status that programali, financial, knowledge and human responses are prevalent in a setting where birth asphyxia is more common. According to a research survey of health system, gaps and priorities birth asphyxia reflect cross cutting programmatic, financial, knowledge and human resources constraints in a setting where birth asphyxia is more common. More specific national goals to reduce neonatal mortality are necessary to meet Millennium Development Goal 4, and should focus attention, resources and principal causes of mortality such as birth asphyxia.

Neonatal mortality and morbidity are increasing day by day. In India mortality rate is still high compared to developed countries. Birth asphyxia is the third largest cause of death after infections and preterm births. As birth asphyxia is one of the causes of neonatal death, many of the staff nurses are unaware or without much knowledge & skill in resuscitation of the asphyxiated babies. Even though birth asphyxia is one of the leading causes of neonatal mortality, many of the nurses are announce, or unskilled in resuscitation of the asphyxiated babies.

The management of birth asphyxia consists of supportive care to maintain temperature, perfusion, ventilation and a normal metabolic state including glucose, calcium and acid-base balance. Early detection by clinical and biochemical monitoring and prompt management of complications must be done to prevent extension of cerebral injury. In view of the above reasons the investigator is interested to take up this problem to assess the effectiveness of self instructional module on knowledge regarding management of birth asphyxia among staff nurses working in hi-tech medical college & hospital, Bhubaneswar.

The initial few minutes after birth are full of anxious moments and rapid physiological adjustments. Most of the babies (90%) make the transition from intrauterine to extrauterine life without difficulty, 10% however may need varying degree of assistance to begin breathing at birth.

Interruption in this sequence of transition leads to oxygen deprivation leading further to depressed baby. Birth asphyxia or Perinatal asphyxia refers to an impairment of the normal exchange of respiratory gases during parturition, and the ensuing adverse effects on the fetus. It is an important cause of fresh stillbirth and early neonatal death.

The National Neonatology Forum of India has proposed that "Gasping and ineffective breathing or lack of breathing at 1-minute" should be designated as birth asphyxia. which is consistent with the definition given by WHO as the "Failure to initiate and sustain breathing at birth." Birth asphyxia is an important cause of neonatal morbidity and mortality.

It has varying effects on the neonatal brain depending upon the gestational age of the baby and the severity and time of onset of the asphyxiating event(s), which can occur at any point in the infant's antepartum, intrapartum and postpartum life. Although, Hypoxic-Ischemic Encephalopathy (HIE) is the hallmark of severe asphyxia, such cases can often exhibit multisystem failure. Of the 130 million new-born infants born each year globally, about 4 million die in the first 4 weeks of life- the neonatal period. Most of the neonatal deaths (99%) arise in low- and middle income countries and over half occur at home, where the bulk of deliveries take place.

(**VISHNU BHAT B,2013**)

In the TOBY trial, 325 infants with a gestational age of at least 36 weeks who had moderate-to-severe asphyxial encephalopathy and abnormal results on amplitude-integrated electroencephalography (EEG) were randomly assigned within 6 hours after birth to receive standard care alone (control) or standard care with hypothermia to a rectal temperature of 33 to 34°C for 72 hours, followed by slow rewarming. Hypothermia was maintained by nursing the infant on a cooling blanket. The children were enrolled in the study from 2002 to 2006, and follow-up at 6 to 7 years was conducted from 2009 to 2013.

The National Research Ethics Service in the United Kingdom and the relevant ethics review board at each of the institutions outside the United Kingdom approved the TOBY, and an independent trial steering committee oversaw the study. Written informed consent was obtained from the children's parents.

A letter invitation together with an information leaflet and consent form, was mailed to the parents of surviving children. After parental consent had been obtained, a psychologist and a pediatrician, both of whom were unaware of the study-group assignments, performed the assessments, usually at the child's school. The assessment comprised a neurologic examination and a neuropsychological assessment encompassing sensory function, cognition, memory, attention, and executive function, all areas that are likely to be affected by perinatal asphyxia. Questionnaire responses were requested from parents and teachers.

 (**DENIS AZZOPARDI,2014**).

The National Neonatology Forum (NNF) of India has defined asphyxia as gasping or ineffective breathing or lack of breathing at one minute of life. Despite major advances in monitoring technology and knowledge of fetal and neonatal pathologies, perinatal asphyxia remains a serious condition causing significant mortality and longterm morbidity. Hypoxic-ischemic encephalopathy (HIE) is characterized by clinical and laboratory evidence of acute or subacute brain injury due to asphyxia. Most often, the exact timing and underlying cause remain unknown. Despite intensive efforts, HIE remains an important problem. The risk of death or severe handicap in survivors of moderate or severe HIE is about 60%. Even children without motor impairments have low cognitive scores on long term follow-up, poor scholastic attainment, and often need special educational support . It is one of the top 20 leading causes of burden of disease in all age groups (in terms of disability life adjusted years). According to World Health Organizatio(WHO), birth asphyxia causes 23% of all neonatal deaths worldwide and is the fifth largest cause of under five mortality among children (8%). It accounts for 920,000 neonatal deaths every year and is associated with another 1.1 million intrapartum stillbirths. It is exceptionally imperative to know its risk factors especially in resource restricted settings like India and hence this study.

(BAHUBALI GANE 2016)

Birth asphyxia was identified in 135 out of 340 newborns (39.7%). Associated factors included gravida, meconium-stained amniotic fluid, normal duration of labor, normal duration of ROM, vaginal delivery, Apgar score of ≤5 at 5 minutes, respiratory ventilation and cardiac massage and normal birth weight (2500-3999gr). Two-thirds were born via vaginal birth (66.5%), and nearly half (47.3%) had BA. One-third was born via cesarean (33.5%), and a quarter (24.6%)had BA. Other BA outcomes included prolonged hospitalization beyond the neonatal period at 75% compared to non asphyxiated babies (25%). The mean days of NICU stay was 7.6 for BA while it was 5.3 for non-asphyxiated babies; early seizures (52.6%) and high specific mortality (87%).

IUGR may be due to the condition in the foetal environment (e.g. chronic deficiency in oxygen or nutrition or both) or to problem intrinsic to foetus. Also, foetus suffering from utero-placental insufficiency typically has intermittent hypoxic episode induced during episode of uterine contraction. It is important to identify constitutionally normal foetus; whose growth is impaired so that appropriate care can be given to prevent the risk of mortality before and during labour. They need preterm intervention for better survival rate. The biophysical sign of acute asphyxia may be loss of breathing movement, heart rate reactivity. So we can prevent only further asphyxia by giving a good environment in already compromised foetus. Identification of such an asphyxiated foetus can be possible only by early assessing the foetus using the Biophysical profile score or Doppler velocity ratio of the umbilical artery or middle cerebral artery, because emergency delivery may improve outcome. But our limitation is Doppler not available everywhere, so BPP is our only mode of detection of antenatal asphyxia after the clinicaldiagnosis.

So, by this study physician can alert about the outcomes, especially perinatal asphyxia where other investigations as Doppler velocimetry is not available, and make plan to progress the pregnancy or deliver the baby.

STATEMENT OF THE PROBLEM:

"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

OBJECTIVES OF THE STUDY:

1. To assess the existing level of knowledge regarding management of birth asphyxia among staff nurses.
2. To develop and administer a Self Instructional Module on management of birth asphyxia.
3. To evaluate the effectiveness of Self Instructional Module regarding management of birth asphyxia among staff nurses by post test knowledge score.
4. To find an association between the pretest knowledge scores regarding management of birth asphyxia among staff nurses with selected demographic variable such as age, sex, religion, marital status, type of family, education, place of residences,

HYPOTHESIS:

- H_1- The mean post test knowledge scores regarding management of birth asphyxia among staff nurses is significantly higher than the mean pretest knowledge scores at 0.05 and 0.0 1 level of significance.
- H_2- There is significant association between the mean pretest knowledge scores regarding the management of birth asphyxia among staff nurses with selected socio-demographic variables such as age, sex, religion, marital status, type of family, education, place of residences, year of experience in maternity hospital, sources of information and number of newborn resuscitation performed at 0.05 and 0.01 level of significance.

ASSUMPTIONS:

➢ The staff nurses working in Hi-Tech Hospital may have some Knowledge regarding management of birth asphyxia

➢ Self Instructional module may enhance the knowledge of staff nurses regarding management of birth asphyxia

DELIMITATIONS:

The study is limited to 60 staff nurses those who are working in Hi-Tech medical college & Hospital, Bhubaneswar.

OPERATIONAL DEFINITIONS:

- **Assess:** - It is an organized, systematic and continuous process of collecting data from staff nurses regarding management of birth asphyxia.

- **Effectiveness: -** It refers to an extent to which Self Instructional Module on birth asphyxia is effective in improving the knowledge regarding management of birth asphyxia among staff nurses.

- **Knowledge: -** It refers to the correct responses of staff nurses to the structured knowledge questionnaire regarding management of birth asphyxia.

- **Self Instructional Module: -** It refers to the systematically developed health educational material designed for staff nurses to provide information about birth asphyxia.

- **Staff nurses: -** It refers to a professionally individual who are qualified as a nurse (GNM/B.Sc. Nursing/P.B.B. Sc. Nursing/M.sc (Nursing) and registered in Nursing Council and working in Hi-tech medical college & Hospital, Bhubaneswar.

- **Management: -** It refers to the activities which carried out by staff nurses of Hi-Tech Medical College & Hospital in relation to control of birth asphyxia such as newborn resuscitation.

- **Birth Asphyxia:** - It refers to the baby failure to initiate and sustain breathing at birth.

- **Hi-Tech Medical College & Hospital**: - It refer to the hospitals of where the Antenatal, Intranatal, Neonatal, Postnatal and NICU services are provided.

CONCEPTUAL FRAMEWORK:

Conceptual framework acts as building block for the research study. The overall purpose of framework is to make the scientific finding, meaningful and generalized. It provides a certain framework of reference for clinical practice, education and research. Framework can guide the researcher's undertaking of not only ‗what' of natural phenomena but also ‗why' of their occurrence. They also give direction for relevant questions to practical problems. Conceptual framework is defined as the frame of reference that serves to guide a research study and is developed from theories, findings from a variety of other research studies, and the authors personal experiences and values.

A conceptual model is a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale and a tool for the integration and interpretation of information. Conceptual model refers to set of values, beliefs and preferences for research approach. Conceptual framework plays the several interrelated roles in the progress of science. The overall purpose is to make scientific meaningful and generalisable. Conceptual frame work is a theoretical approach to the study of the problem which is scientifically based on the emphasis, the section arrangement and clarification of the concepts, dealing with the study. According to **Fowcet** (1980), a conceptual framework can be defined as a set of concepts and those, assumptions that integrate in to a meaningful configuration‖[20]. Nursing research involves a systematic search for knowledge relating to the nursing profession. Nurses engage in research for a number of reasons. Research has an important role in helping nursing to establish solid knowledge base for its practice. Theory is a part of the vocabulary of nurses in all areas. It helps to provide t knowledge to improve the practice by describing, explaining and predicting and controlling phenomena. Theory refers to an abstract generalization that presents

a systematic explanation about how phenomena are interrelated.

A framework is the conceptual underpinning of a study. Not every study is based on a theory or conceptual model, but every study has a framework. In a study based on a theory, the framework is referred to as the theoretical framework: in a study that has its roots in a specified conceptual model, the framework is often called the conceptual framework. Conceptual framework represents a less formal attempt at organizing phenomena than theories. As the name implies conceptual framework deal with abstractions (Concepts) that are assembled by virtue of their relevance to a common theme. Conceptual framework provides clear description of variables suggesting ways or methods to conduct the study and guiding the interpretation, evaluation and integration of significant findings. This study is aimed at assessing the knowledge of staff nurses regarding management of birth asphyxia.

Fig-3:CONCEPTUAL FRAME WORK BASED ON J.W.KENNY'S OPEN SYSTEM MODEL
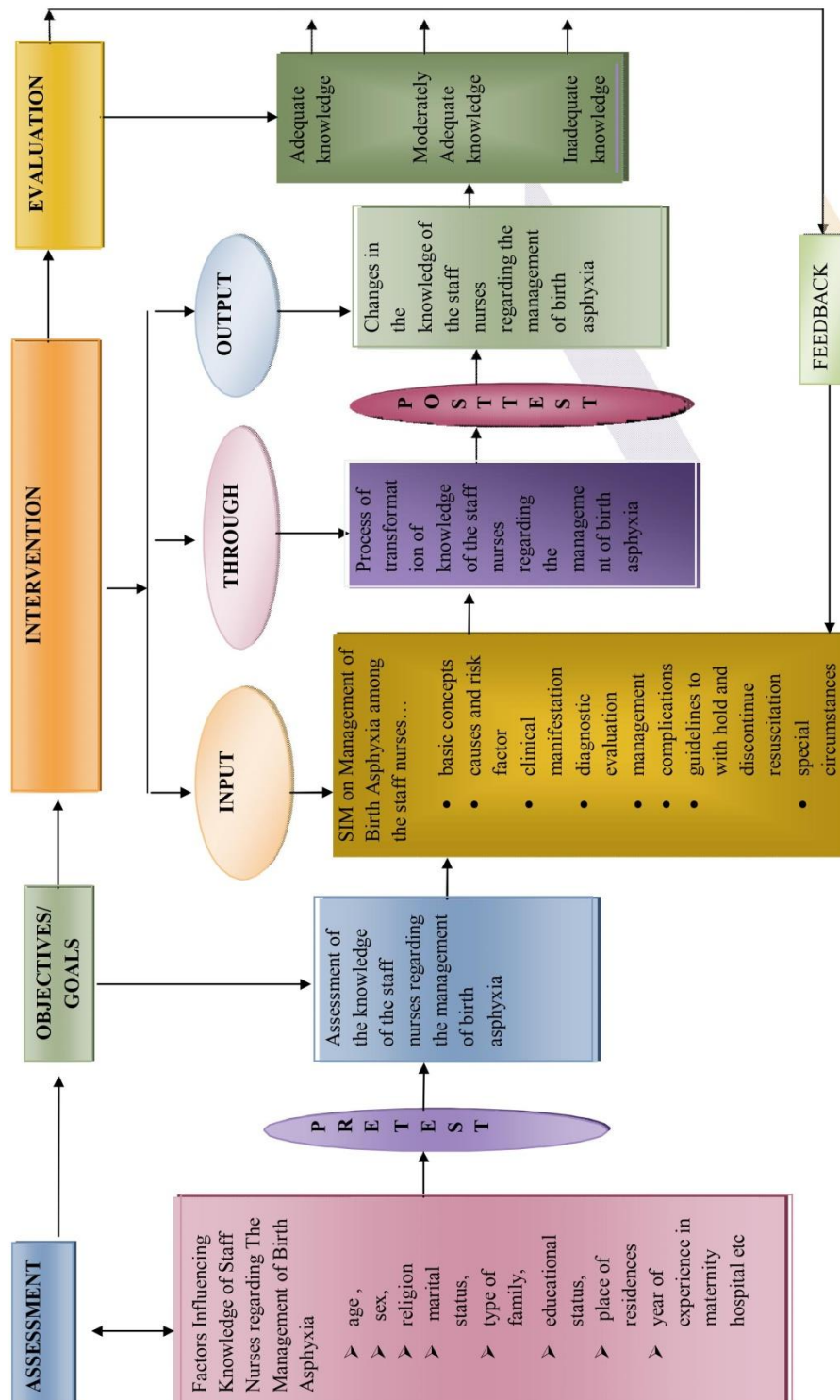
This study is based on the J.W. Kenny"s open system model. The system theory is concerned with changes due to interaction between various factors in a situation. All living system is open, in which there is a continual exchange of matter, energy and information. Open system have varying degree of interactions with the environment from which the system receives input and output and gives back out in the form of matter, energy and information.   The concept, J.W .Kenny"s model is input, through put, output and feedback. Input refers to matters and information, which are continuously processed through the system and released as outputs. After processing the input, the system returns output (matter and information) to the environment in an altered state, affecting the environment for information to guide its operation. This feedback information of environment responses to the systems output is used by the system in adjustment correction and accommodation to the interaction with the environment. Feedback may be positive, negative or neutral. In this study, concepts have been modified as follows:

Assessment:

Assessment is the continuous process of collecting data about client's response, health status, strengths and concerns.

  In this study, assessment is done to find out the factors influencing knowledge of staff nurses regarding management of birth asphyxia such Age, sex, education, marital status, type of family, place of residence, year of experiences in maternity hospital, sources of information and number of newborn resuscitation performed during the service.

Goals:-

Goal occurs when the client and the nurse identify activities to prevent disease or correct the nursing diagnosis. Hence, the goal is to assess the knowledge of staff nurses regarding management of birth asphyxia.

Interventions:-

This study has a specific purpose or goal and uses a process to achieve the goal and system activity can be resolved into an aggregation of feedback circuit such as

- Input
- Throughput

Output Input:-

Input refers to any form of information, energy or matter that enters into the system through its boundary. In this study, input refers to administration of self instructional module on management of birth asphyxia among staff nurses.

Throughput:-

Throughput refers to the process whereby the system transforms create and organizes input. In this study, throughput refers to the process of transformation of knowledge of staff nurses regarding management of birth asphyxia.

Output:-

Output refers to energy, information or matter that is transferred to the environment is the output. In this study, it refers to the change in knowledge of staff nurses regarding management of birth asphyxia.

Feed back:-

Differences in the pre and post test scores were observed from the knowledge scores of the samples. In the present study, the feedback was considered as a process of maintaining the effectiveness of SIM which found through the comparison of pre and post test score by‗t' test**.**

Evaluation:-

Evaluation will be done to determine whether there is progress or lack of progress in the knowledge level of staff nurses regarding management of birth asphyxia.

CHAPTER – 2
REVIEW OF LITERATURE

The review of literature is an extensive, systematic selection of potential sources of previous work, which acquaints the investigator with fact finding work after scrutinization. **Polit and Hungler** stated the review of literature provides readers with a background for understanding the significance of the study.Review of literature for the present study has been divided into the following headings:

1. Studies related to risk factors & causes of birth asphyxia.
2. Studies related to sign and symptoms, diagnosis and complications of birth asphyxia.
3. Studies related to management of birth asphyxia
4. Studies related to incidence of birth asphyxia.
5. Studies related to knowledge of staff nurses regarding management of birth asphyxia
6. Studies related to Effectiveness of Self Instructional Module on knowledge regarding management of birth asphyxia**.**

1. <u>Studies related to incidence of birth asphyxia.</u>

A retrospective study conducted on ―incidence, clinical course and outcome of Birth asphyxia‖ in a Swedish population. A total 227 infants were included in the birth asphyxia group. And the birth asphyxia in neonates and the proper management of high risk cases can prevent further complications[22]. Clinical signs were of mild, moderate or severe hypoxic-ischemic encephalopathies were present in 65 infants, and in another 10 infants. The incidences of Apgar scores < 7 at 5 min, birth asphyxia and birth asphyxia with hypoxic-ischemic encephalopathy were 6.9, 5.4 and 1.8 per 1,000 live born infants: 95% of infants resuscitated with bag and mask ventilation ,compared with 1 of 11 in whom resuscitation included adrenaline. Seizures occurred in 27 of 227 infants, beginning in 18 infants within 12 h of birth. Small-for-gestational-age (SGA) infants were overrepresented in the birth asphyxia group but not in the birth asphyxia-HIE group. All infants with severe HIE died or developed neurological damage. Half of the infants with moderate, and all of the infants with mild, HIE were reported to be normal at 18 months of age. A total of 0.3 per 1,000 live born infants died and 0.2 per 1,000 developed a neurological disability related to birth.**(THORNBERG E,ODEBACK A, 2016)**

A cross sectional study was conducted among 182 infants to determine the base line incidence of birth asphyxia in neonatal intensive care unit in university of Zambia, in USA. Among 182 infants, 42 (23%) had a clinical diagnosis of birth asphyxia. Of 42 infants with birth asphyxia, 13 (31%) had an abnormal neurologic examination during the clinic visit: in contrast, 13 of 141 infants without birth asphyxia (9%) had an abnormal examination. The study concluded that Birth asphyxia survivors account for Almost a quarter of NICU survivors in developing countries. (HALLORAN DR,MCCLURE E,2017)

A retrospective study conducted on incidence of Birth asphyxia in central hospital and GN children‘s clinic both in warri Niger delta of Nigeria, among 864 infants 525 (28/1000 live births) had mild asphyxia while 32% were severely asphyxiated. 61.5% of the asphyxiated were born at maternities, prolonged labour was the commonest cause of asphyxia and asphyxia was more in neonates from unbooked patients, the study concludes that the incidence of birth asphyxia in Warri is 28/1000 and majority of patients are from prolonged labour and delivery at unrecognized centers. Health education will drastically reduce the burden of asphyxia neanatorum.**(G I MCGIL UGWUL,2017)**

A study conducted on Birth asphyxia and hypoxic ischemic encephalopathy, incidence and obstetric risk factors. The incidence of birth asphyxia was 9.4/1000 live term births during the study period, The incidence of HIE was 1.4/ 1,000 live term births. Severe maternal diseases during pregnancy were not a significant risk factor for asphyxia. The amniotic fluid was meconium stained in fifty percent of cases and the umbilical cord was wrapped around the fetal neck in 41% of cases. Abnormal CTG tracing was observed in 66% of cases in the study group and in 79% of the HIE cases. Operative deliveries were significantly more common in the study cohort compared with other deliveries at LSH at the same time: ventouse delivery 22% vs 6.8%

(p<0,001), forceps delivery 6.3% vs 1,03% (p<0,001), emergency cesarean section 19.7% vs 11.4% (p=0,008). The study concluded that the incidence of birth asphyxia is higher in LSH compared with the incidence found in other studies. Signs of fetal distress on CTG and delivery with operative interventions are common. With current available methods to detect intrapartum asphyxia there is a poor correlation with CTG and the development of HIE after severe asphyxia. In low risk pregnancies there is a lack of appropriate methods with high sensitivity and specificity to detect intrapartum asphyxia. **(PALSDOTTIR K,2018)**

The study was conducted on the incidence of low birth weight baby in Pakistan is estimated to be around 19.5%. As birth weight is considered to be an index of viability, perinatal and neonatal mortality is higher in low birth weight babies. Perinatal mortality rate 50-60 per 1000 and neonatal mortality rate 50 per 1000 of our country is one of the highest in the world. Due to advancement in neonatal intensive care unit services in developed countries, survival of low birth weight babies has significantly increased 6-8. On contrary, in developing countries many newborn die not only because of lack of specialized care but also due to improper management during delivery.**(SHAIKH UZMA,2019)**

2. _Studies related to risk factors of birth asphyxia._

A study was conducted to determine the risk factors for birth asphyxia in neonates with the help of formulate effective management protocol in the development of pediatrics, Hyderabad, from April 2015-2016. Study reveals that among 125 newborns, (75 males&15 females) admitted to the neonatal care unit, who are delivered with delayed cry or low Apgar score (<7) were included. Out of 125 newborns, 28% were diagnosed as suffering with moderate or severe encephalopathy. Ante partum risk factors include, non-attendants for antenatal care (64%), multiple births (4.8%), vaginal bleeding was strongly associated with asphyxia in 34.44% neonates. Lack of neonatal care, poor nutritional status, ante partum hemorrhage, was associated with higher incidence of asphyxia. Study suggestsed that the nurse should have enough knowledge to identify the risk factors.**(YASMEEN MEMO,2016)**

A study was conducted on ‖risk factors for associated with substandard care during labor Infants born between 2014 and 2015 with a gestational age > or = 33 weeks to identify the infants characteristics related to neonatal asphyxia and associated with substandard care‖. Cases were 177 previously identified infants suffering from encephalopathy caused by asphyxia where there was suspected substandard care during labor. Controls were identified from the population- based Swedish Medical Birth Register, had an Apgar score of 10 at five minutes, and were alive at 28 days of age. Study identified the Maternal and delivery factors associated with asphyxia included maternal age > or = 30 years, short maternal stature (< or =159 cm), previous cesarean delivery, insulin-dependent diabetes before pregnancy and gestational diabetes, induced deliveries and delivery at night, with adjusted odds ratios (ORs) ranging from a two- to fourfold increase in risk. Compared with non-dystocic deliveries, the OR for dystocic deliveries was fivefold higher, and was further increased if epidural anesthesia or opioids were used. Small- and large-for-gestational age. Infants, post-term (> or =42 weeks) births, twins and breech deliveries had a three- to eightfold increase in risk of asphyxia when there was substandard care during labour. The study concluded that due to substandard care the risk for asphyxia increases.**(GRUNEWALD C,2017)**

A study conducted on Perinatal risk factors in birth asphyxia: relationship of obstetric and neonatal complications to neonatal mortality in 16,365 consecutive live births. Over a period of one year, 16,365 consecutively live born neonates were prospectively studied for evidence of birth asphyxia using the requirement of greater than one minute of positive pressure ventilation for identifying infants suffering from birth asphyxia. Asphyxia occurred in 2.8% of all neonates. Multivariate analysis of high risk factors associated with increased risk of asphyxia showed that low birth weight was the most significant predictor of asphyxia: asphyxia occurred in 68% of infants of less than 1,000 g birth weight and decreased to 1.2% in infants of 3-4 kg birth weight. Perinatal risk factors associated with a higher incidence of asphyxia include: post maturity, birth weight (less than or equal to 2.5 kg) and with the presence of maternal and/or obstetric complications. The impact of asphyxia on neonatal mortality was most pronounced in more mature infants and the mortality was increased 3 fold in infants of less than 34 week gestation and greater than 27 fold for infants greater than

38 week gestation. Of the asphyxiated neonates, intrauterine growth retardation, fetal macrosomia, hypothermia, hyaline membrane disease, seizures, hypoglycemia and hyponatremia were significantly associated with an increased risk of death.**(MIR NA,FAQUIH AM,2017)**

A study conducted on risk factors and short-term outcome of birth asphyxiated babies in dhaka medical college hospital Bynilufar Shireen, Nazmun Nahar: an analytical type of or observational study was done in the special care baby unit (scbu) of dhaka medical college hospital from october 2011 to march2012. Identification of the risk factors was done by retrospective comparison of the cases and controls. Outcome was analyzed by cross sectional comparative study. one hundred consecutive cases of birth asphyxia, admitted in scbu, were enrolled in the study. another 30 neonates admitted during this period for other reasons (i.e., jaundice, septicemia, low birth weight) were taken as control. necessary information were collected by detailed history taking, clinical examination and close follow up of the hospital course, using pre-designed questionnaire and recording form. The findings were male: female ratio 3:2 both in the cases and controls. Mean age on admission was 13.8 hours and 2.6 days for case and control respectively. identified important maternal risk factors were primiparity (57% in cases vs. 33.3% in control), hypertension(16.6% vs. 3.3%), pre-eclamptic toxemia of pregnancy (24% vs. 13.3%), prolonged rupture of membrane (33.3% vs. 6.7%), prolonged labour (34% vs. 3.3%) and use of oxytocin during labour (16% vs. none). all these were statistically significant (p<0.05). serious neonatal complications noted among the asphyxiated babies were convulsion, hypoxic ishchemic encephalopathy and necrotizing enterocolitis. these were not seen among the control group. mortality among the asphyxiated babies was 16% during hospital stay, whereas no fatality was recorded among the control. Neurological sequelae was observed in 28% of asphyxiated babies but was absent in controls. This study concluded that all the identified risk factors as well as neonatal complications were significantly higher in asphyxiated babies. Most of these could have been prevented even with our limited resources.**(NILFAR S,NAZUMN,2018)**

A study conducted on risk factors related to adverse outcome in asphyxiated babies. by Seyal T. And Hanif A., Lahore, at sir ganga ram hospital, Lahore. this was an observational study conducted in a prospective manner in the neonatology unit of the department of Paediatrics, over a period of six months from 1st August, 2013 to 31st Jan. 2014. This study included 144 consecutive asphyxiated neonates who were admitted in our neonatal unit and fulfilled the inclusion criteria. Detailed maternal information, physical examination and progress of the babies were noted regularly till the time of death or discharge and entered into a specified proforma. Babies were categorized into different stages of HIE (Hypoxic Ischemic Encephalopathy). On the basis of outcome, they were divided into two groups, group one who survived and were discharged with stable vital signs and group two, who died. Effect of risk factors on both groups were compared and results were expressed as (P<0.05 was taken significant) by using chi-square test. Total admissions during the study period were 650. One hundred and forty four (22%) suffered birth asphyxia. Out of one hundred and forty four asphyxiated babies forty five (31.3%) were females and ninety nine (68.8%) were males. Ninety three (64.6%) weighed >2.5 kg and fifty one (35.4%) 1.5-2.5 kg. 15 (10.4%) babies of birth asphyxia did not suffer HIE, 53(36.8%) had stage I, 46 (32.0%) stage II and 30 (20.8%) stage III HIE. 86 (59.7%) of the babies were discharged successfully and 58 (40.3%). Variables (risk factors) found significantly affecting adverse outcome were late arrival and severe birth asphyxia. This study concluded that high risk pregnancies to tertiary care hospitals is not enough because these centers and neonatal units have their own limitations so more attention should be paid to prevention.**(SEYAL .T& HANIF.A,2019)**

3. *Studies related to causes, diagnosis and complications of birth asphyxia.*

A study was conducted on ‒Causes of birth asphyxia and trauma‖ were determined in the 208 most severely affected infants of 10,995 consecutive live births; study revealed that among these infants 159 infants had cerebral disturbances, 39 had fractures and palsies, and 10 had fractures or palsies in addition to cerebral disturbances. Most frequent causes of birth asphyxia and trauma were prolonged labour, midforceps or breech delivery in full-term infants. abruptio placentae, difficult breech delivery, and maternal sedation in premature infants and unattended precipitate deliveries in immature infants. Asphyxia occurred in infants with fetal

malnutrition. This study suggested that improved obstetrical management with more frequent use of Cesarean section delivery might have of value in preventing fetal complications.**(JOHN R,O'BRIEN,2016)**

A study conducted on causes of neonatal deaths from perinatal asphyxia-hypoxia in South Africa: national perinatal survey, Among 4502 neonatal deaths weighing >999 g, 1459 (32.4%) were identified as being related to asphyxia-hypoxia. Intrapartum asphyxia was the most common diagnosis (72% of deaths).

Hypoxic-ischemic encephalopathy was identified as the main neonatal diagnosis in these deaths. The most common category of probable avoidable factors was health worker-related. Inadequate fetal monitoring was the most common health worker-related probable avoidable factor. Substandard care related to resuscitation was recorded infrequently, most likely because of inability to assess neonatal resuscitation. This study concluded that Asphyxia- hypoxia is responsible for about one-third of neonatal deaths. Intrapartum asphyxia is the major primary obstetric cause of deaths from hypoxia. **(VELAPHI S,2017)**

A prospective descriptive observational study conducted on major cause of birth asphyxia in a Tanzanian rural hospital study conducted in the delivery room and adjacent neonatal area. Research assistants were trained to observe and record events related to labor, neonatal resuscitation, and 24-hour postnatal course. Birth asphyxia was defined as failure to initiate spontaneous respirations and/or 5-minute Apgar score <7, prematurity as gestational age <36 weeks, and low birth weight (LBW) as birth weight <3rd centile for gestational age. Data were analyzed with $\chi^{(2)}$ and Student's t tests. Over 1 year, 4720 infants were born and evaluated. Of these, 256 were admitted to the neonatal area. 49 infants died secondary to BA (61%), prematurity (18%), LBW (8%), infection (2%), congenital abnormalities (8%), and unclear reason (2%). The 5-minute Apgar score was ≥7 in 50% of the infants who died secondary to birth asphyxia. Most cases of early neonatal mortality were related to Birth asphyxia and prematurity and LBW are additional important considerations. Reducing perinatal mortality requires a multifaceted approach with attention to issues related to Birth asphyxia, potential complications of prematurity, and LBW. **(JOHANNESBURG,2018)**

A study conducted to determine the complications of birth asphyxia in Mulago Teaching and referral Hospital, Uganda. The complications such as HIE, RDS, aspiration pneumonia, hypoglycemia, hypothermia, hypotension and hypoxemia. Adverse outcome was seen in 57.3% of cases: death in 12.1% and clinical complications in 45.2%. HIE occurred in 21.8%, hypoxemia in 12.9%, hypoglycemia in 16.9% and aspiration pneumonia in 4.8. Therefore, the study suggested that there is need to carefully evaluate and monitor babies immediately after birth.**(ERSDAL HI,2019)**

A study conducted on complications of Birth asphyxia Perinatal Asphyxia oxygen deficit at delivery can lead to severe hypoxic ischemic organ damage in newborns followed by a fatal outcome or severe life-long pathologies. The severe insults often cause neurodegenerative diseases, mental retardation and epilepsies. The mild insults lead to so-called −minimal brain-damage disorders‖ such as attention deficits and hyperactivity, but can also be associated with the development of schizophrenia and life-long functional psychotic syndromes. The task of individual prediction, targeted prevention and personalized treatments before a manifestation of the life-long chronic pathologies usually developed by newborns with asphyxia deficits, should be given the extraordinary priority in neonatology and pediatrics.**(ONDOA-ONAMA C,2013)**

4. Studies related to management of birth asphyxia

A study conducted on‖ Experience with training of traditional midwives on the prevention and management of birth asphyxia in a rural: In Zimbabwe's Chimanimani district‖.51% of deliveries takes place at home under the supervision of traditional midwives. (vanambuya)., it was decided to provide these practitioners with training. Of particular concern was the prevention and management of birth asphyxia, which accounted or half of the handicaps in children born in the district in 1980 (118/250) and was the leading cause of perinatal deaths (754/2287). The training, which is voluntary, is carried out at the rural health center or at 1 of the 65 outreach centers in the district. The main objectives of the training are to enable traditional midwives to recognize the risk factors in pregnancy, labor, and after delivery and refer women at risk to a

health facility; prevent the practice of rituals that can lead to birth asphyxia (e.g., administration of oxytocic herbs to speed up labor); and to encourage greater collaboration and respect between clinic staff and traditional workers. Between1983-88, a total of 645 traditional midwives completed this 2-session course. This study concluded that training the midwives in management of birth asphyxia can reduce the complications.**(OLGA G,KRISTINA Y,2016)**

A study conducted on ‒Management of birth asphyxia in home deliveries in rural Gadchiroli India: the effect of two types of birth attendants and of resuscitating with mouth-to mouth, tube-mask or bag-mask‖, to evaluate the effect of home-based neonatal care on birth asphyxia and to compare the effectiveness of two types of workers and three methods of resuscitation in home delivery. The birth asphyxia in home deliveries was managed differently during different phases. Trained traditional birth attendants (TBA) used mouth-to-mouth resuscitation in the baseline years (1993 to 1995). Additional village health workers (VHWs) only observed in 1995 to 1996. In the intervention years (1996 to 2003), they used tube-mask (1996 to 1999) and bag-mask (1999 to 2003). The incidence, case fatality (CF) and asphyxia-specific mortality rate (ASMR) during different phases were compared. During the intervention years, 5033 home deliveries occurred. VHWs were present during 84% home deliveries. The incidence of mild birth asphyxia decreased by 60%, from 14% in the observation year (1995 to 1996) to 6% in the intervention years (p<0.0001). The incidence of severe asphyxia did not change significantly, but the CF in neonates with severe asphyxia decreased by 47.5%, from 39 to 20% (p<0.07) and ASMR by 65%, from 11 to 4% (p<0.02). Mouth-to-mouth resuscitation reduced the ASMR by 12%, tube-mask further reduced the CF by 27% and the ASMR by 67%. The bag-mask showed an additional decrease in CF of 39% and in the fresh stillbirth rate of 33% in comparison to tube-mask . The study has identified that Home- based interventions delivered by a team of TBA and a semiskilled VHW reduced the asphyxia-related neonatal mortality by 65% compared to only TBA. The bag- mask appears to be superior to tube-mask or mouth-to mouth resuscitation, with an estimated equipment cost of US dollars 13 per death averted. **(TUMWINE JK,2017)**

The retrospective study was conducted on newborn resuscitation methods vary in developing countries. This study describe the delivery experience at rural Kenyan Mission Hospital by analyzing delivery data and newborn resuscitation outcomes for a 12 month period and prospectively characterizing newborn resuscitation practices.36 of 878 newborns (4%) suffered unfavorable outcomes , significantly associated with caesarian section , breech and vacuum deliveries and birth weight of 2000gm or less observed. Newborn resuscitation practice was inconsistent and notable for umbilical vein injections given in live of bag and mask ventilation. A basic newborn resuscitation protocol was developed. It is concluded that at Kenyan Hospital, unfavorable newborn outcomes were significantly associated with delivery other than normal vaginal and with birth weight of 2000g or less. Newborn resuscitation methods could be modified for use in this setting and might be most useful for term infants delivered by caesarean section, breech or vacuum deliveries.**(ABHAYA T BANG,2017)**

Aggraval.D.2017 conducted a study on post resuscitation management of asphyxiated neonates‖. The study findings showed that prenatal hypoxia is one of the common causes of neonatal mortality. The prenatal asphyxia contributes almost 20% of neonatal death in India because most of the occurs at home, usually attended by untrained birth attendants. They concluded that failure to initiate and sustain breathing immediately after delivery was the cause for neonatal death. Good support skill and prompt correction is needed for common problem including temperature maintenance, oxygenation and blood pressure control.

Luo and Karlberg ,**2018**conducted a study on ‒The impact of the time of birth or infant mortality and early neonatal mortality in full term and preterm birth‖ and found that the early neonatal mortality is mainly due to birth asphyxia, especially during night, 70% was due to birth asphyxia and 30% is due to related complication. The neonatal death was common in night due to the lack of trained personnel, stress, strain and tiredness of the nurses during night. This study concluded that the skilled trained personals are necessary for the effective new born resuscitation.

Bang and Bang ,2019conducted a study on Preventing new born death‖ in 86 villages of Indian community and found that village health workers trained in resuscitation of new born managed birth asphyxia and prevented hypothermia of premature babies or low birth weight babies. Birth asphyxia was diagnosed at 1 minute after birth and managed by clearing mucus with an oral mucus sucker with mucus trap, tactile stimulation, giving artificial respiration by bag and mask or by tube and mask. High risk babies with low birth weight were managed by keeping the room warm, by drying the baby immediately after birth, covering with multi layered cloth or by wrapping the baby in a blanket.

5.   Studies related to knowledge of staff nurses on management of birth   asphyxia

A cross sectional study conducted on ‒Assessment of knowledge of nurses in Western Nigeria about neonatal resuscitation‖.179 nurses were interviewed by using a closed ended questionnaire that tested evaluation and appropriate action aspects of neonatal resuscitation. Of these, 72.6% had worked in the labour room and the special care baby unit within the last 5 years while only 14.0% has attended neonatal resuscitation training course within the last 5 years. The study recommended that the knowledge of the respondents about appropriate action to be taken during neonatal resuscitation was poor. Frequent and intensive courses on neonatal resuscitation are highly directed.**(LUO,KARLBERG,2016)**

A hospital based neonatal program was done in Ghana to assess midwives baseline cognitive knowledge of evidence-based neonatal resuscitation practices and the impact of training program on midwife knowledge and retention of such knowledge 9-12 months after training, They trained all midwives on the labor ward at ridge hospital using materials modified the AAP neonatal resuscitation program. There was a substantial improvement in both written and practical evaluation of neonatal resuscitation skills after the training which was maintained 9-12months. Finally the study recommended that a self sustaining neonatal resuscitation program can be successfully created in a resource poor environment.**(BANG,2016)**

The retrospective study was conducted on newborn resuscitation methods vary in developing countries. This study describe the delivery experience at rural Kenyan Mission Hospital by analyzing delivery data and newborn resuscitation outcomes for a 12 month period and prospectively characterizing newborn resuscitation practices.36 of 878 newborns (4%) suffered unfavorable outcomes , significantly associated with caesarian section , breech and vacuum deliveries and birth weight of 2000gm or less observed. Newborn resuscitation practice was inconsistent and notable for umbilical vein injections given in live of bag and mask ventilation. A basic newborn resuscitation protocol was developed. It is concluded that at Kenyan Hospital, unfavorable newborn outcomes were significantly associated with delivery other than normal vaginal and with birth weight of 2000g or less. Newborn resuscitation methods could be modified for use in this setting and might be most useful for term infants delivered by caesarean section, breech or vacuum deliveries.**(TINUADE A,2017)**

Hamilton,2017 conducted a study on ‒ABC‖ of labour and care of the new born‖ and found that most new born babies will establish normal breathing spontaneously. They need only attention to the maintenance of their temperature and perhaps gentle stimulation to start breathing. Some may need suction of the air way and few will need assisted lung inflation via mask. Fewer still need tracheal intubation and a very few will need external chest compression and intervention with drugs. Successful resuscitation requires the co-ordinate efforts of a professional team. All midwives, neonatal nurses and doctors who might attend a delivery should be competent to perform lung inflation and ventilation via a mask. Tracheal intubation should be under taken only by those who have been trained in the use and who have sufficient practice to maintain skill. They concluded that this study helped in improving knowledge of the staff nurses on NBR.

The study was conducted by **Deorari A, Vidyasagar.D (2017);** VK Paul on the impact of newborn resuscitation, the incidence of birth asphyxia was evaluated in 14 teaching hospitals in India. 2 faculty members in each institution attended a newborn resuscitation course and afterwards trained staff in their respective hospitals. Each institution provides 3 months pre-intervention and 12 months post-intervention data. Introduction of the newborn resuscitation

Abramovici and Can cie Cao 2018, made a study on ―new born resuscitation‖ and found that human new born is particularly vulnerable to asphyxia. They concluded that resuscitation should be done after necessary preparations and done in an adequate environment, respecting the heating and positioning of the new born. After aspiration and tactile stimulation the evaluation must be taken in to account for respiratory effort, cardiac frequency, colour and apgar report. After superior airway opening and effective stimulation, ventilation and cardiac massage are done, medication and liquid infusion are used in case circulation collapse or absence of answer to oxygenation and cardiac massage without satisfactory effects.

A study conducted to assess the knowledge, attitude and practice of community health centre staff on birth asphyxia. Most of newborn deaths are associated with birth asphyxia (40%), low birth weight and prematurity (25%) and infections (20%) in the community centers. Assuring the supervision of the matrons who are in charge of pregnant mother and babies. This study took place in September 2016. It included the matrons, the nurse chief available at the time of survey. Prolonged labour more than 12 hours (73.3%) and stained amniotic fluid (63.3%) are the most recognized signs during labour making fear the birth asphyxia. In this survey the prolonged labour (63.7%), infection (60.7%) and dystocic delivery (45.5%) were the mostly reported causes of birth asphyxia. In this study they have observed some good practices as aspirating with the bulb (69.7%) and clearing upper way with a finger covered with gauze (30.3%) doing the mouth to mouth (51.5%) stimulating the newborn (66.7%). The improvement of the neonatal mortality requires the training of the staff and the equipments of the centers in small simple materials of resuscitation.**(HAMILTON,2018)**

A study was conducted to evaluate the role of the neonatal nurse practitioner in resuscitation of preterm infants at birth. This study shows change in the work patterns and numbers of medical staff in training grades pose a significant challenge to those responsible. For the provision of an effective clinical neonatal service. Advanced neonatal nurse practitioners may have a role in this changing neonatal service. The effectiveness of the ANNPs in resuscitation of preterm babies at birth against the standard set by junior medical staff. Resuscitation teams lead by ANNPs provided the same resuscitation interventions as those provided by medically led teams. Although babies resuscitated by ANNP led teams were no more likely to be incubated. They were incubated more quickly and received surfactant sooner than babies resuscitated by medically lead teams.

(ABRAMAVOCI,2019)

SEDA,2019 conducted a workshop based on the theme ― Nursing care management of neonates‖ with the purpose of reviews and adapt the recent advances in the art and understanding of perinatal and neonatal care by emphasizing on holistic care to reduce new born morbidity and mortality in hospital and community setting. It was concluded by reviewing the participants knowledge and skill on care of the new born, identifying the common neonatal problem or disorders, their management and prevention.

LONDON H. P.2019, Documented the report of a study‖ Simple measures could save millions of newborns. The study finding showed that around 4 million babies in a year are still born and further 4 million die before a month old. They concluded that the high death rate could be reduced by practice like keeping the baby warm, breast feeding and assuming that there are skilled birth attendant to carry out the resuscitation of new born at delivery room. Simple measures can save million of new born.

KATTWINKEL,2019 documented the reports of ―neonatal emergencies at birth‖. The study showed that the nurses' quick performance of the initial steps of resuscitation of new born brings a better outcome in the delivery room. He concluded that establishing effective ventilation is the key to nearly all successful neonatal resuscitation. Most compromised new born respond to assisted ventilation with bag and mask which is a critical skill for any health care professional that cares for the new born.

A study was conducted on ―Effect of statewide neonatal resuscitation training programme on Apgar score among high risk neonates in Illinois‖. They found that the neonatal resuscitation programme provided training to hospital delivery room personnel to standardized knowledge and skills to reduce neonatal morbidity, and mortality. Increased successful resuscitation during the first few critical minute after birth was doing to this training programme. Apgar score continues to be used as the best established index of immediate health of neonates. The result showed that the neonatal resuscitation improves knowledge and skill among

health care personnel in the delivery room both short term and long term, there has been little evidence of demonstration of resuscitation impact on infant morbidity.(LONDON HP,2019)

6. Study related to Effectiveness of Self Instructional Module on knowledge regarding management of birth asphyxia.

The study was conducted to improve the preparedness of health care providers in pediatric resuscitation and to evaluate the effectiveness of the pediatric advanced life support course. They followed the standard guidelines of American Heart Association to conduct the first 10 hours course of pediatric advanced life support in their hospitals. It was held on January 11, 2016. A pre- test, post-test and survey questionnaire were given to each participants. 129 completed these test out of 160 nurses and doctors. The average scores were 73% for the pretest and 86.8 for the post test. The average score among doctors and nurses are 72.6, 86.7 and 73.5, 86.8. The participants with pretest scores higher than are equal to had pretest and post test mean values of 83.3 and 87.7. The participants with less background, knowledge had better increment scores after this course. By this the provider course there is a significant increase in the knowledge and skill pertaining to pediatric resuscitation knowledge among the nurses. **(JUKKALA AM,2016)**

A study conducted on ‒Effectiveness of self instructional module on nursing management of neonates‖. A non probability sampling method is used. The study conducted among 40 nursing personnel working in NICU. The result indicated that the mean pre test knowledge of respondents found to be 46.5% as compared to 76.8% knowledge noticed in post test. The enhancement of knowledge from pre test to post test was found to be statistically significant (t- 21.95) Revealing the effectiveness of self instructional booklet. The aspect wise scores were neonatal jaundice (36.7%), hypothermia (36.2%), birth asphyxia (30%), neonatal seizure (26.2%) and hypoglycemia (22.1%).further the enhancement of mean knowledge of respondents observed to be 30.2%on nursing management in neonates. The enhancement of knowledge on all the knowledge aspects was found to be significant statistically (P<0.05) indicating the effectiveness of self instructional booklet on nursing management of neonates. **(CHAN LC,HEY E,2017)**

A study was conducted on acquisition and maintenance of the skills necessary for successful resuscitation of the neonate are typically accomplished by a combination of completion of standardized training courses using textbooks, videotape and manikins, together with active participation in the resuscitation of human neonates in the real delivery room. This study developed a simulation based training program in neonatal resuscitation to bridge the gap between textbooks and real life and to assess the training satisfaction with the elements of this program. The subjects expressed the high level of satisfaction with nearly all aspects of this novel program. Responses to open ended questions were especially enthusiastic in describing the realistic nature of simulation based training. The major limitation of the program was the lack of fidelity of neonatal manikins to a human neonate.**(LIN IJ,CHI CS,2017)**

Clavre N.Done,2017 a study on ‒Closed – loop controlled inspired oxygen concentration for mechanically ventilated low birth weight infants with frequent episodes of hypoxemia‖. He related that mechanically ventilated low birth weight infants often present with frequent episodes of hypoxemia maintaining arterial oxygen saturation by pulse oxymetry are usually assisted with a transient increase in fraction of inspired oxygen. A group of nurses were ventilated infants who presented with frequent episodes of hypoxemia. They concluded that the effectiveness of this ventilation depended on the fully dedicated nurses. With the help of mechanical ventilation, nurses have saved many neonates and reduced the morbidity associated with supplemental oxygen hypoxemia.

Karthikeyan G. and **Hussain M.M.,2018** done a study on ‒conventional ventilation in neonates: Experience from Saudi Arabia‖. They stated that positive pressure ventilation with endotracheal intubation is an effective treatment for the neonates with perinatal asphyxia. The survival of the neonates depended on birth weight and gestational age. The result showed that hyaline membrane disease (n=31, 39.7%) and perinatal asphyxia (n=29 37.2%) were the major indications for positive pressure ventilation. The chances showed a statistically significant increase with increase in birth weight and gestational age.

Rao and Ramji,2018 conducted a study on the ‒Effective management of asphyxiated new born in the initial few minutes of life‖ by evaluating the utility of pulse oxymetry during resuscitation in the delivery room. They concluded that while clinical parameters still remained important guidelines in neonatal resuscitation, pulse oxymetry proved to be an additional non invasive monitoring tool to help ideally asphyxiated neonates.

Joan and Wylle,2019 did a study on ─ New life support‖ and identified the first minute of care received by a new born baby, particularly a premature baby, as it may be critical not only for its survival but possibility of long term out come and because the need for resuscitation is not always predictable and stressed that anyone who delivers babies ought to be able to resuscitate them. Resuscitating babies at birth need specialist training. Practices have changed over the year leading to some confusion about what procedures are correct. They concluded that training of resuscitation of new born is essential for all midwives, nurses and Para-medicals to resuscitate new born at any circumstances.

Philip and Caroline,2019 Conducted a study on ‒The care of premature infants‖ and found that the condition, in which the baby is born have a major influence on its chance of survival. Preterm babies (born less than 28 weeks) do best when delivered in a tertiary referral centre with a proper new born resuscitation. Deliveries should be conducted by experienced midwives or obstetrician with an experienced pediatrician. The delivery room should be warm and there should be adequate equipments for resuscitation. They concluded that preterm labour needs careful management in centers with staff skilled in this field.

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CHAPTER- 3
RESEARCH METHODOLOGY

</div>

Research methodology organized all the components of the study deals with the type of research approach used, the setting of the study, the population, sampling technique, sample selection, the inclusion and exclusion criteria, the development of the tool, collection of data, pilot study, procedure of data collection and plan for data analysis.

RESEARCH APPROACH:

The selection of research approach is the basic procedure for the conduction of research enquiry. A research approach tells us so as to what data to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data. In view of the nature of the problem selected for the study and the objectives to be accomplished, Evaluative survey approach was considered as the best way to assess the effectiveness of Self Instructional Module on knowledge regarding management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, BBSR.

RESEARCH DESIGN:

The research design refers to the researcher's overall plan for obtaining answers to the research question and its spells out strategies that the researcher adopted to develop information that is accurate, objective and interpretable.

Pre experimental design was used as a research design in this study as there is a need to conduct generalized assessment of the knowledge of staff nurses regarding management of birth asphyxia. One group pre-test and post test design $(0_1 \times 0_2)$, which belongs to pre experimental design adopted for this study.

GROUP	PRE TEST	INTERVENTION	POST TEST
Staff nurses working in Hi-Tech Medical College & Hospital, BBSR	Administration of structured knowledge questionnaire on day 1	Distribution of self instructional module on day 1	Administration of structured knowledge questionnaire on day 7
	01	X	02

01-Pre test assessment for knowledge regarding management of birth asphyxia among the staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar.

X-Distribution of instructional module on management of birth asphyxia.

02-Post test assessment for knowledge regarding management of birth asphyxia among the staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar.

FIGURE 4: SCHEMATIC PRESENTATION OF RESEARCH STUDY/DESIGN.

Population: Staff nurses working in selected

Pre Test

Sample: Study Subjects: 60 staff nurses

Sampling method: purposive sampling technique.

Instrument: Structured knowledge questionnaire

Self Instructional Module

Post Test

Data Analysis

| Distribution of Sample characteristicsin frequency and percentage of the staff | Paired "t" test are used to evaluate the effectiveness of Self Instructional Module | Chi Square (x^2) test to associate pre test knowledge score with the selected demographic variables. |

VARIABLES

Variables are qualities, properties or characteristics of the person, things or situation that change or   vary. The variables are mainly included in this study are independent variable and dependent variable. Dependent variables explain effect of independent variable.

Independent variable

An independent variable that stands alive and it is not depending on any other. In this study, the independent variable is Self Instructional Module. It includes the information about the management of birth asphyxia.

Dependent variable

The dependent variable is the variable that the researcher interested in understanding, explaining or predicting. In this study, it refers knowledge regarding management of birth asphyxia among staff nurses in Hi-Tech Medical College & Hospital, BBSR.

Demographic variables

Age, sex, education, marital status, type of family, place of residence, year of experiences in maternity hospital, sources of information and number of newborn resuscitation performed during the service.

RESEARCH SETTING

Research Setting refers to the area where the data collection will occurs. It is the physical location and condition in which data collection takes place in a study. The study was conducted in Hi-Tech Medical College & Hospital, BBSR. The setting selected for the study on the basis of:

- Feasibility of conducting the study

- Availability of the samples

  - **Name of the Hospitals Selected for the Study**

Sl.No	Name of the hospital	Date	Number Of Samples
1.	**Hi-Tech Medical College & Hospital, BBSR**	1/10/2020 to 31/10/2020	**60**

01- Pre test assessment for knowledge regarding management of birth asphyxia among   the staff   nurses working in Hi-Tech Medical College & Hospital, BBSR.

X-Distribution of self instructional module on management of birth asphyxia.

02- Post test assessment for knowledge regarding management of birth asphyxia   among the staff nurses working in Hi-Tech Medical College & Hospital, BBSR.

POPULATION

In the present study, the populations were the staff nurses working in Hi-Tech Medical College & Hospital, BBSR.

SAMPLE

Sample consists of the subject of the population selected to participate in a research study. In the present study, staff nurses who were working in Hi-Tech Medical College & Hospital, BBSR were selected to participate in this study.

The sample size of the study consists of 60 staff nurses who were working in Hi-Tech Medical College & Hospital, BBSR.

SAMPLING TECHNIQUE

Sampling refers to the process of selecting the portion of population to represent the entire population. Subjects were selected from the sampling frame to achieve the purposive sampling technique. In the present study, the purposive sampling technique was adopted for 60 staff nurses working in Hi-Tech Medical College & Hospital, BBSR.

SAMPLING CRITERIA:

The samples were selected with following pre determined criteria:

Inclusion Criteria:

1. Staff nurses who are working in Hi-Tech Medical College & Hospital, BBSR .
2. Staff nurses who are willing to participate in the study.
3. Staff nurses who are available at the time of study.
4. Staff nurses who can read and write English.

Exclusion Criteria:

1. Staff nurses who are not willing to participate in the study.
2. Staff nurses working who are not available during study period.
3. Staff nurses who exposed to workshop/seminar on management of birth asphyxia.

TOOLS FOR DATA COLLECTION:

A. Selection and development of the tool

Instrument is the device that a researcher uses to collect data. The instrument selected in a research should be vehicle that would best obtaining data for drawing conclusions as far as possible, which are pertinent to the data. After an extensive review of literature and discussion with the experts, structured knowledge questionnaire was used to assess the level of knowledge on management of birth asphyxia among the staff nurses.

a**. Preparation of blue print:**

The blue print was prepared to the construction of Structured knowledge questionnaire based on which the items were developed. It depicted the distribution of items according to the content area.

b. *Description of tool*:

The tool for the data collection consists of two sections:

Section A:

Socio demographic variables consists of 9 items age Age, sex, education, marital status, type of family, place of residence, year of experiences in Hi-Tech Medical College & Hospital, BBSR sources of information and number of newborn resuscitation performed during the service.

Section B:

The Structured knowledge questionnaire used in this study was prepared by the researcher to measure the knowledge regarding the management of birth asphyxia. It consists of structured knowledge questionnaire to assess the knowledge of staff nurses regarding the management of birth asphyxia. Structured knowledge questionnaire consists of 36 items and is divided into area wise like:

1. Anatomy and physiology of respiratory system

2. Basic concepts about birth asphyxia

3. Causes and risk factors

4. Clinical manifestation

5. Diagnostic evaluation

6. Management

7. Complication

8. Guidelines for withholding and discontinuing resuscitation

9. *Special circumstances*

c. Scoring of Pattern:

- Each correct answer scores one mark

- Each wrong answer scores zero mark

- Total maximum marks is 36

- Minimum marks is 0.

Inference will be drawn as below:

Adequate knowledge – Above 75%

Inadequate Knowledge – below 50%

Moderate Knowledge – 50 – 75%

d .Content validity:

Content validity refers to the degree to which an instrument measures what it is intended to measure. The prepared instrument along with the objectives, blue print and criteria check list was submitted to 9 experts comprising of in the field of Child health Nursing(6), Statistician (1), Pediatrician(2) for establishing the content validity. The tool was modified as per suggestions of the experts and the final tool was constructed **.**

e. Reliability:

Reliability of the research instrument was defined as the extent to which the instrument yields the same results in repeated measures. It was then concerned with the consistency, accuracy, precision, stability, equivalence and homogeneity.

The tool after validation was subjected to test for its reliability. The structured knowledge questionnaire was tested for reliability by administering it to 10 staff nurses of Hi-Tech Medical College & Hospital, BBSR.

The reliability of the tool was computed by using **Split Half method Correlation formula (raw score method).**

$$r = \frac{\sum (X-\bar{X}) (\sum Y-Y)}{\sum (X-\bar{X})^2 \ (\sum Y-\bar{Y})^2}$$

*And **Spearman Brawn"s prophecy formula was used.***

$r^1 = 2\ r/1+r$

r^1 —— the estimated reliability of entire test

r—— reliability co-efficient of correlation of **Split Half Test**

The reliability co-efficient on knowledge was found to be **<u>0.97</u>** revealing the tool is feasible for administration for the main study. Since, the knowledge reliability co- efficient is r > **<u>0.95.</u>** The tool was found to be reliable and feasible for the main study.

DEVELOPMENT OF SELF INSTRUCTIONAL MODULE ON MANAGEMENT OF BIRTH ASPHYXIA

Self Instructional Module was developed on the basis of research findings of the study, review of Literature and consulting with experts.

a. **The steps followed to develop self instructional module was as follows**:

The steps adopted in the development of self instructional module were:

- Preparation of first draft of Self Instructional Module.

- Development of criteria checklist to evaluate the Self Instructional Module
- Content validity of Self Instructional Module

- Editing of Self Instructional Module.

- Preparation of final draft of Self Instructional Module.

b. ***Preparation of First Draft of Self Instructional Module***

Self Instructional Module was prepared on the basis of review of literature, which was pertaining to the development of self instructional module on management of birth asphyxia.

c. ***Development of Criteria Checklist to evaluate the self instructional module:***

❖ **Selection of the Content**

The content of self instructional module was selected through literature search and in consultation with the experts. Then content was analyzed into sub topics and sub topics were broken down into elements.

❖ ***Organization of the Content***

The content selected was organized under following main headings.

- Introduction

- Definition

- Incidence

- Anatomy and Physiology of Respiratory System

- Causes and risk factor

- Signs and Symptoms

- Diagnostic Evaluation

- Management

- Complications

- Guide lines to with hold the newborn resuscitation

- Special circumstances

- Conclusion

d. Newborn life support Development of criteria checklist

A criteria checklist was prepared to develop SIM based on literature review and the opinion of aspects. The criteria check list consisted of 60 criterions statements under the broad headings of a) objectives b) contents (objective and appropriate) c) organization of the contents d) presentation e) language f) practicability g) acceptability h) any other suggestions. The draft of SIM and criteria check list was given to 9 experts for evaluation**.**

e. Content Validity of the Self Instructional Module

The initial draft of Self Instructional Module was given to 9 experts in the field along with the tool. The suggestions were incorporated in the self instructional module**.**

f. Preparation of the final draft of Self Instructional Module

The final draft of SIM was prepared after incorporating expert's suggestions. Some of the important factors considered while preparing self instructional module were simplicity of language and the content to cover all the items in the questionnaire for testing the knowledge. Description of Self Instructional Module

The SIM was titled ‒management of birth asphyxia‖. It includes a) introduction b) definition c) incidence d)Anatomy and Physiology of Respiratory System e)causes and risk factors f) clinical manifestations g) diagnostic evaluation h) management i) complications h) guidelines to withhold the resuscitations j) special circumstances k)conclusion l)newborn life support**.**

g. Description of training session

*Session of SIM was prepared to enhance the knowledge regarding management of birth asphyxia among staff nurses working in maternity hospitals and consisted of following content area***.**

PRESENTATION OF THE TOOL

Presenting of structured knowledge questionnaire was done to check the clarity of the items, their feasibility and practicability. Pre testing was done in Hi-Tech Medical College & Hospital, BBSR. It was administered to staff nurses working in Hi-Tech Medical College & Hospital, BBSR . The sample chosen were similar in characteristic to those of population under study. It takes 30 minutes to complete the tool for each sample and it was found that the items were simple and comprehend. The first draft of the tool consists of 60 items.

Based on pretesting and suggestion by experts, modification and rearrangement of few items were done and few items were not found appropriate by item analysis, so they were deleted. Thus, the second draft of the prepared tool consists of 36 items.

PILOT STUDY

Pilot study is a small scale version or trial run done in preparation for a major study‖. A Pilot study was conducted in Hi-Tech Medical College & Hospital, BBSR after obtaining formal administrative permission from Medical Director Hi-Tech Medical College & Hospital, BBSR . The pilot study was conducted from 01/09/2020to 07/09/2020 to find out the effectiveness of the tool and study in terms of enhancement of knowledge regarding the management of birth asphyxia. So, as to decide about their suitability of the final study. The topic was explained and confidentiality was assured and investigator collected data from 10 respondents with the purpose of findings feasibility of the study before starting the main study. Pre test Structured knowledge questionnaire was given to10 staff nurses. On the same day, Self Instructional Module was given and after one week post test was conducted with the same structured questionnaire. The value was $r = 0.891$ and $r^1 = 0.94$. The tool was found to be reliable and feasible for the main study.

Findings of the pilot study:

The overall pre test mean percentage is 45.2% with the SD of 8.02 and the overall

- post test mean percentage is 84% with a SD of 4.44 regarding the management of birth asphyxia.

- The post test mean (7.95) with the SD of 8.02 is higher than the pre test(4.35) with the SD of 4.44 and found significant at the **t=1.13(P<0.001*).**

- There was association between the pre test knowledge score regarding management of birth asphyxia with the selected demographic variable like age and experience. Hence, the H_1 is accepted. And there was no significant association between the pre test knowledge score regarding management of birth asphyxia with the selected demographic variable like gender, marital status, type of family, education, place of residence, source of information, number of resuscitation performed. Hence, the H_1 is rejected.

Problem faced during the pilot study:

It consumed more time to collect the data from the staff nurses because of their busy schedule.

PROCEDURE FOR DATA COLLECTION:

➢ Prior to data collection, permission was obtained from the concerned authority. The investigator personally visited to Hi-Tech Medical College & Hospital ,BBSR and introduced herself to the Medical superintendent and explained the purpose of the study. The investigator started the data collection for the

main study from respective areas. The study commenced from 1/10/2020 to 31/10/2020.

➢ The survey was done in Hi-Tech Medical College & Hospital, BBSR to identify the staff nurses who met the sampling criteria, 60 staff nurses of were selected purposefully for the study and assessed the knowledge of staff nurse regarding the management of birth asphyxia.

➢ The investigator introduced herself and the consent was obtained from staff nurses and they were reassured about the confidentiality of the study.

➢ For pre test, everyday an average of 7-8 staff nurses were selected to conduct the study. The structured knowledge questionnaire was administered for 30 minutes per participants.

➢ After administering the structured knowledge questionnaire on the same day, Self Instructional Module was distributed.

➢ After one week, post test was conducted with the same structured knowledge questionnaire to the same staff nurses to assess the knowledge of staff nurses regarding the management of birth asphyxia.

THE PLAN FOR DATA ANALYSIS

The data collected from the participants were grouped and analyzed with the help of statistical analysis. The data analysis was planned to include descriptive and inferential statistics

Statistical analysis of the data:

- Organization of data in master sheet

- Frequencies and percentages to be used for analysis of demographic data

- Calculation of mean, median, mean % and standard deviation of knowledge scores

- Paired _t' test was used to evaluate the effectiveness of self instructional module on management of birth asphyxia Chi-square (x^2) test was used to determine the association between knowledge scores with selected demographic variables.

- The findings were presented in tables and graphs.

ETHICAL ISSUES:

The proposed study was conducted after the approval of dissertation committee of the college. Permission was obtained from the head of maternity hospital. The written consent of the participants was obtained before the data collection. Assurance was given to the participants regarding the confidently. The subjects were informed that their participation was voluntary, had the freedom to drop out the training programme at anytime.

SUMMARY:

This chapter has dealt with research approach, research design, setting, samples, sampling technique, criteria for sample selection, development and description of the tool, pilot study, data collection procedure, plan for data analysis and ethical issues

CHAPTER-4

DATA ANALYSIS AND INTERPRETATION

Analyzing the collected data for the purposes of summarizing information to make it more usable and/or making generalizations about a population based on a sample drawn from that population.

This chapter deals with analysis and interpretation of data collected from 60 staff nurses on management of birth asphyxia. Keeping in a view, the objectives of the study used evaluative survey approach which was adopted to assess the effectiveness of Self Instructional Module on knowledge regarding management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar.

The data was collected from the respondents before and after giving the self instructional module. The collected information was organized, tabulated, analyzed and interpreted using descriptive and inferential statistics. Analysis was done based on the objectives and hypothesis of the study.

OBJECTIVES OF THE STUDY:-

1. To assess the existing level of knowledge regarding management of birth asphyxia among staff nurses.
2. To develop and administer a Self Instructional Module on management of birth asphyxia.
3. To evaluate the effectiveness of Self Instructional Module regarding management of birth asphyxia among staff nurses by post test knowledge score.
4. To find an association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variable such as age, sex, religion, marital status, type of family, education, place of residences, years of working experiences, etc.

HYPOTHESIS:-

❖ **H₁**- The mean post test knowledge scores regarding management of birth asphyxia among staff nurses is significantly higher than the mean pretest knowledge scores at 0.05 and 0.0 1 level of significance.
❖ **H₂**- There is significant association between the mean pretest knowledge scores regarding the management of birth asphyxia among staff nurses with selected socio-demographic variables such as age, sex, religion, marital status, type of family, education, place of residences, year of experience in maternity hospital, sources of information and number of newborn resuscitation performed at 0.05 and 0.01 level of significance.

PRESENTATION OF THE DATA:

The data were presented under the following headings**:**

Section A: Description of selected demographic variables of the staff nurses.

Section B: Mean, Median, Mean % and Standard deviation of the pre and posttes knowledge scores of staff nurses regarding management of birth asphyxia.
Section C: Evaluate the effectiveness of self-instructional module on management of birth asphyxia
Section D: Association between pretest knowledge with selected their demographic variables.

SECTION – A

DESCRIPTION OF DEMOGRAPHIC VARIABLES TABLE 1.1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF THE RESPONDENTS BY AGE IN YEARS:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Age in years:		
a. Below 25 yrs	17	28.3%
b.25-30 yrs	22	36.6%
c. 30-35 yrs	14	23.3%
d. 35 yrs &above	7	11.6%
Total	**60**	**100%**
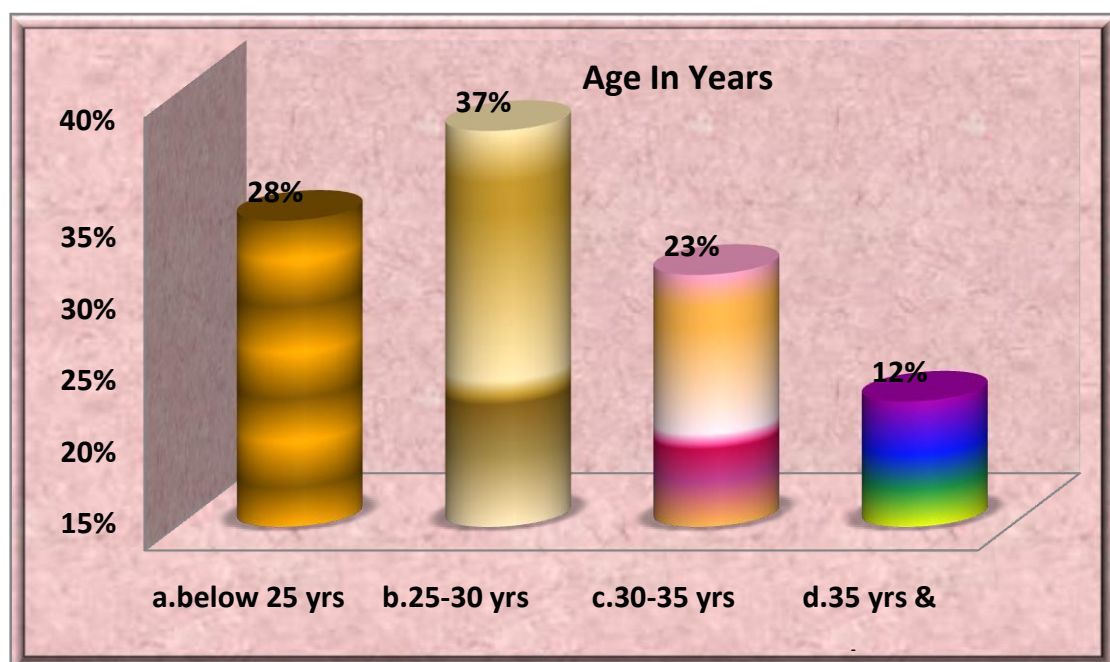
Fig. 5: Distribution of Age in year.

The above table and cylindrical diagram shows that Majority (37%) of the respondents belongs to the age group of 25-30 years, 28% belongs to the age group of below 25 years, 23% belongs to the age group of 30-35 years and only 12% belongs to the age group of 35 years & above respectively.

TABLE-1.2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY SEX:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Sex: a. Male	24	40%
b. Female	36	60%
Total	**60**	**100%**
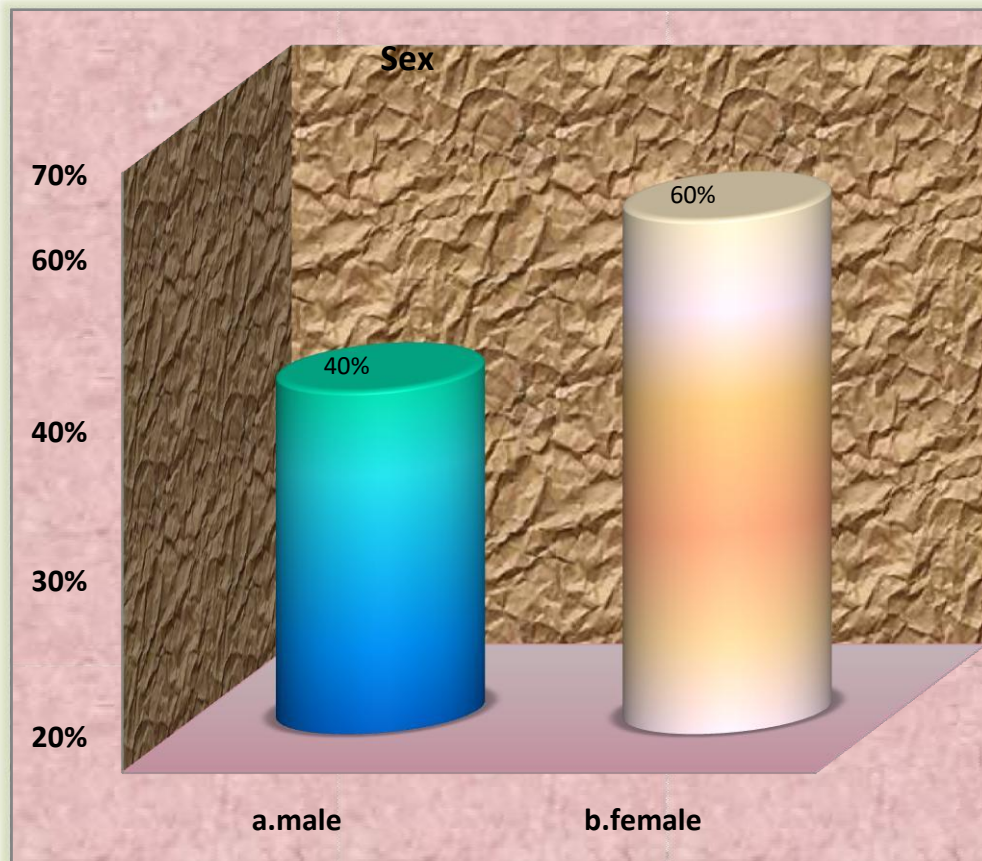
Fig 6: Distribution of Gender

The above table and cylinder diagram shows that Majority (60%) of the respondents are female and 40% of the respondents are male respectively.

TABLE-1.3:FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY MARITAL STATUS:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Marital status: a. Married	37	61.6%
b. Unmarried	23	38.3%
Total	**60**	**100%**
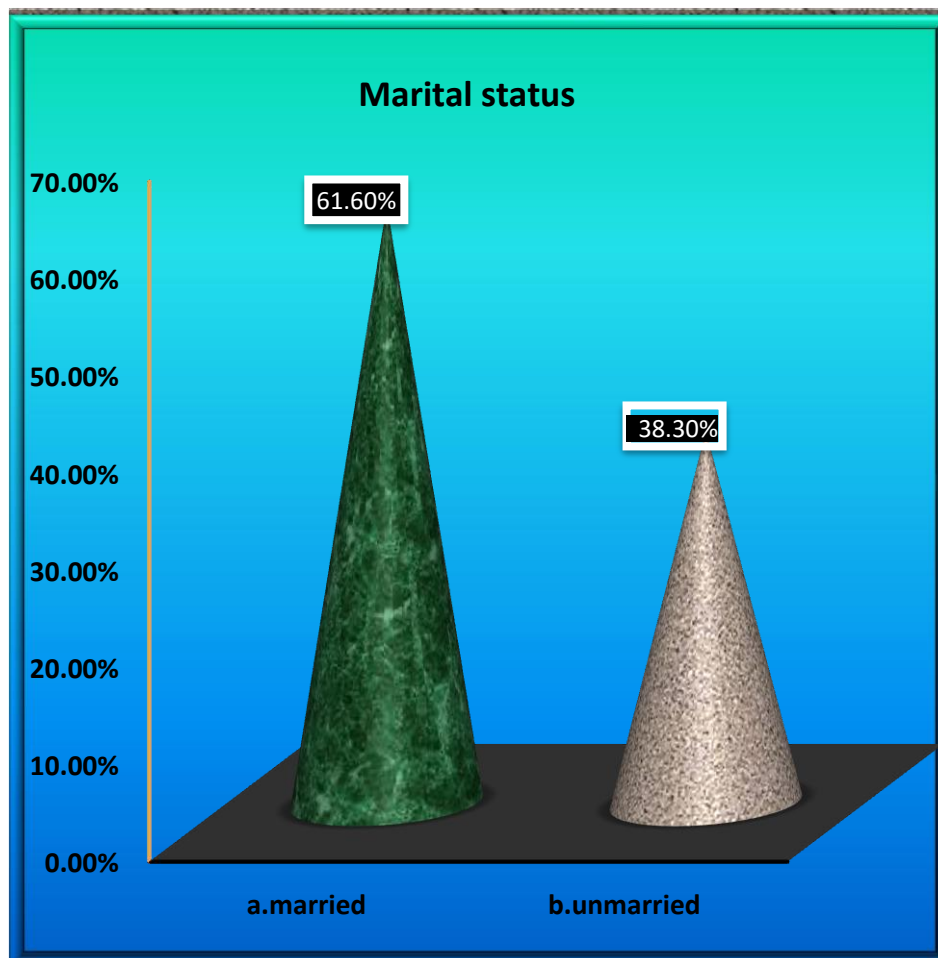
Fig 7: Distribution of Marital status

The above table and triangle diagram shows that Majority (62%) of the respondents are married, and the remaining 38% of the respondents are unmarried respectively.

TABLE-1.4: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY TYPE OF FAMILY:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Type of family: a. Single parent family	10	16.6%
b. Nuclear family	36	60%
c. Joint family	14	23.3%
d. Extended family	0	0%
Total	**60**	**100%**
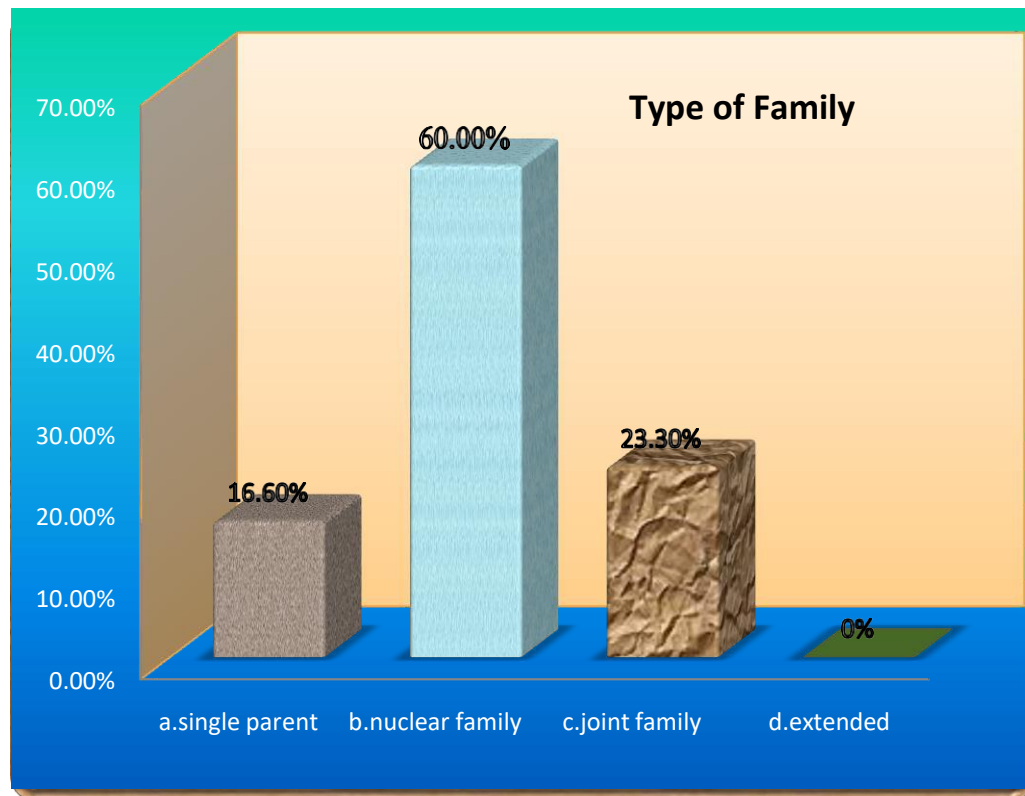
Fig 8: Distribution of type of family

The above table and bar diagram shows that Majority (60%) of the respondents belongs to the nuclear family, 23% belongs to the joint family and only 17% belongs to single parent family and none of the respondents belongs to the extended family respectively.

TABLE-1.5: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS EDUCATIOAL STATUS:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Educational Status:		
a. G.N.M	34	56.6%
b. B. Sc. Nursing	15	25%
c. P.B. B.Sc. Nursing	7	11.6%
d. M.Sc. Nursing	4	6.6%
Total	**60**	**100%**

Fig 9: Distribution of Education
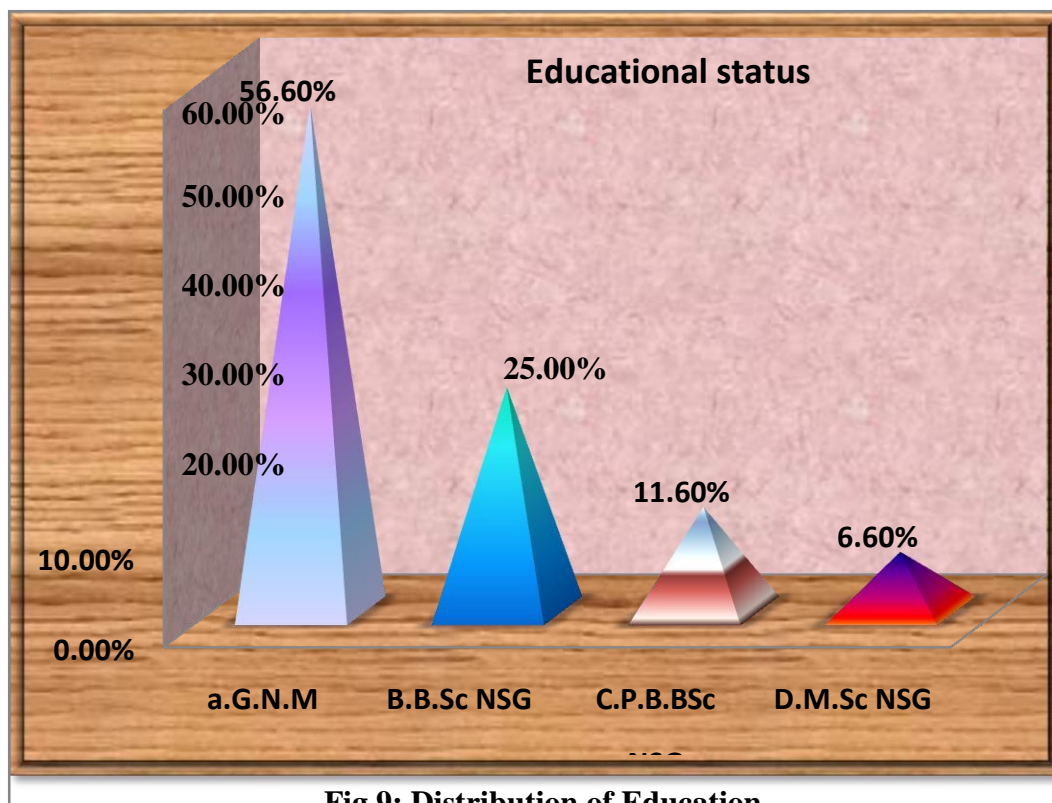
The above table and pyramid diagram shows that Majority 63.3% are G.N.M staff, 3.3% are P.B. B.Sc. Nursing , 26.6% are B.Sc. Nursing and only 6.8% are M.Sc. Nursing staffs respectively.

TABLE-1.6: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY YEARS OF WORKING EXPERIENCES:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Years of working experiences: a. Less than 1 yrs.	7	11.6%
b.1-2 yrs.	11	18.3%
c.2-3yrs	20	33.3%
d. More than 3yrs	22	36.6%
Total	**60**	**100%**
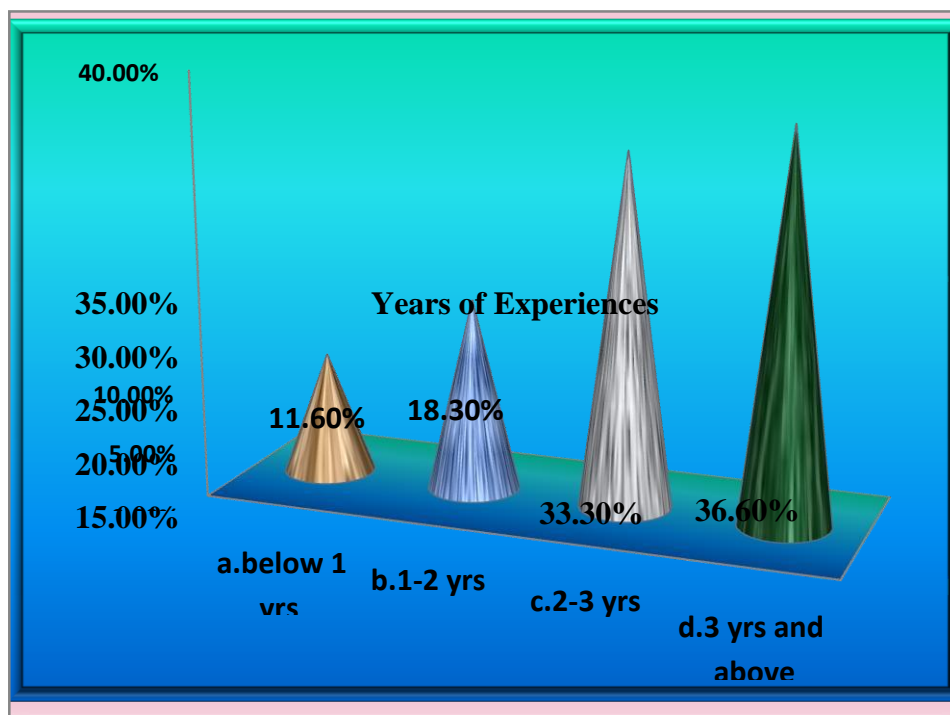
Fig 10: Distribution of years of working experiences

The above table and bar diagram shows that Majority (36.6%) of the respondents are having more than 3 yrs. of working experiences, 33.3% of the respondents are having 2- 3yrs experiences, 18.3% of the respondents are having 1-2 yrs. experiences and only 11.6% of the respondents are having less than 1year experiences respectively

TABLE–1.7: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY PLACE OF RESIDENCE:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Place of Residence:		
a. Urban	44	73.3%
b. Rural	16	26.6%
Total	**60**	**100%**
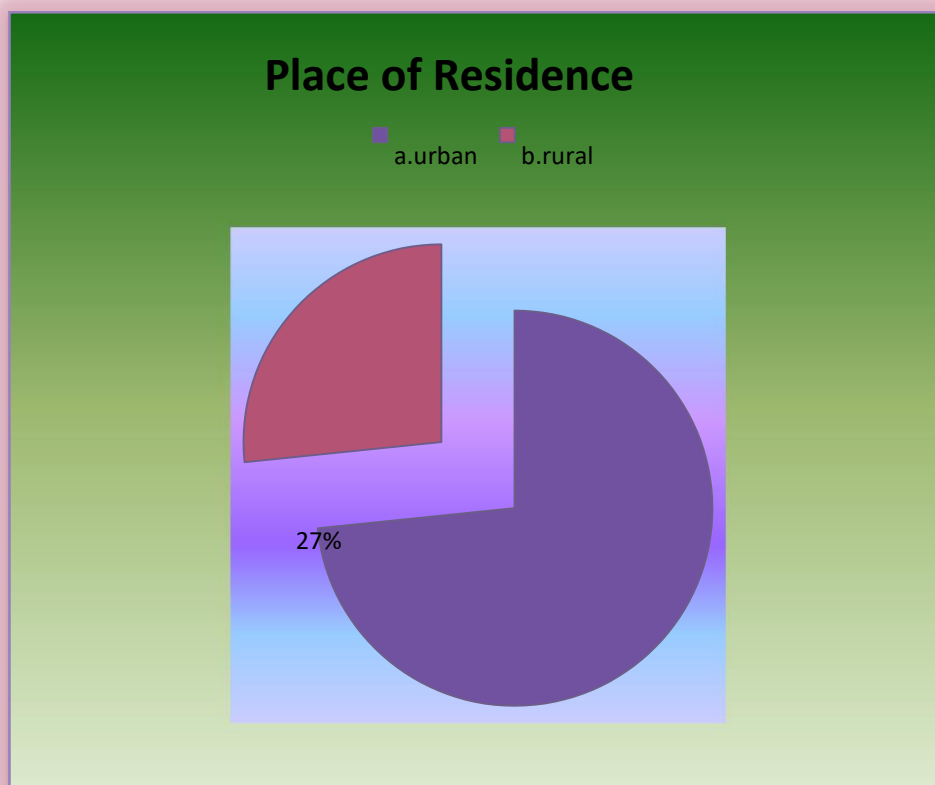
Fig 11: Distribution of place of residence

The above table and Pie diagram denotes that Majority (73.3%) of the respondents are belongs to urban area and only 26.6% of the respondents are belongs rural area respectively.

TABLE – 1.8: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY SOURCES OF INFORMATION:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Sources of information: a. Mass media	9	15%
b. Academic education	38	63.3%
c. Friends and Collegues	4	6.6%
d. Continuing education programme	9	15%
Total	**60**	**100%**
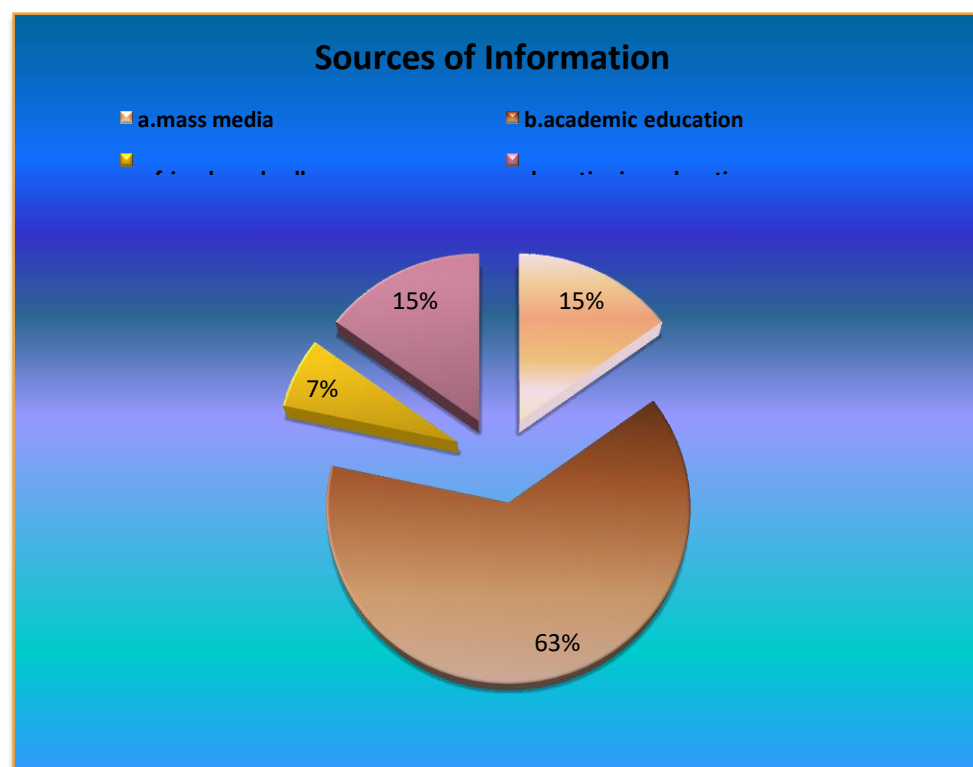
Fig 12: Distribution of source of information

The above table and Pie diagram denotes that Majority (63.3%) have got information from academic education, 15% have got information from mass media and continuing education programme and only 6.6% have got information from friends and colleagues.

TABLE -1.9: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY NUMBER OF RESUSCITATION OF NEWBORN PERFORMED DURING THE SERVICES:

N=60

VARIABLES	FREQUENCY	PERCENTAGE
Number of newborn resuscitation performed during the services: a. Not done	15	25%
b.1-5 times	32	53.3%
c. 6-10 times	2	3.3%
d. More than 10 times	11	18.3%
Total	**60**	**100%**
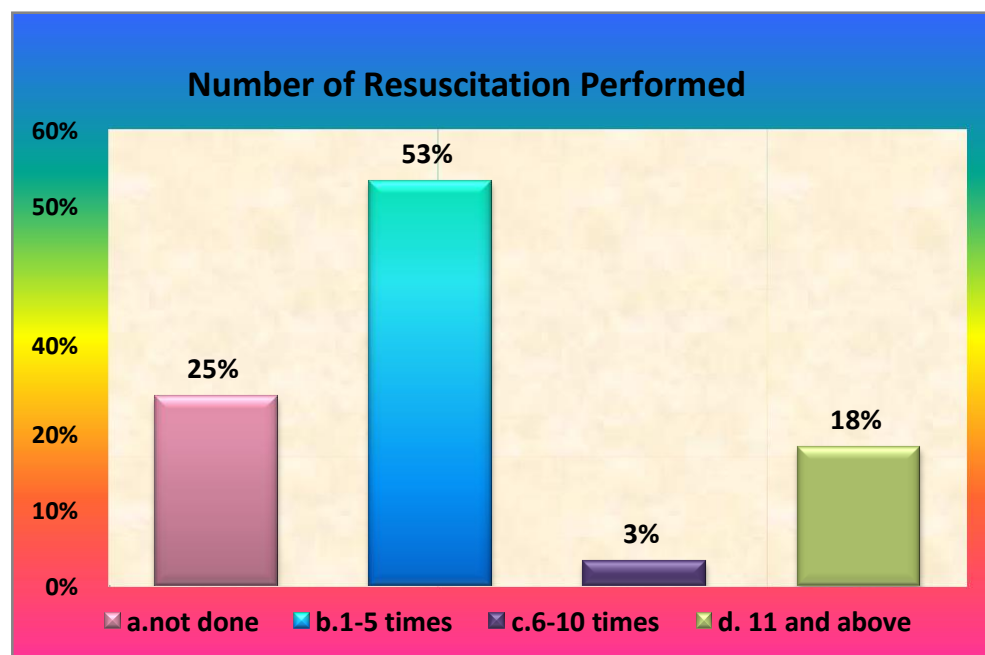
Fig 13: Distribution of Number of newborn resuscitation performed during the services.

The above table and bar diagram shows that Majority (53.3%) of the respondents have performed 1-5 times newborn resuscitation during their service, 25% of the respondents have not done the newborn resuscitation and 18.3% of the respondents have performed more than 10 times and only 3.3% of the respondents have performed 6-10 times newborn resuscitation during their service.

SECTION – B

TABLE 2.1- ASPECT WISE MEAN, MEAN%, MEDIAN, RANGE AND SD OF THE PRETEST KNOWLEDGE SCORE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES:

N=60

Sl. No	Aspect of Knowledge Items	No.of items	Max. score	Mean	Mean%	Median	Range (L -H)	Standard deviation
1.	Anatomy and physiology	6	6	2.7	45%	2	0-6	1.13
2.	Birth asphyxia	2	2	0.95	47.5%	1	0-2	0.76
3.	Causes	4	4	1.36	34%	1	0-4	1.05
4.	Clinical manifestation	3	3	1	33.3%	1	0-3	0.88
5.	Diagnostic Evaluation	1	1	0.26	26.6%	0	0-1	0.44
6.	Management of birth asphyxia	14	14	5.6	40%	6	0-10	2.27
7.	Complication	2	2	1.1	55%	1	0-2	0.72
8.	Guidelines of management of birth asphyxia	2	2	1.06	53%	1	0-2	0.70
9.	Special Circumstances	2	2	1.21	60.5%	1	0-2	0.69
	Total	**36**	**36**	**15.246**	**42.35%**			**8.6811**
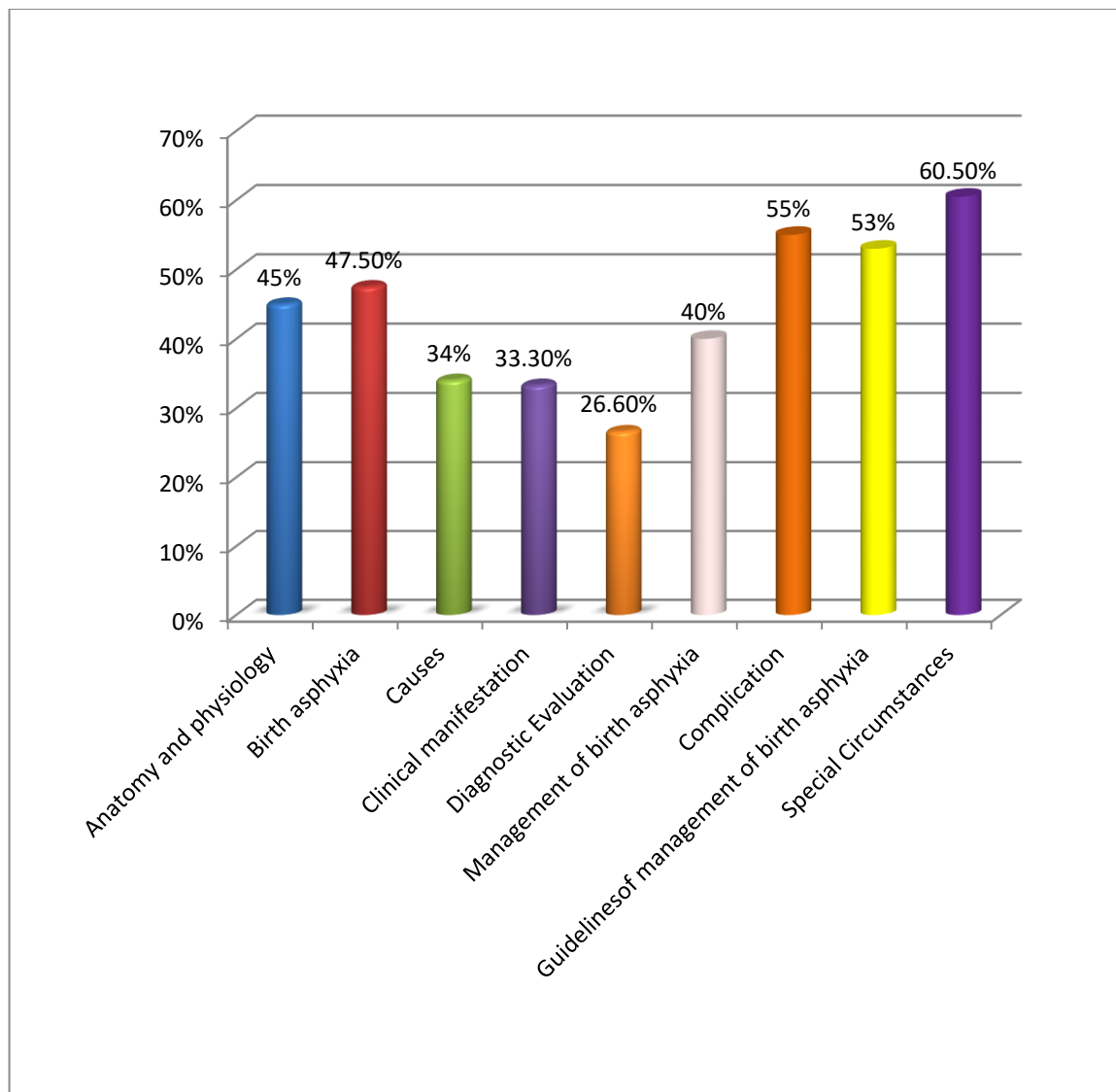
Fig14: Cylindrical diagram represents the distribution aspect wise Mean% of Pretest Knowledge scores regarding management of birth asphyxia among staff nurses.

The above table-2.1and cylindrical diagram shows that in pre test, the highest mean percentage is 60.5% with SD of 0.69 in the aspects of special circumstances, 55% with SD of 0.72 in aspect of complication, 53% with SD of 0.70 in aspect of guidelines of management of birth asphyxia, 47.5% with SD of 0.76 in aspect of basic concept of birth asphyxia, 45% with SD of 1.13 in aspect of Anatomy and Physiology, 40% with SD of 2.27 in aspect of management of birth asphyxia, 34% with SD of 1.05 in aspect of causes and risk factors, 33.33% with SD of 0.88 in aspect of clinical manifestation and the lowest mean percentage is 26.6% with SD of 0.44 in aspect of diagnostic evaluation .The over all mean percentage in pre test knowledge score regarding management of birth asphyxia among staff nurses is 42.35% with SD of 8.68.

TABLE 2.2: LEVEL OF PRE TEST KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES:

N=60

LEVEL OF KNOWLEDGE	NUMBER	PERCENTAGE
INADEQUATE (<50%)	48	80%
MODERATELY ADEQUATE (51-75%)	12	20%
ADEQUATE (>75%)	0	0%
TOTAL	**60**	**100%**
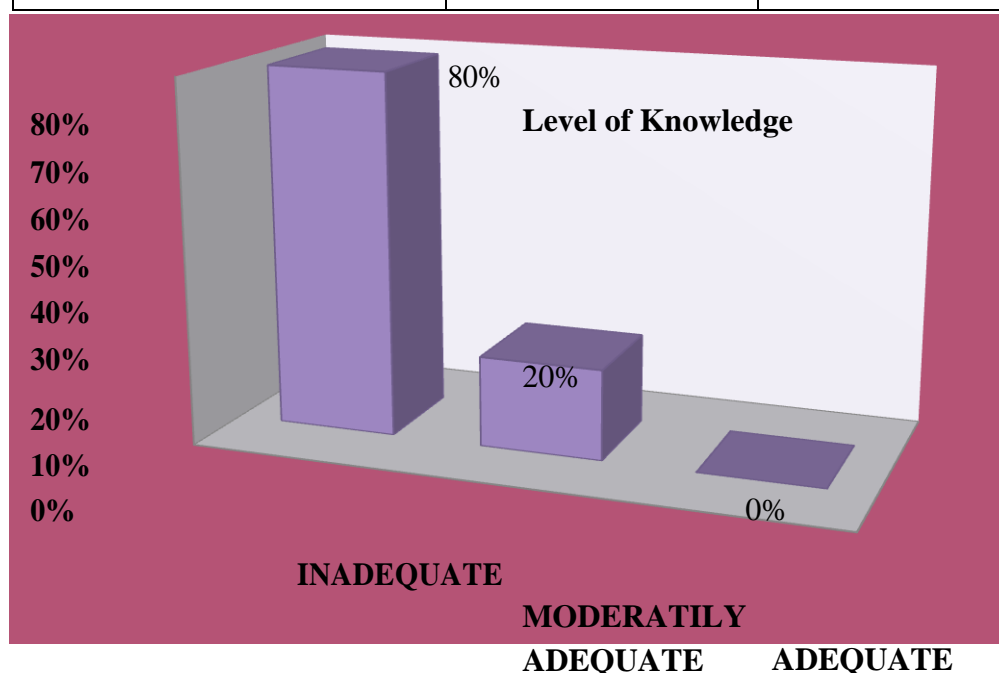
Figure 15: Bar diagram represents the level Pre Test Knowledge Regarding Management of Birth Asphyxia among staff nurses

The above table and bar diagram reveal that pre test knowledge scores shows that majority (80%) of respondents have inadequate knowledge and only 20% have moderately knowledge and none of them have adequate knowledge regarding management of birth asphyxia among staff nurses.

TABLE-2.3 ASPECT WISE MEAN, MEAN%, MEDIAN, RANGE & SD OF THE POST TEST KNOWLEDGE SCORES REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES:

N=60

Sl. No	Aspect of Knowledge items	No. Of Items	Max. Score	Mean	Mean%	Median	Range (L-H)	Standard Deviation
1.	Anatomy and physiology	6	6	5.9	98.33%	6	5-6	0.3
2.	Birth asphyxia	2	2	2	100%	2	1-2	0.2
3.	Causes	4	4	3.6	90%	4	2-4	0.7
4.	Clinical manifestation	3	3	2.7	90%	3	1-3	0.5
5.	Diagnostic evaluation	1	1	0.85	85%	1	0-1	0.36
6.	Management of birth asphyxia	14	14	13	92.85%	13	9-14	1.2
7.	Complication	2	2	1.7	85%	2	1-2	0.5
8.	Guidelines of management of birth asphyxia	2	2	1.77	88.5%	2	1-2	0.43
9.	Special Circumstances	2	2	1.6	80%	2	1-2	0.5
	Total	**36**	**36**	**33.12**	**92%**	**35**		**5.43487**
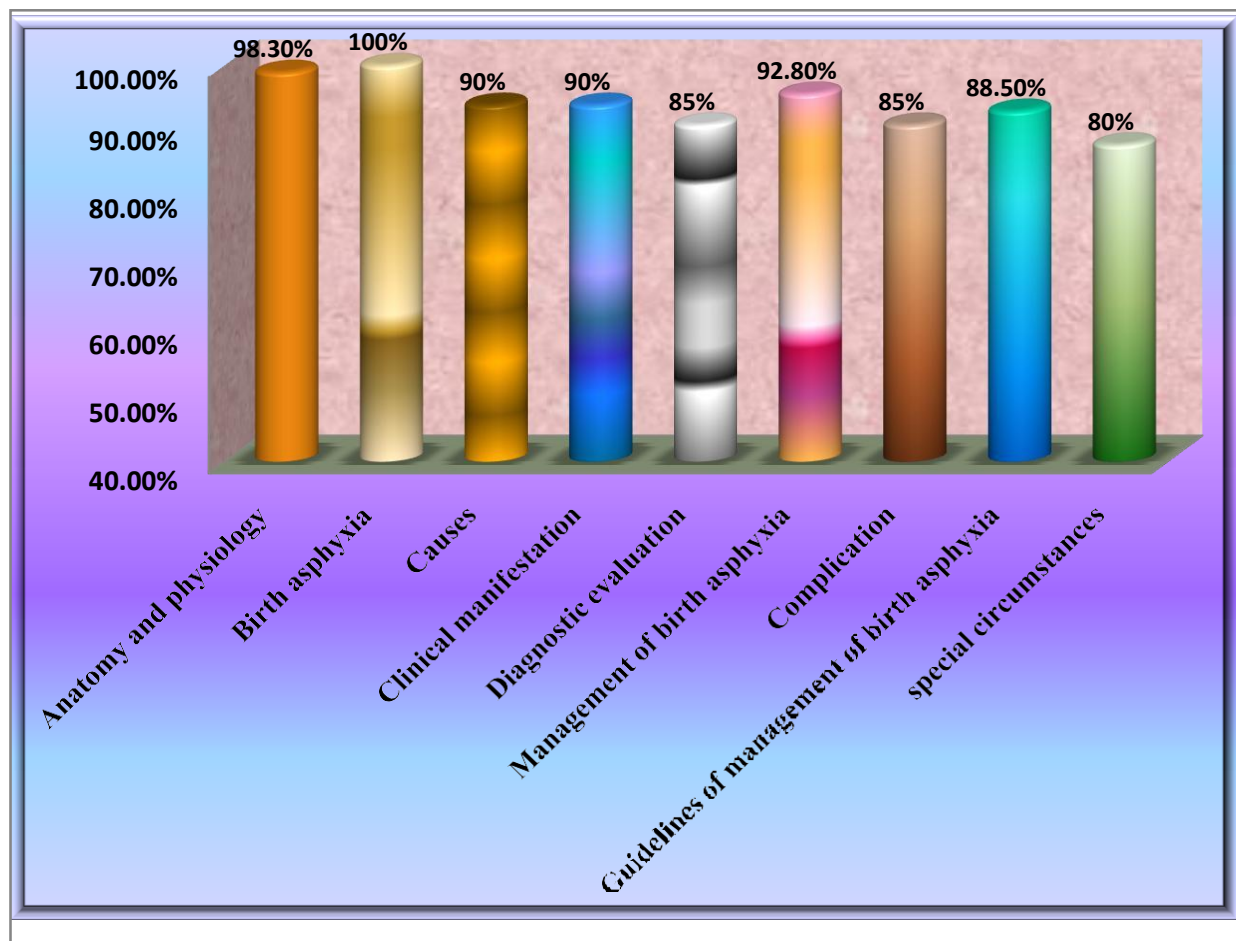
FIG: 16 - Cylindrical diagram represents the Aspect wise Mean% of the Post Test Knowledge Scores regarding management of birth asphyxia among staff nurses

The above table-2.3 and cylindrical diagram shows that in the posttest, the highest the mean percentage is 100% with SD of 0.2 in aspects of basic concept of birth asphyxia, 98.3% with SD of 0.3 in aspects of Anatomy and Physiology, is 92.8% with SD of 1.2 in aspect of management of birth asphyxia, 90% with SD of 0.7 in aspect of causes and risk factors, 90% with SD of 0.5 in aspect of clinical manifestation, 88.5% with SD of 0.43 in aspect of guidelines of management of birth asphyxia, 85% with SD of 0.36 in aspect of diagnostic evaluation, 85% with SD of 0.5 in aspect of complication, in and the lowest mean percentage is 80% with SD of 0.5 in aspect of special circumstances. The overall mean percentage in the post test knowledge scores regarding management of birth asphyxia among staff nurses is 92% with SD of 5.43.

TABLE-2.4: LEVEL OF POSTTEST PERCENTAGE OF KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES:

N=60

LEVEL OF KNOWLEDGE	NUMBER	PERCENTAGE
Inadequate (<50%)	0	0%
Moderately Adequate (51-75%)	8	13.3%
Adequate (>75%)	52	86.7%
Total	**60**	**100%**
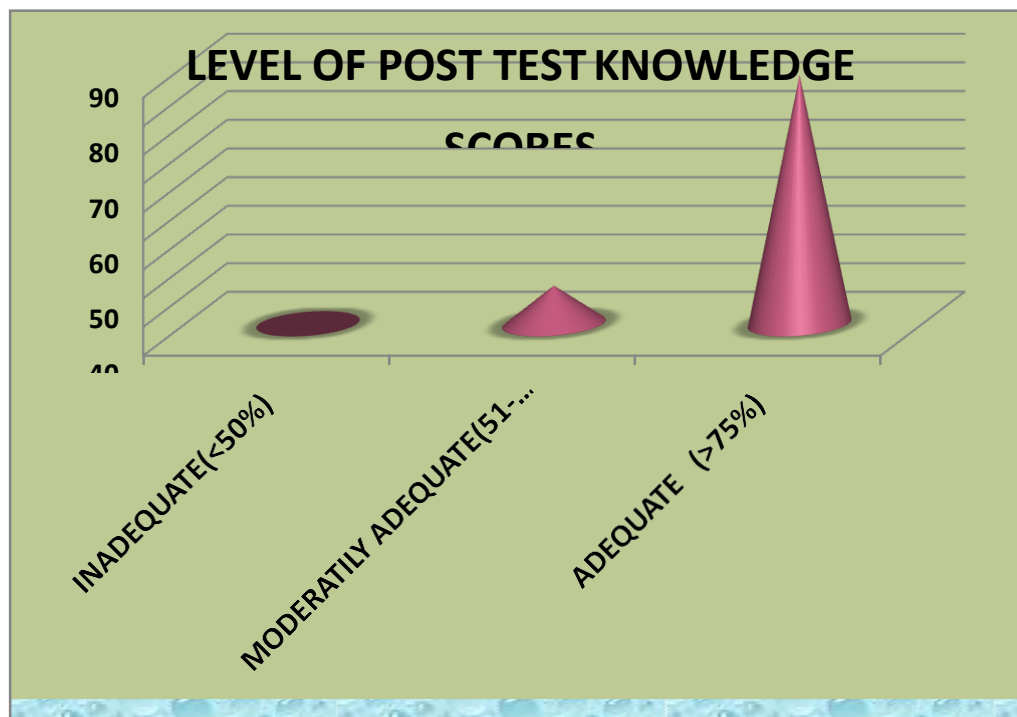
Figure17: Cone diagram represents the level Post Test Knowledge Regarding Management of Birth Asphyxia among staff nurses

The above table and cone diagram reveal that post test knowledge scores shows that Majority (86.6%) of respondents have adequate knowledge and 13.3% respondents have

moderately knowledge and none of them have inadequate knowledge regarding management of birth asphyxia**.**

SECTION - C

EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES:

TABLE-3.1: ENHANCEMENT OF KNOWLEDGE WITH PRE TEST AND POST TEST SCORES:

N=60

| Sl. No.	Aspects Of Knowledge Items	Max. Score	Pre Test		Post Test		Enhancement In Mean Score
			Mean	Mean%	Mean	Mean %	%
1.	Anatomy And Physiology	6	2.7	45%	5.9	98.33%	53.3%
2.	Birth Asphyxia	2	0.95	47.5%	2	100%	52.5%
3.	Causes	4	1.36	34%	3.6	90%	56%
4.	Clinical Manifestation	3	1	33.3%	2.7	90%	56.6%
5.	Diagnostic Evaluation	1	0.266	26.6%	0.85	85%	58.4%
6.	Management o f Birth Asphyxia	14	5.6	40%	13	92.85%	52.85%
7.	Complication	2	1.1	55%	1.7	85%	30%
8.	Guidelines of Management of Birth Asphyxia	2	1.06	53%	1.77	88.5%	35.5%
9.	Special Circumstances	2	1.21	60.5%	1.6	80%	19.5%
	T0TAL	36	15.246	42.35%	33.12	92%	46.07%
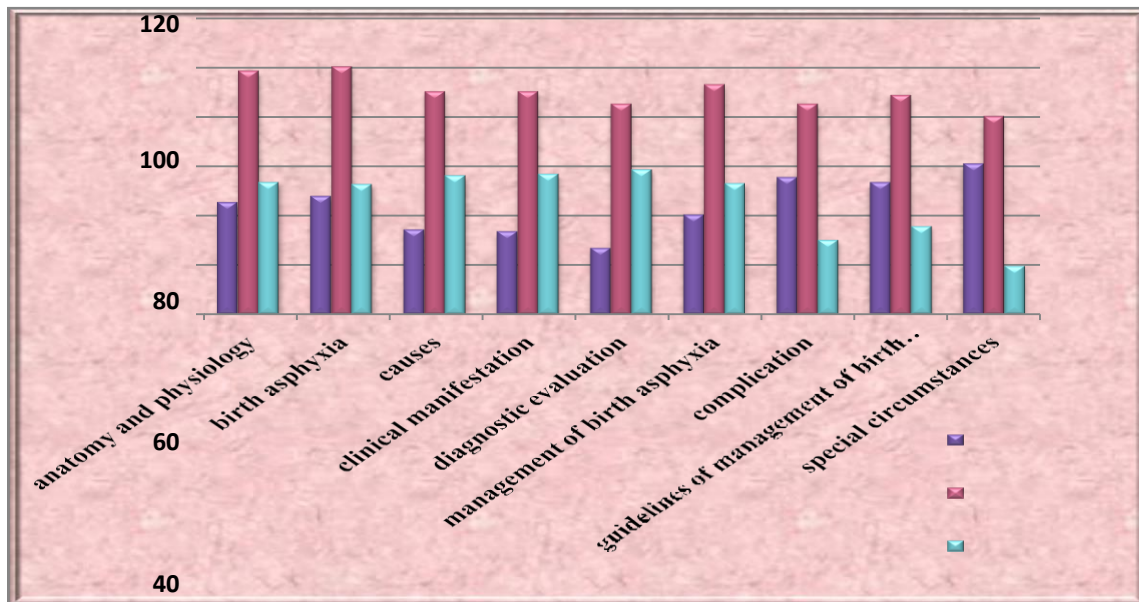
Fig18; Bar diagram represents the Enhancement of Knowledge with Pre Test and Post Test scores regarding management of birth asphyxia among the staff nurses

The above table-3.1and bar diagram reveals that enhancement of knowledge regarding management of birth asphyxia with pre test and post test scores. In pre test, management of birth asphyxia aspect the mean percentage is 40%, in post test it is 92.85% with the enhancement of 52.85%, same like that anatomy and physiology aspect the mean percentage is 45%, in post test it is 98.3% with the enhancement of 53.3%,in causes and risk factors aspect the mean percentage is 34%, in post test it is 90% with the enhancement of 56%, in special circumstances aspect the mean percentage is 60.5%,in post test it is 80% with the enhancement of 19.5%,in complication aspect the mean percentage is 55%, in post test it is 85% with the enhancement of 30%,in guidelines to withhold the resuscitation aspect the mean percentage is 53%, in post test it is 88.5% with the enhancement of 35.5%,in clinical manifestation aspect the mean percentage is 33.3%,in post test it is 90% with the enhancement of 56.6%,in basic concepts of birth asphyxia aspect the mean percentage is 47.5%,in post test it is 100% with the enhancement of 52.5%,in diagnostic evaluation aspect the mean percentage is 26.6%,in post test it is 85% with the enhancement of 58.4%.

The overall pre test mean percentage is 42.35% and post test mean percentage is 92% and the enhancement in the knowledge by 46.07%.This indicates that the self instructional module (SIM) is effective increasing the knowledge regarding management of birth asphyxia among staff nurses.

TABLE-3.2 LEVEL OF KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES:

N=60

LEVEL OF KNOWLEDGE	(<50%)		(51-75%)		(>75%)	
	Frequency	percentage	frequency	percentage	frequency	Percentage
Pre Test	48	80%	12	20%	0	0
Post Test	0	0	8	13.33%	52	86.66%
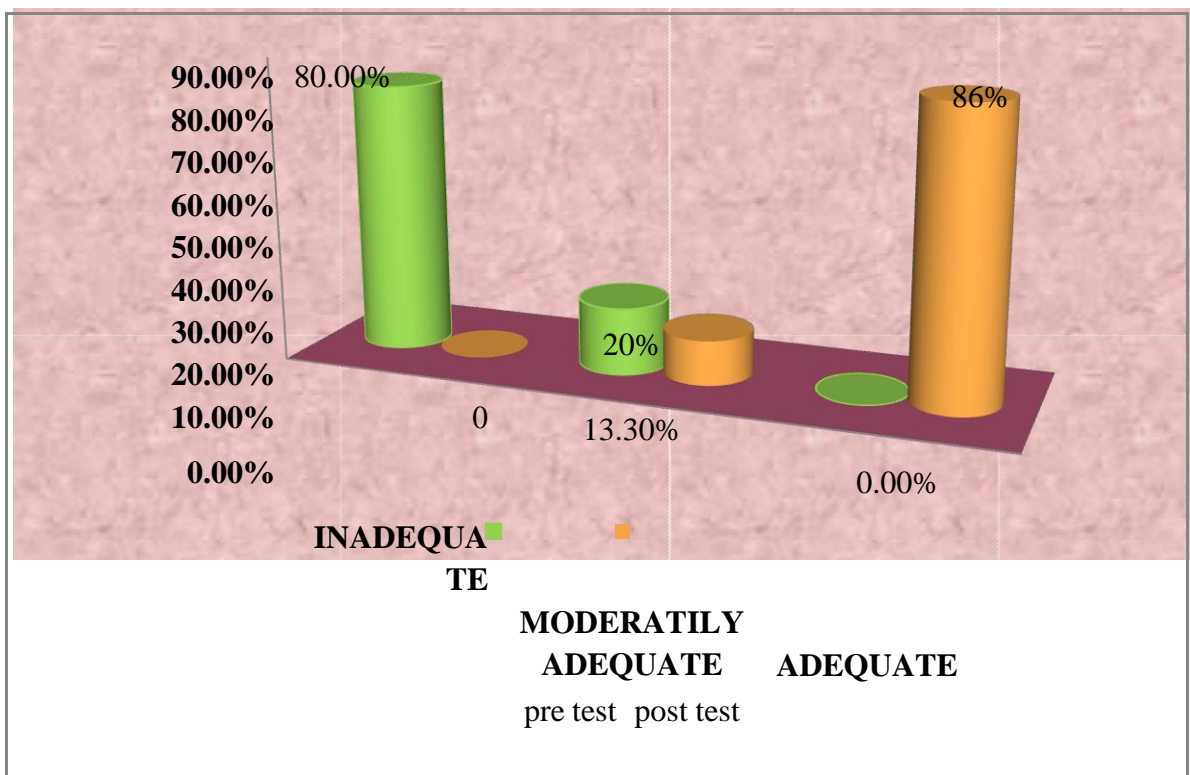
Figure 19: cylindrical diagram represents the Level of Knowledge Regarding Management of Birth Asphyxia among staff nurses

The above table and cylindrical diagram reveal that pre test knowledge scores shows that majority (80%) of respondents have inadequate knowledge and only 20% have moderately knowledge and none of them have adequate knowledge regarding management of birth asphyxia respectively during pretest. After Self Instructional Module post test knowledge scores shows that majority (86.6%) of respondents have adequate knowledge and 13.3% respondents have moderately knowledge and none of them have inadequate knowledge regarding management of birth asphyxia respectively during post test.

TABLE-3.3: EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON MANAGEMENT OF BIRTH ASPHYXIA:

N=60

Sl.No.	Aspects of Knowledge Items	Pre Test		Post Test		t Value	Df	P Value Inference
		Mean	SD	Mean	SD			
1.	Anatomy And Physiology	2.7	1.13	5.9	0.3	21.201	59	<0.0001S**
2.	Birth Asphyxia	0.95	0.768	2	0.2	10.2484	59	<0.0001S**
3.	Causes	1.36	1.057	3.6	0.7	13.6862	59	<0.0001S**
4.	Clinical Manifestation	1	0.882	2.7	0.5	12.9881	59	<0.0001S**
5.	Diagnostic Evaluation	0.266	0.445	0.85	0.36	7.90315	59	<0.0001S**
6.	Management Of Birth Asphyxia	5.6	2.27	13	1.2	22.3239	59	<0.0001S**
7.	Complication	1.1	0.729	1.7	0.5	5.25749	59	<0.0001S**
8.	Guidelines of management of birth asphyxia	1.06	0.709	1.77	0.43	6.63242	59	<0.0001S**
9.	Special circumstances	1.21	0.6911	1.6	0.5	3.54151	59	<0.0001S**
	T0TAL	**15.246**	**8.6811**	**33.12**	**5.43487**	**13.518**	**59**	<0.0001S**

S=Significant, NS*=Non Significant**
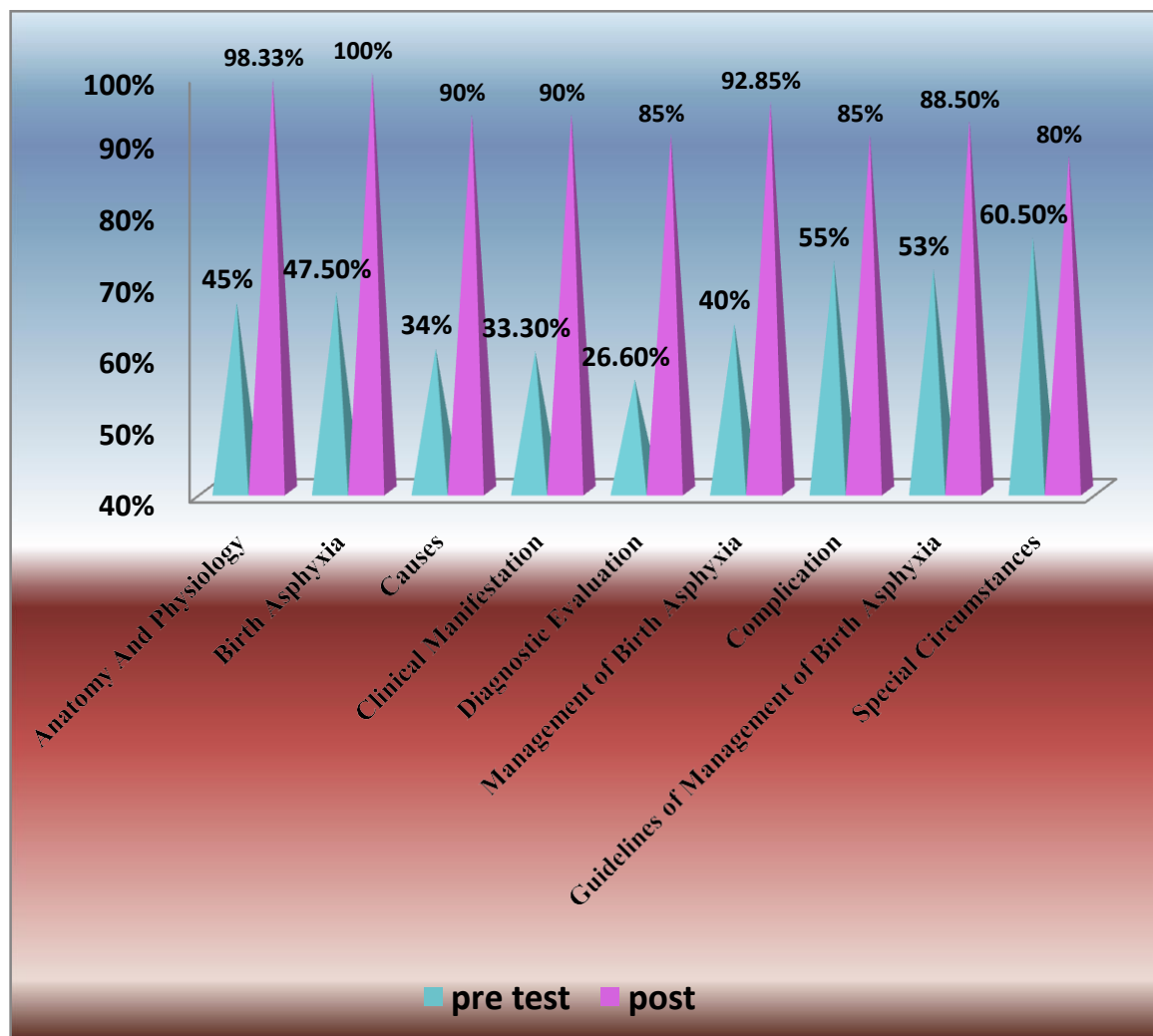
Fig 20: the pyramid diagram represents Effectiveness of Self Instructional Module on Management of Birth Asphyxia

The above table-3.3 reveals effectiveness of self instructional module on management of birth asphyxia. It shows that the overall mean post test knowledge score 33.12 with SD of 5.34 regarding management of birth asphyxia among staff nurses is higher than the overall mean pre test score 15.246 with SD of 8.68 and the statistical paired ‖t‖test value is **t= 13.518** and found to be significant **(p<0.0001)**. Hence, H_1 is accepted. It indicates the effectiveness of Self Instructional Module regarding management of birth asphyxia. Therefore, it shows that SIM is effective in increasing the knowledge regarding management of birth asphyxia among staff nurses

SECTION-D

TABLE 4: Association between knowledge score with selected demographic variables:

N=60

SL. No.	Demographic variables	Frequency	Knowledge variable		X^2	df	P value Inference
			Median & below median 14)	Above median (14)			
1.	**Age in years:**						
	a. Below 25 years	17	5	12	8.693	3	0.033
	b.25-30 years	22	14	8			S*
	c.30-35 years	14	11	3			
	d.35 years & above	7	2	5			
2.	**Sex:**						
	a.Male	24	10	14	5.601	1	0.017
	b. Female	36	22	14			S*
3.	**Marital status:**						
	a. Married	37	21	16	0.066	1	0.796
	b. Unmarried	23	11	12			NS
4.	**Type of family:**						
	a. Single parent family	10	5	5	7.911	2	0.019
	b. Nuclear family	36	25	11			S*
	c. Joint family	14	2	12			
	d. Extended family	0	0	0			
5.	**Educational Status:**						
	a.G.N.M.	34	20	14	9.434	3	0.024
	b. B. Sc. Nsg	15	7	8			S*
	c.P.B. B. Sc. Nsg	7	2	5			
	d. M.Sc. Nsg	4	3	1			
6.	**Years of working experiences:**						
	a.Below 1 years	7	3	4	9.719	3	0.021
	b. 1-2 years	11	6	5			S*
	c. 2-3 years	20	11	9			
	d. 3 years & above	22	12	10			
7.	**Place of residence:**				5.746	1	0.016
	a. Urban	44	20	24			S*
	b. Rural	16	12	4			
8.	**Sources of information:**						
	a.Mass media	9	7	2			
	b. Academic education	38	22	16	9.883	3	0.019
	c.Friends and colleagues	4	1	3			S*
	d.Continuing education programme	9	2	7			
9.	**Number of newborn resuscitation erformed:**						

a.Not done	15	8	7	9.706	3	0.021 S*
b. 1-5 times	32	14	18			
c.6-10 times	2	0	2			
d. More than 10	11	10	1			

NOTE: S* -- Significant at 0.05 level(P<0.05). , NS – Non significant at 0.05 level (P>0.05).

Data presented in the table: 18 indicated association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variables.

There exist a significant association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variables such as age(x^2=8.693), sex(x^2=5.601), type of family(x^2=7.911), educational status(x^2=9.434),year of working experiences (x^2=9.719), place of residence(x^2=5.746), sources of information(x^2=9.883), number of newborn resuscitation performed during your service(x^2=9.706). Hence, H_2 is accepted.

There was no significant association between the demographic variables like marital status (x^2=0.66). Hence, H_2 is rejected.

CHAPTER-5

DISCUSSION

The findings of the study have been discussed with reference to the objectives and hypothesis stated. The findings in the demographic characteristics and effectiveness of self instructional module on knowledge regarding management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar are compared with the findings of other studies.

STATEMENT OF THE PROBLEM:-

A study to assess the effectiveness of Self Instructional Module on knowledge regarding management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar.

OBJECTIVES OF THE STUDY:-

1.To assess the existing level of knowledge regarding management of birth asphyxia among staff nurses as measured by structured knowledge questionnaire.
2.To develop and administer a Self Instructional Module on management of birth asphyxia.

3.To evaluate the effectiveness of Self Instructional Module regarding management of birth asphyxia among staff nurses by post test knowledge score.

To find an association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variable such as age, sex, religion, marital status, type of family, education, place of residences, etc.

HYPOTHESIS:-

 ❖ H1- The mean post test knowledge scores regarding management of birth asphyxia among staff nurses is significantly higher than the mean pretest knowledge scores at 0.05 and 0.0 1 level of significance.

H2- There is significant association between the mean pretest knowledge scores regarding the management of birth asphyxia among staff nurses with selected

❖ socio-demographic variables such as age, sex, education, marital status, type of family, place of residence, year of experiences in maternity hospital, sources of information and number of newborn resuscitation performed during the service at 0.05 and 0.01 level of significance.

Findings of the study: Section – A: Demographic characteristics:

1. Age: - Majority (37%) of the respondents belonged to the age group of 25-30 years, 28% belongs to the age group of below 25 years, 23% belongs to the age group of 30- 35 years and only 12% belongs to the age group of 35 years & above respectively

This study is supported by **Sumithra** out of 30 subjects,11(36.7%) were in the age group of 36-40 years.8(26.7%) were in the age group of 31-35 years.7(23.3%) were in the age group of 41-45 years.3(10%) were in the age group of 26-30 years.1(3.3%) were in the age group of 35-50 years.

2. Sex: - Majority (60%) of the respondents were female and 40% of the respondents were male respectively. Similar findings are not found

3. Marital status:- Majority (62%) of the respondents were married, and the remaining 38% of the respondents were unmarried respectively. Similar findings are not found.

4. Type of family:- Majority (68.4%) of the respondents belonged to the nuclear family, 23.3% belonged to the single parent family and only 8.4% belonged to the joint family and none of the respondents belonged to the extended family respectively. Similar findings are not found

5. Educational Status: Majority 63.3% were G.N.M staff, 3.3% were P. B. B.Sc. Nursing, 26.6% were B. Sc. Nursing and only 6.8% were M.Sc. Nursing staff respectively. This study was supported by **Gangopathyay .S**, most of staff nurses 82% were GNM staff

6. Years of working experiences:- Majority (36.6%) of the respondents were having more than 3 yrs. of working experiences, 33.3% of the respondents were having 2-3yrs experiences, 18.3% of the respondents were having 1-2 yrs. experiences and only 11.6% of the respondents are having less than 1year experiences respectively.

This study is supported by **Raichel** stated that 43.33 % were having an experience of 1

– 5 years, 35 % were having an experience of 6- 10 years, 11.67 % were having an experience of 11-15 years and 10 % of staff nurses were having more than 15 years experience.

7. Place of residence: - Majority (73.3%) of the respondents belonged to urban area and only 26.6% of the respondents belonged rural area respectively. Similar findings are not found.

8. Source of information:- Majority (63.3%) have got information from academic education, 15% have got information from mass media and continuing education programme and only 6.6% have got information from friends and colleagues.

This study is supported by **Raichel** which stated that 53.33 % were attended and

46.67 % have not attended In-service education/ Work shop/ Seminar. Similar findings are not found.

9. Number of newborn resuscitation performed during the services:- Majority(53.3%) of the respondents have performed 1-5 times newborn resuscitation during their service, 25% of the respondents have not done the newborn resuscitation and 18.3% of the respondents have performed more than 10 times and only 3.3% of the respondents have performed 6-10 times newborn resuscitation during their services. The findings of the study are consistent to the study conducted by **Teresa Joseph** shows that experience in assisting with neonatal resuscitation was 70% of sample and 30% of them never assisted in neonatal resuscitation.

2: Aspect wise mean median, range and SD of the pretest knowledge scores regarding management of birth asphyxia:

The present study revealed that in pre test, the highest mean percentage is 60.5% with SD of 0.69 in the aspects of special circumstances, 55% with SD of 0.72 in aspect of complication, 53% with SD of 0.70 in aspect of guidelines of management of birth asphyxia, 47.5% with SD of 0.76 in aspect of basic concept of birth asphyxia, 45% with SD of 1.13 in aspect of Anatomy and Physiology, 40% with SD of 2.27 in aspect of management of birth asphyxia, 34% with SD of 1.05 in aspect of causes and risk factors, 33.33% with SD of 0.88 in aspect of clinical manifestation and the lowest mean percentage is 26.6% with SD of 0.44 in aspect of diagnostic evaluation. The over all mean percentage in pre test is 42.35% with SD of 8.68.

This study is supported by **Raichel** who showed that the existing level of knowledge score of Newborn resuscitation of staff nurses is 60 (100%) had inadequate knowledge and 0% of them were having moderate and adequate knowledge.

The posttest revealed that the highest the mean percentage is 100% with SD of 0.2 in aspects of basic concept of birth asphyxia, 98.3% with SD of 0.3 in aspects of Anatomy and Physiology, is 92.8% with SD of 1.2 in aspect of management of birth asphyxia, 90% with SD of 0.7 in aspect of causes and risk factors, 90% with SD of 0.5 in aspect of clinical manifestation, 88.5% with SD of 0.43 in aspect of guidelines of management of birth asphyxia, 85% with SD of 0.36 in aspect of diagnostic evaluation, 85% with SD of 0.5 in aspect of complication, in and the lowest mean percentage is 80% with SD of 0.5 in aspect of special circumstances. The overall mean percentage in the post test is 92% with SD of 5.43.

This study is supported by **Raichel** who revealed that the post test level of knowledge of Newborn resuscitation among staff nurses 19 (31.67%) had moderate knowledge, they are categorized as 50-75% score, And 41 (68.33%) had adequate knowledge, they are categorized as more than75% score.

3. To develop and administer self instructional module on management of birth asphyxia

Self Instructional Module was developed on the basis of research findings of the study, review of Literature and consulting with experts.

a)The steps followed to develop self instructional module was as follows:

The steps adopted in the development of self instructional module were:

- Preparation of first draft of Self Instructional Module.

- Development of criteria checklist to evaluate the Self Instructional Module
- Content validity of Self Instructional Module
- Editing of Self Instructional Module.
- Preparation of final draft of Self Instructional Module.

b) Preparation of First Draft of Self Instructional Module

Self Instructional Module was prepared on the basis of review of literature, which was pertaining to the development of self instructional module on management of birth asphyxia.

c) Development of Criteria Checklist to evaluate the self instructional module:

❖ **Selection of the Content**

The content of self instructional module was selected through literature search and in consultation with the experts. Then content was analyzed into sub topics and sub topics were broken down into elements.

❖ *Organization of the Content*

The content selected was organized under following main headings.

- Introduction

- Definition

- Incidence

- Anatomy and Physiology of Respiratory System

- Causes and risk factor

- Signs and Symptoms

- Diagnostic Evaluation

- Management

- Complications

- Guide lines to with hold the newborn resuscitation

- Special circumstances

- Conclusion

- Newborn life support

e) Development of criteria checklist

A criteria checklist was prepared to develop SIM based on literature review and the opinion of aspects. The criteria check list consisted of 60 criterions statements under the broad headings of a) objectives b) contents (objective and appropriate) c) organization of the contents d) presentation e) language f) practicability g) acceptability h) any other suggestions. The draft of SIM and criteria check list was given to 9 experts for evaluation**.**

f) Content Validity of the Self Instructional Module

The initial draft of Self Instructional Module was given to 9 experts in the field along with the tool. The suggestions were incorporated in the self instructional module.

g) Preparation of the final draft of Self Instructional Module

The final draft of SIM was prepared after incorporating expert's suggestions. Some of the important factors considered while preparing self instructional module were simplicity of language and the content to cover all the items in the questionnaire for testing the knowledge**.**

h) Description of Self Instructional Module

The SIM was titled ‒management of birth asphyxia‖. It includes a) introduction b) definition c) incidence d) Anatomy and Physiology of Respiratory System e)causes and risk factors f) clinical manifestations g) diagnostic evaluation h) management i) complications h) guidelines to withhold the resuscitations j) special circumstances k)conclusion l)newborn life support**.**

4. To evaluate the effectiveness of self instructional module regarding management of birth asphyxia among staff nurses by post test knowledge score.

The overall mean post test knowledge score 33.12 with SD of 5.34 regarding management of birth asphyxia among staff nurses is higher than the overall mean pre test score 15.246 with SD of 8.68 and the statistical paired t- test value is **t= 13.518** and found to be significant **(p<0.0001*)**. Hence, H_1 is accepted. It indicates the effectiveness of Self Instructional Module regarding management of birth asphyxia. Therefore it shows that the SIM is effective in increasing the knowledge regarding management of birth asphyxia among staff nurses.

The findings of the study is consistent to the study conducted by **Dr.**

K. **Tamizharasi** stated that there was highly significant difference was found between the total knowledge scores of pre and post test and area wise score values of pre and post test (P<0.01) revealing effectiveness of Video assisted teaching programme

5. To find an association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variable.

There was significant association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variables such as age(x^2=8.693), Sex(x^2=5.601), type of family(x^2=7.911), educational status(x^2=9.434),year of working experiences (x^2=9.719), place of residence(x^2=5.746), sources of information(x^2=9.883), number of newborn resuscitation performed during your service(x^2=9.706). Hence, H_2 is accepted. There was no significant association between the demographic variables like marital status (x^2=0.66). Hence H_2 is rejected.

SUMMARY

This chapter dealt with the discussion of major findings of the study, the study findings were presented based on objectives and hypothesis. Discussion of the findings under four main sections viz. assessment of pre test knowledge scores of the staff nurses regarding management of birth asphyxia, administration of self instructional module on management of birth asphyxia, assess the effectiveness of self instructional module, and an association between the knowledge scores with demographic variables.

CHAPTER 5

CONCLUSION

On the basis of findings of the study the below set conclusions were drown. It also brings about the limitations of study in to practice. The implications are given on the various aspects like nursing education, nursing practice, nursing administrations and it also gives insight in to the future studies.

The study was undertaken to assess the effectiveness of self instructional module on management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar. 60 staff nurses were selected by following inclusion and exclusion criteria. Pre test was conducted by administering the structured knowledge questionnaire and self instructional module was distributed after pre test on the same day and after 7 days post test was given by using the same structured knowledge questionnaire. The study involved one group pretest and post test without a control group .using pre-experimental design, in which purposive sampling technique was used. The results were described by using descriptive and inferential statistics.

On the basis of findings of the study the below said conclusions were drawn. It also brings about the limitation of the study into practice. The implications are given on various aspects like nursing education, nursing practice, nursing research and nursing administration and it also gives insight to future studies.

Result proved that SIM was effective in improving the knowledge of the staff nurses regarding the management of birth asphyxia. There was significant difference between the pre test and post test knowledge. These scores were demonstrated by using paired ‗t' test. The analysis of mean pretest knowledge was 15.246 with SD of 8.611 where post test knowledge was 33.12 with SD of 5.43.this high mean difference shows the effectiveness of self instructional module. Overall area wise findings also revealed the effectiveness of self instructional module.

NURSING IMPLICATIONS

The findings of the study have implications in the field of nursing education, nursing practice, nursing research and nursing administration. Preventive measures can be adopted by large number of staff nurses based on demographic variables and they need education and training on management of birth asphyxia by professionals, thereby reducing risk factors and the mortality and morbidity associated with management of birth asphyxia.

NURSING EDUCATION

❖ Nursing education should emphasize on preparing prospective nurses to gain knowledge on management of birth asphyxia by using various methods of educational technology.
❖ Nursing faculty should be given in-service education to update their knowledge regarding management of birth asphyxia and further skills and abilities in identifying the learning need of nurses and planning for appropriate interventions.
❖ The proposed material regarding management of birth asphyxia has got scholarly information especially the statement and results will be use full insight to be included In the nursing curriculum.
❖ As a nurse educator, she can introduce the interventional programme in the curriculum. She can develop skills in conducting group meeting. The interventional programme based on the rehabilitation model can assist the nursing student to plan the nursing process.
❖ Nursing profession has been developing faster in recent years in a unique way.
❖ One of the major role that nurses play is the educating the patients and community regarding various health related facts.

NURSING ADMINISTRATION

❖ Nurse administrative has to plan and organize training programme for the nursing personnel on management of birth asphyxia.
❖ Nurse administrator has to organize educational programme in the hospital setting.
❖ Necessary administrative support has to be provided to conduct health educational workshops and seminar in the hospital and nursing colleges.

NURSING PRACTICE

❖ The child health nurses working in health services should be equipped with the knowledge regarding management of birth asphyxia.
❖ Health teaching programme on management of birth asphyxia need to be scheduled
❖ Nurse can be perspective and sensitive in the process of identifying and validating any immediate and long term problem and respond to these by appropriate interventions**.**

NURSING RESEARCH

❖ A similar study can be conducted on large scale.

❖ An in-depth study on other health problems can be conducted.

❖ The professional and student nurses can conduct further studies on management of birth asphyxia in order to assess the knowledge of staff nurses

❖ The study will be motivating the beginning researcher to conduct similar study.

❖ Large scales and comparative basis also motivate young and enthusiastic researchers to implement control programme activities and see its effectiveness.

❖ The methodology also gives guidelines to reach people for collecting information. So this framed methodology can be helpful to the nursing educator and to the nursing students to do any type of research related to the child health problem

LIMITATIONS

The limitations of the study were:

1. Study sample were limited to the staff nurses working in maternity hospitals hence globalization is limited

2. Using a purposive sampling which restricted the generalization of the result on whole population.

3. The study was limited to the subjects who were willing to participate and present at the time of study.

4. The size of the sample is limited i.e.60 staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar.

5. Better generalization of the study would have been possible if the sample size was larger.

RECOMMENDATIONS

The study recommends the following for the nursing research

1. A similar study may be replicated on a larger sample; there by findings can be generalized for a larger population.
2. A comparative study can be carried out among staff nurses in specialized and general hospital.
3. A comparative study can be carried out among staff nurses.
4. Individual case study can be done on birth asphyxia.
5. A longitudinal study can be done on the same staff nurses in different setting.
6. Similar study can be conducted for students to elicit their knowledge towards management of birth asphyxia.

CHAPTER 5

SUMMARY

The present study was conducted **"**A study to assess the effectiveness of Self Instructional Module on knowledge regarding management of birth asphyxia among staff nurses working in Hi-Tech Medical College & Hospital, Bhubaneswar."‖

OBJECTIVES OF THE STUDY:-

1. To assess the existing level of knowledge regarding management of birth asphyxia among staff nurses.

2. To develop and administer a Self Instructional Module on management of birth asphyxia.

3. To evaluate the effectiveness of self instructional module regarding management of birth asphyxia among staff nurses by post test knowledge score.

4. To find an association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variable such as age, sex, religion, marital status, type of family, education, place of residences, etc.

HYPOTHESIS:-

❖ **H₁**- The mean post test knowledge scores regarding management of birth asphyxia among staff nurses was significantly higher than the mean pretest knowledge scores at 0.05 and 0.0 1 level of significance.

❖ **H₂**- There was significant association between the mean pretest knowledge scores regarding the management of birth asphyxia among staff nurses with selected socio-demographic variables such as age, sex, religion, marital status, type of family, education, place of residences, family income, year of experience in maternity hospital and sources of information at 0.05 and 0.01 level of significance.

The conceptual frame work adopted for the present study was is based on the **J.W.Kenny"s open system model.**

Review of literature was done from published article, textbooks, reports and internets search regarding management of birth asphyxia. It helps the investigator to collect the appropriate and relevant information to support the study, design methodology, conceptual frame work and development of the tool land also helped to plan the analysis of data.

RESEARCH DESIGN:

The research design refers to the researcher's overall plan for obtaining answers to the research question and its spells out strategies that the researcher adopted to develop information that is accurate, objective and interpretable.

Pre experimental design is used as a research design in this study as there is a need to conduct generalized assessment of the knowledge of staff nurses regarding management of birth asphyxia.one group pre-test and post test design (0_1 x 0_2),which belongs to pre experimental design for this study.

The study used in the present study consists of 2 parts:

Section A-demographic variables

Section B-Structured knowledge questionnaire

Section A

This demographic variable consists of 9 items Age, sex, education, marital status, type of family, place of residence, year of experiences in maternity hospital, sources of information and number of newborn resuscitation performed during the service. The respondents were requested to tick (√) mark against the correct responses in the box provided.

Section B

The Structured knowledge questionnaire consists of 36 multiple choice questions fewer than 9 aspects as Anatomy and physiology of respiratory system, Basic concept about birth asphyxia, Causes and risk factor, Clinical manifestation, Diagnostic evaluation, Management, complication, Guidelines for withholding and discontinuing resuscitation, Special circumstances. Each question has 4 responses with 1 correct answer. Score one has given for each correct response in a single question and score 0 was given for wrong answer.

The resulting scores were ranged as follows Adequate knowledge – Above 75% Moderate Knowledge – 50 – 75% Inadequate Knowledge – below 50%

SELF INSTRUCTIONAL MODULE.

Self Instructional Module was developed by investigator after reviewing the literature and by , obtaining experts opinion. For the structured knowledge questions, 30 minutes duration was given for participants.

The investigator used purposive sampling technique to select the sample from the total population. 60 samples was selected for the study. The pre test was administered using the structured knowledge questionnaire followed by SIM. After 7 days the post test was administered by using the same structured knowledge questionnaire for evaluating the Self Instructional Module.

In order to ascertain the reliability of the tool, Split Half technique developed by Spearman Brown's Prophecy formula was used. The reliability co-efficient worked out to be r=0.97.

Findings related to demographic variables of staff nurses

- Majority (37%) of the respondents belonged to the age group of 25-30 years, and only 12% belongs to the age group of 35 years & above respectively
- Majority (60%) of the respondents was female and 40% of the respondents were male respectively.
- Majority (62%) of the respondents was married, and the remaining 38% of the respondents were unmarried respectively.
- Majority (68.4%) of the respondents belonged to the nuclear family and none of the respondents belonged to the extended family respectively.
- Majority 63.3% were G.N.M staff, 3.3% were P. B. B.Sc. Nursing, 26.6% were

  B. Sc. Nursing and only 6.8% were M.Sc. Nursing staff respectively.
- Majority (36.6%) of the respondents were having more than 3 yrs. of working experiences and only 11.6% of the respondents are having less than 1year experiences respectively.
- Majority (73.3%) of the respondents belonged to urban area and only 26.6% of the respondents belonged rural area respectively
- Majority (63.3%) have got information from academic education and only 6.6% have got information from friends and colleagues.
- Majority (53.3%) of the respondents have performed 1-5 times newborn resuscitation during their service and only 3.3% of the respondents have performed 6-10 times newborn resuscitation during their services.

Findings related to assessment of knowledge regarding management of birth asphyxia among staff nurses

The present study revealed that in pre test, the highest mean percentage is 60.5% with SD of 0.69 in the aspects of special circumstances, 55% with SD of 0.72 in aspect of complication, 53% with SD of 0.70 in aspect of guidelines of management of birth asphyxia, 47.5% with SD of 0.76 in aspect of basic concept of birth asphyxia, 45% with SD of 1.13 in aspect of Anatomy and Physiology, 40% with SD of 2.27 in aspect of management of birth asphyxia, 34% with SD of 1.05 in aspect of causes and risk factors, 33.33% with SD of 0.88 in aspect of clinical manifestation and the lowest mean percentage is 26.6% with SD of 0.44 in aspect of diagnostic evaluation .The over all mean percentage in pre test is 42.35% with SD of 8.68.

The posttest revealed that the highest the mean percentage is 100% with SD of 0.2 in aspects of basic concept of birth asphyxia, 98.3% with SD of 0.3 in aspects of Anatomy and Physiology, is 92.8% with SD of 1.2 in aspect of management of birth asphyxia, 90% with SD of 0.7 in aspect of causes and risk factors, 90% with SD of in aspect of clinical manifestation, 88.5% with SD of 0.43 in aspect of guidelines of management of birth asphyxia, 85% with SD of 0.36 in aspect of diagnostic evaluation, 85% with SD of 0.5 in aspect of complication, in and the lowest mean percentage is 80% with SD of 0.5 in aspect of special circumstances. The overall mean percentage in the post test is 92% with SD of 5.43.

Findings related to effectiveness of self instructional module regarding management of birth asphyxia

The study revealed that the overall mean post test knowledge score 33.12 with SD of 5.34 regarding management of birth asphyxia among staff nurses is higher than the overall mean pre test score 15.246 with SD of 8.68 and the statistical paired −t‖test value is t= 13.518 and found to be significant (p<0.0001). Hence, H_1 is accepted. It indicates the effectiveness of Self Instructional Module regarding management of birth asphyxia. Therefore, it shows that SIM is effective in increasing the knowledge regarding management of birth asphyxia among staff nurses.

Findings related to association between the knowledge scores and selected demographic variables

There was a significant association between the pretest knowledge score regarding management of birth asphyxia among staff nurses with selected demographic variables such as age(x^2=8.693), Sex(x^2=5.601), type of family(x^2=7.911), educational status(x^2=9.434),year of working experiences (x^2=9.719), place of residence(x^2=5.746), sources of information(x^2=9.883), number of newborn resuscitation performed during your service(x^2=9.706). Hence, H_2 is accepted.

There was no significant association between the demographic variables like marital status (x^2=0.66). Hence H_2 is rejected.

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ANNEXURE- 1

LETTER REQUESTING CONSENT TO VALIDATE THE RESEARCH TOOL

From,

     Mrs Sasmita Rout
     II year M.sc (Nursing),
     Hi-Tech College of Nursing,

To,

     _____
     _____
     _____

Forward through
     The Principal
     Hi-Tech College of Nursing
     Bhubaneswar

Sub: Letter requesting permission to conduct the study
Respected madam,

I, Mrs. Sasmita Rout a postgraduate nursing student of the Hi-Tech College of Nursing, Bhubaneswar have selected the below mentioned topic for dissertation to be submitted to Utkal University, BBSR as a partial fulfillment of Master degree in Pediatric nursing. Title of the study A Study To Assess The Effectiveness Of Self Instructional Module On Knowledge Regarding Management Of Birth Asphyxia Among Staff Nurses Working In Hi-Tech Medical College & Hospital, BBSR
Kindly consider this and do the needful

Thanking you in anticipation,

Yours faithfully

Mrs. Sasmita Rout
II year M.sc (Nursing),
Hi-Tech College of Nursing,

ANNEXURE- II

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool conducted by Sasmita Rout, M.Sc Nursing final year student Hi-Tech College of Nursing, Bhubaneswar, Odisha (Affiliated to Utkal University) is valid by undersigned & can proceed with this tool & conduct the main study for the dissertation entitled.

"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

Date:

Place: BBSR

Signature

Designation & Address

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool conducted by Sasmita Rout, M.Sc Nursing final year student Hi-Tech College of Nursing, Bhubaneswar, Odisha (Affiliated to Utkal University) is valid by undersigned & can proceed with this tool & conduct the main study for the dissertation entitled.

"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

Date : 12/07/2021

Place   :

BBSR

Signature of the evaluator

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool conducted by Sasmita Rout, M.Sc Nursing final year student Hi-Tech College of Nursing, Bhubaneswar, Odisha (Affiliated to Utkal University) is valid by undersigned & can proceed with this tool & conduct the main study for the dissertation entitled.

"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

Date : 23/08/2021

Place   :

BBSR

Signature of the evaluator

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool conducted by Sasmita Rout, M.Sc Nursing final year student Hi-Tech College of Nursing, Bhubaneswar, Odisha (Affiliated to Utkal University) is valid by undersigned & can proceed with this tool & conduct the main study for the dissertation entitled.

"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

Date : 14/07/2021

Place : BBSR

Dr. Suryakanta Swain, MBBS, MD
(PAEDIATRICS), DCH (LONDON, UK)
MRCPCH (LONDON, UK)
Associate Professor
Signature of professor & HOD

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool conducted by Sasmita Rout, M.Sc Nursing final year student Hi-Tech College of Nursing, Bhubaneswar, Odisha (Affiliated to Utkal University) is valid by undersigned & can proceed with this tool & conduct the main study for the dissertation entitled.

"A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

Date : 20/07/2021

Place : BBSR

Bulu Mahanty

Signature of the Evaluator
(Asst. Prof. Statistics)

(Designation and Address)
DEPT OF COMMUNITY MEDICINE
Hi-Tech Medical College & Hospital
Healthpark Rasulgarh BBSR

ANNEXURE- III

LETTER REQUESTING PERMISSON TO CONDUCT PILOT STUDY

From,

Mrs. Sasmita Rout

II year M.sc (Nursing),

Hi-Tech College Of Nursing, BBSR

To,

The Principal

Hi-Tech College Of Nursing, BBSR

Sub: Letter requesting permission to conduct the pilot study

Respected madam,

I, Mrs. Sasmita Rout a postgraduate nursing student of the Hi-Tech College Of Nursing, BBSR have selected the below mentioned topic for dissertation to be submitted to Utkal University, Bhubaneswar, Odisha as a partial fulfillment of Master degree in Pediatric nursing.

TOPIC- "A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN HI-TECH MEDICAL COLLEGE & HOSPITAL, BHUBANESWAR".

Kindly consider this and do the needful

Thanking you in anticipation,

Yours faithfully

Sasmita Rout
M.Sc Nursing 2nd year

Permitted to conduct the study.

Principal
Hi-Tech College of Nursing,
Bhubaneswar

ANNEXURE- IV

LETTER REQUESTING PERMISSION TO CONDUCT MAIN STUDY

From,

Mrs. Sasmita Rout

2nd Year M.Sc (Nursing)

Hi-Tech College Of Nursing, BBSR

To,

Respected Madam,

Sub: Letter requesting permission to conduct the main study

I Mrs. Sasmita Rout a post graduate nursing student of the Hi-Tech College Of Nursing, BBSR have selected the below mentioned topic for dissertation to be submitted to Utkal University, Bhubaneswar, Odisha as per partial fulfillment of Master Degree in Pediatric Nursing.

Title of the study   "A Study to Assess The Effectiveness of Self Instructional Module on Knowledge Regarding Management of Birth Asphyxia among Staff Nurses Working in Hi-Tech Medical College & Hospital, Bhubaneswar"

Kindly consider this and do the needful

Thanking you

Yours faithfully

Mrs. Sasmita Rout

Permitted to do main study.

Principal
Hi-Tech College of Nursing,
Bhubaneswar

ANNEXURE- V

HI-TECH MEDICAL COLLEGE & HOSPITAL
(Under Vigyan Bharati Charitable Trust)
Health Park, Pandara, Bhubaneswar - 751025

Letter no HMCH/MSO/2020-21 _2104_   Date: 24-03-2021

To,

The Principal
Hi-Tech College of Nursing
HMCH, BBSR

Sub; Regarding permission for conducting the main study.
     Ref. Your letter no-181/HCN/21 Dt. 24.03.21

Madam,

     With reference to the above subject under reference Mrs. Sasmita Rout
(Msc Nursing student) is allowed to conduct the main study in Paediatric department of
Hi-Tech Medical College & Hospital , Bhubaneswar from 25/03/2021 to 24/04/2021.

Medical Superintendent
HMCH, Bhubaneswar

Copy to
- Dr.R.K.Panigrahi- Director
- Nursing –Director
- Prof.&HOD (Paediatric .)
- C.O.O./C.A.O./V.P.(Opn.)
- Nursing Superintendent
- OPD/IPD Manager
- Person concerned

Tel: 0674-2371406/7/8, Fax: 2371409
Email: vbctmch@yahoo.com

BIRTH ASPHYXIA

INTRODUCTION:

Birth asphyxia is a leading cause of neonatal mortality & morbidity. It is also important cause of delay & neurological problems both term & preterm newborn. Approximately 5% to 10% neonates experience asphyxia at birth.

DEFINITION:

- Birth asphyxia is a non establishment of satisfactory pulmonary repiration at birth.
- It is failure of initiation & maintenance of spontaneous respiration with hypoxia, hypoventilation, hypercapnia, hypo perfusion, & metabolic acidosis.

INCIDENCE:

- 1% - 1.5% of total live birth:
  - < 36 week : 9%
  - > 36 week : 0.5%
- 20% of perinatal death

ETIOLOGICAL FACTOR:

Approximately 90% of asphyxia events occur as a result of placental insufficiency due to ante partum & intra partum factors. Post natal factors account for the remaining.

- Ante partum
- Intra partum
- Post partum

ANTE PARTUM:

Placental insufficiency due to

- Pre-eclampsia
- Hypertension
- Anemia
- Diabetes mellitus
- Post maturity

Other factors include:

- Ante partum hemorrhage
- Mal presentation
- Multifetal pregnancy
- Poor fatal growth
- Maternal systematic diseases
- Maternal drug therapy (e.g. lithium)
- Poly or oligohydromnios
- Placental malformation
- Vascular anomalies of the cord
- Congenital anomalies of the fetus

INTRA PARTUM

- Emergency CS
- Instrumental delivery
- Abnormal position
- Premature labour
- Precipitous labour
- Prolonged rupture of membranes
- Prolonged labour > 24 hrs
- Prolonged 2nd stage of labour
- Fetal bradycardia
- Non – reassuring fetal heart rate pattern
- General anesthesia
- Narcotics administered within 4 hrs. of delivery
- Meconium stained liquor
- Prolapsed cord
- Placenta previa

POST NATAL FACTOR:

- Pulmonary, cardio vascular & neurological abnormalities of the neonates
- Aspiration

PATHOPHYSIOLOGY:

Hypoxia/ Ischemia.

⬇

Failure to initiate breath

⬇

O_2, CO_2 exchange obstacle

⬇

Hypoxemia/ acidosis

⬇

Organ/ system injury
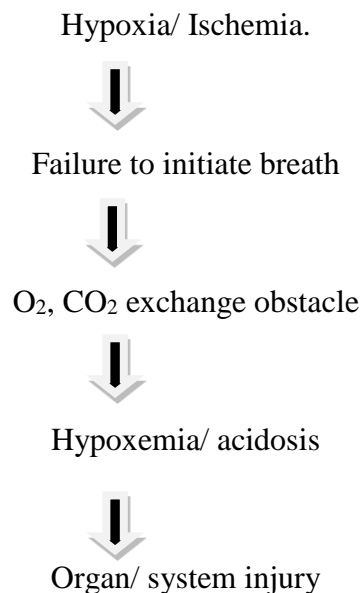
CLINICAL FEATURE:

- Apnoea, bradycardia
- Altered respiratory pattern – grunting, gasping
- Cyanosis
- Pallor – shock
- Hypotonia
- Unresponsiveness

INVESTIGATION:

- No confirmatory laboratory tests to diagnose perinatal asphyxia,
- Tastes are helpful to assess the severity of brain injury and to monitor the functional status of systematic organs.
- Blood sugar
- Serum electrolytes
- ABG
- Diffuse mediated MRI
- SpO$_2$
- CT
- EGG
- Renal function test:
  - Blood urea
  - Serum creatinine
- Liver function test
- Coagulation profile:
  - PT
  - PTT

MANAGEMENT:

Goals of Treatment:

- Maintain TABC
- Optimize cardiac output and cerebral perfusion
- Maintain SpO$_2$
- Treat/ prevent Hypoglycemia

Principles of management:

- Supportive therapy
- Anticonvulsants
- Cerebroprotective interventions
- Monitoring

Supportive therapy:

- IV Fluid:
  - 10% Dextrose
  - 60 ml/kg/day.
- Treat Hypotension:
  - Dobutamine
  - Dopamine
- Temperature:
  - Cool Therapy ($33 - 34^0$ C)
- Glucose:
  - Treat hypoglycemia
  - Maintain BS at 75 to 100 mg/dl
- Calcium:
  - Calcium level should be kept in the normal range ($9 - 11$ mg/dl)

Anticonvulsants:

- Control seizures:
    - Phenobarbitone:
  - Loading Dose: 20mg/kg slowly
  - Maintenance Dose: 5mg/kg/day
    - Phenytoin as a second line drug
    - Lorazepum
  - (0.05 - 0.1 mg/kg/dose I.V.) for seizures not responding to phenobarbitone and/or phenytoin

Cerebroprotective interventions:

- Therapeutic Hypothermia (Cool Therapy)
- Free Radical Scavengers
- Antagonists of excitotoxic amino acids
- Calcium Channel Blockers

Caution:

- Drugs like mannitol, steroids, and furosemide used in past are no longer recommended.

Treatment:

- Selective cerebral or whole body therapeutic hypothermia
- Control Seizures (phenobarbitone, phenytoin, midazolam)
- Mechanical Ventilation
- Volume Expansion
- Pressure Amines

Monitoring:

- Regular clinical assessment
- Biochemical Monitoring
- SpO_2

NeonatalResuscitationEquipment:

- Suction Equipment
  - Bulb Syringe/ mechanical suction and tubing, suction catheter 5F or
  - 6 F, 10 F or 12 F
  - 8 F feeding tube and 20 ml syringe meconium aspirator
- Bag and mask equipment
- Intubation equipment
- Medications :
  - Epinephrine 1/10.000
  - Isotonic crystaloid
  - Naloxone hydrocloride
  - Dextrose 40 %
  - Normal saline
  - Umbilical Vessel catetherization supplies
- Miscellaneous
  - Gloves, radiant warmer, linens, stethoscope, oropharyngeal airway
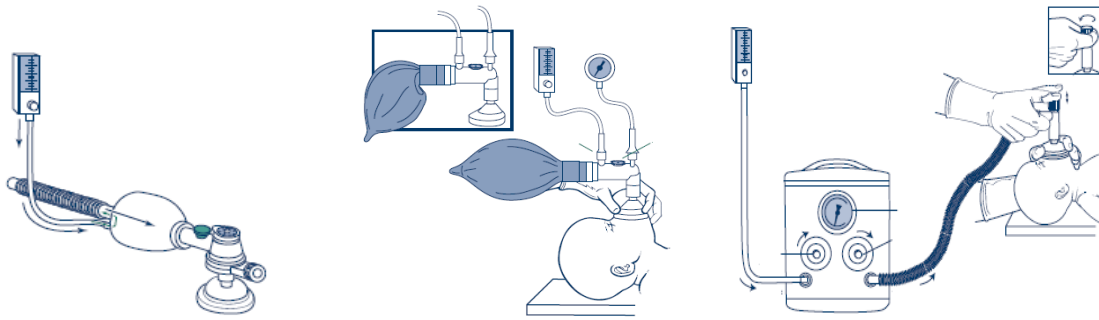
Balon Mengembang Sendiri (BMS)	Balon Tidak Mengembang Sendiri (BTMS)	T- Piece resuscitation

How does a baby receive O2 before birth ?

▶ All O2 difuse across the palcental membrane from the mother's blood to the baby blood

▶ Only a small fraction of the fetal blodood passed through the fetal lungs

▶ Alveoli is filled with fluid

▶ The blood vessels in the fetal lungs are markedly constricted

▶ Most of the blood flow through the ductus arteriosus into the aorta

After Birth:

+ Noconnection to the placenta

+ A baby get oxygen from the lung

1. The fluid in the alveoli is absorbed into the lungs

   tissue and replace by air

2. The umbilical arteri and vein clamped → increases

   systemic blood presure

3. O2 ↑ in the alveoli → relaxation of blood vessel in the lungs

4. The ductus arteriosus begin to constrict → more

   blood flow trough the lungs → O2 ↑ to tissues

APGAR Score:

		Score	
Sign	0	1	2
Heart Rate	Absent	< 100/ m	≥ 100/ m
Respiratons	-	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion	Active motion
Reflex irritability	No response	Grimace	Cough, sneeze,cry
Colour	Blue or pale	Pink body, blue extremitas	Completely pink

- Assigned at 1 and 5 minute after birth, If < 7 → every 5 minute – 20 minute

Newborn Resuscitation Algorithm.

© 2010 American Heart Association
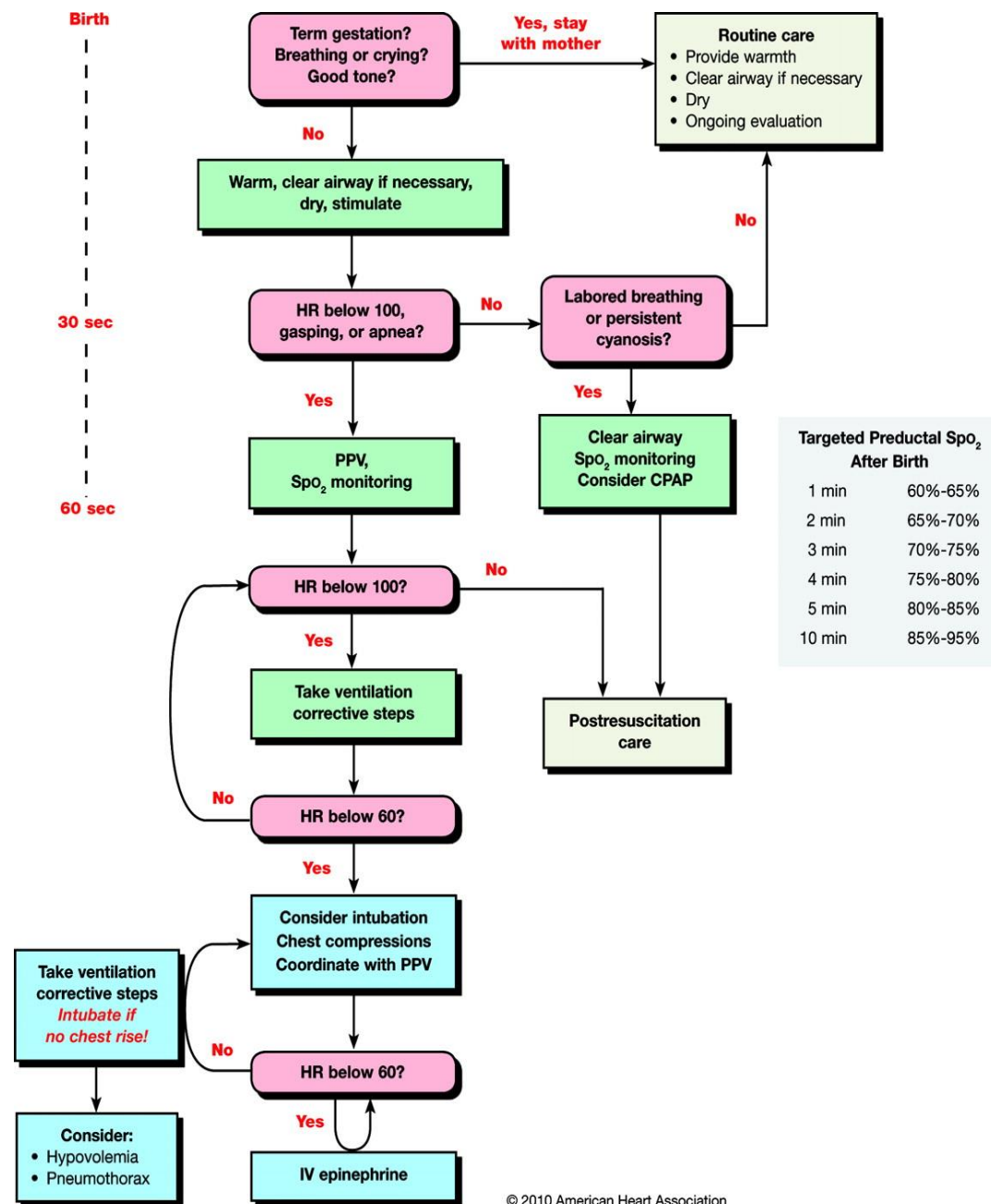
Initial Steps:

- Provide warm therapy
- Position, clear airway (as necessary)
- Dry, stimulate, reposition
- Give oxygen (as necessary) :
  - Free-flow O2 & Tactile stimulation

Meconium Stainning:

Vigourus baby if :

- strong respiratory efforts

- good muscle tone

- heart rate > 100 / minute

COMPLICATIONS:

Brain:

- Hypoxic-ischemic encephalopathy
- Intracranial Hemorrhage
- Convulsion

Heart:

- Hypoxic cardiomyopathy
- Cardiac disarrhythmias
- Congestive cardiac failure
- Shock

Lungs:

- Meconium aspiration syndrome
- Hyaline membrane disease
- Pulmonary hemorrhage
- Pneumonia

Kidneys:

- Hematuria
- Renal failure
- Renal vein thrombosis

Gastro Intestinal:

- Necrotizing entrocolitis
- Paralytic ileus & obstruction

Hematologic:

- DIC, hyperbilirubinemia and sepsis

Endocrine:

- Adrenal hemorrhage

Immunologic:

- Septicemia

PROGONIS:

It is depends upon associated factors, maturity of the baby, duration and intensity of hypoxia & acidosis & initiation of resuscitative measures in the delivery room. Subsequent competent care and available facilities also influence the outcome following birth asphyxia.

PREVENTIVE MEASURES:

- Intensive antenatal care
- Intranatal assessment of fetal hypoxia
- Careful use and intelligent use of anesthetic agents & depressant drugs in labour

- Care of neonates at birth
- Special attention to avoidance of preterm delivery
- Care of preterm & low birth wt baby

NURSING DIAGNOSIS:

- Ineffective airways clearance R/T aspiration meconium & mucus
- Impaired breathing pattern R/T immaturity of the lungs
- Impaired thermoregulation R/T immature thermoregulatory state of neonates
- Risk for complication R/T loss of oxygen supply to the vital organ

NURSING MANAGEMENT:

- Observe the newborn that has been successfully resuscitated for the following constellation of signs.
- Absence of spontaneous respirations
- Seizure activity in the first 12 hours after birth
- Decreased or increased urine output (which may indicate acute tubular necrosis or syndrome of inappropriate antidiuretic hormone)
- Metabolic alterations (e.g., hypoglycemia and hypocalcemia)
- Increased intracranial pressure marked by decreased or absent reflexes or hypertension.
- Decrease noxious environmental stimuli.
- Monitor the infant's level of responsiveness, activity, muscle tone, and posture.
- Administer prescribed medications, which may include anticonvulsants (e.g., Phenobarbital) as prescribed.
- Provide respiratory support.
- Monitor for complications.
- Measure and record intake and output to evaluate renal function.
- Check every voiding for blood, protein, and specific gravity, which suggests renal injury.
- Check every stool for blood, suggesting necrotizing enterocolitis (NEC). NEC is a condition in which the bowel develops necrotic patches that interfere with digestion and possibly cause paralytic ileus, perforation, and peritonitis.
- Take serial blood glucose determinations to detect hypoglycemia, and monitor serum electrolytes, as ordered.
- Administer and maintain intravenous fluids to maintain hydration and fluid and electrolyte balance.
- Provide education and emotional support.

SUMMARY:

Perinatal asphexia continues to be ameasure cause of neonatal morbidity and neuro developmental disabilities. Neonatal encephalopathy is characterized by difficult in initiating and maintain respiration, depression of reflexes, altered level of consciousness and often seizures.

ANNEXURE-L

Blue print of the questionnaire

Sl. no	Contents	Knowledge		Comprehension		Application		Overall No. Of Items	%
		No. of items	Total no. of items	No. of items	Total no. of items	No. of items	Total no. of items		
1	Anatomy and physiology of respiratory system	1.2.3.4.	4	5.6	2			6	17
2	Basic concepts of birth asphyxia	7.8	2					2	5.5
3	Causes and risk factors	9.12	2	10.11	2			4	11
4	Clinical manifestation	13.14.15	3					3	8
5	Diagnostic evaluation	16	1					1	3
6	Management	17.18.19.20.21.24.26.28.29.	9	22.25.27.30	4	23	1	14	39
7	Complications	31	1	32	1			2	5.5
8	Guide lines	33.34	2					2	5.5
9	Special circumstances	35.36	2					2	5.5
	Overall Total	**36**	**26**		**9**		**1**	**36**	**100 %**

ANNEXURE-M

STRUCTURED KNOWLEDGE QUESTIONNAIRE PART-1

TOOL-I: DEMOGRAPHIC VARIABLE

Instructions:

Dear participants,

I am Nirmala.M.L, as a part of my M.Sc(N) course curriculum, I am going to conduct an interview to collect some information related to my topic. Hence you are requested to cooperate and kindly give the relevant information; information collected from you will be kept confidential. It will be only used for research purpose. Various possible alternatives of each question are given in the questionnaire below; please select only one alternative that suits you.

Section –A Demographic data

a) Code no:

b) Name of the hospital:

c) Address:

1) Age:-

　　a) Below 25years

　　b) 25-30years

　　c) 30-35 years

　　d) 35 years –above　　　　　　　　　　　　[ ]

2) Gender:-

　　a) Male

　　b) Female　　　　　　　　　　　　　　　[ ]

3) Marital Status:-

　　a) Married

　　b) Unmarried　　　　　　　　　　　　　[ ]

4) Type of family:-

　　a) Single parent family

　　b) Nuclear family

　　c) Joint family

　　d) Extended family　　　　　　　　　　　[ ]

5) Education:-

    a) GNM

    b) B.Sc nursing

    c) P.B.BSc nursing

    d) M.Sc nursing   [ ]

6) Years of experiences:-

    a) Below 1yrs

    b) 1-2years

    c) 2-3years

    d) 3years and above   [ ]

7) Place of residence:-

    a) Urban

    b) Rural   [ ]

8) Sources of information:-

    a) Mass media

    b) Academic education

    c) Friends & colleagues

    d) Continuing education program   [ ]

9) Number of resuscitation of newborn performed by you during your service:-

    a) Not done

    b) 1-5 times

    c) 6-10 times

    d) 11 and above

TOOL-II

STRUCTURED KNOWLEDGE QUESTIONNAIRE

KNOWLEDGE ASSESSMENT REGARDING MANAGEMENT OF BIRTH ASPHYXIA AMONG STAFF NURSES WORKING IN SELECTED MATERNITY HOSPITAL

SECTION-B KNOWLEDGE QUESTIONNAIRE

A) Anatomy & physiology of respiratory system

1) Which of the following is the part of lower respiratory tract?

a) Trachea

b) Lungs

c) Larynx

d) Pharynx   [ ]

2) What is another name for trachea?

a) Wind pipe

b) Adam's apple

c) Food pipe

d) Voice box   [ ]

3) What is the functional unit of lung?

a) Bronchioles

b) Alveoli

c) Bronchi

d) Bronchial tree   [ ]

4) What is the main function of the respiratory system?

a) Inspiration
b) Expiration

c) Gaseous exchange

d) Fluid exchange   [   ]

5) What is the normal respiration of the newborn?

a) 16breaths/min

b) 16-20breaths/min

c) 26 breaths/min

d) More than 30 breaths/min   [   ]

6) What is the normal heart rate of the newborn?

a) 72beats/min

b) 80beats/min

c) 90beats/min

d) 100beats/min   [   ]

B)   *BIRTH ASPHYXIA*

II BASIC CONCEPT ABOUT BIRTH ASPHYXIA

7) What do you mean by asphyxia?

a) Excess of oxygen

b) Lack of oxygen

c) Excess of carbon dioxide
d) Lack of carbon dioxide   [   ]

8) What is birth asphyxia?

a) Non establishment of satisfactory pulmonary resuscitation at birth.

b) Non establishment of satisfactory blood pressure at birth.

c) Establishment of pulse rate at birth.

d) Establishment of body temperature at birth.   [ ]

III CAUSES AND RISK FACTOR

9) What is the condition of the fetus which prone to get birth asphyxia?

a) High birth weight

b) Hydrops fetalis

c) Low birth weight

d) Anencephaly   [   ]

10) What is the condition of mother leads to birth asphyxia during delivery?

a) Chronic renal failure

b) Premature Rupture of membrane

c) Diabetic mellitus

d) Cardiomegaly   [   ]

11) What drugs will causes birth asphyxia to mother during pregnancy?

a) Anesthetic drugs.

b) Antibiotic drugs

c) NSAIDS

d) Chemotherapeutic drugs   [   ]

12) What are the habits of the mother leads to birth asphyxia?

a) Smoking & alcohol abuse

b) Exercises

c) Tobacco chewing

d) Over eating   [   ]

IV. CLINICAL MANIFESTATION

13) Which of the following is the sign of birth asphyxia before the delivery?

a) An abnormal heart rate or rhythm

b) Increased heart rate

c) Increased respiration rate

d)) Increased temperature.   [   ]

14) Which of the following is the other sign of birth asphyxia?

a) Loud pitch cries.

b) Pale, skin colour.

c) Increased heart rate

d) Increased muscle tone   [   ]

15) What are the neurological problems associated with birth asphyxia?

a) Increased muscle tone.

b) Absence of reflexes.

c) Syncope.

d) Poor muscle tone.   [   ]

V. DIAGNOSTIC EVALUATION

16) What is the normal Apgar score in newborn?

a) 0-3

b) 4-6

c) 7-10

d) 10   [   ]

VI. MANAGEMENT OF BIRTH ASPHYXIA

17) What is the first step in the management of birth asphyxia?

    a) Newborn resuscitation

    b) Medication

    c) Incubator

    d) Phototherapy   [   ]

18) What do you mean by resuscitation?

    a) It is an act of restoration of life or consciousness

    b) It is an act of maintain temperature

    c) It is an act of cessation of respiration

    d) It is an act of maintain intake and output chart   [   ]

19) What is the purpose of resuscitation?

    a) Maintain breathing & circulation

    b) Maintain bilirubin level

    c) Maintain immunity

    d) Maintain stability   [   ]

20) What are the findings to be recorded after resuscitation procedure?

    a) Check the temperature

    b) Check the intake and output chart

    c) Check the heart rate and respiration rate

    d) Check the hemoglobin level.   [   ]

21) Which equipment is used for resuscitation in newborn?

    a) Venflon of 18g

    b) AMBU bag

    c) Pulse oxymeter

d) Defibrillator   [   ]

22) When will you check the apgar score in newborn?

    a) 1 min to 5 mins after birth

    b) 5 mins to 10 mins after birth

    c) 10 mins to 15 mins after birth

    d) 15 mins to 20 mins after birth   [   ]

23) What are the steps of CPR in newborn resuscitation?

    a) Airway. Breathing

    b) Breathing, circulation

    c) Airway, circulation

    d) Airway, Breathing, circulation   [   ]

24) What are the priorities in resuscitation procedure?

    a) Dry, Suctioning, Positioning, Chest Compression, BVMV, Oxygen & Medication.

    b) Dry, Positioning, Suctioning , Oxygen, Chest Compression, & Intubation

    c) Dry, Positioning, Suctioning, BVMV, Oxygen, Chest Compression, intubation & Medication

    d) Dry, Chest Compression, Positioning, Oxygen & Medication   [   ]

25) When does bag mask ventilation indicate in newborn?

    a) Diaphragmatic hernia

    b) Gasping

    c) Increased heart rate

    d) Increased respiration   [   ]

26) What is the side effect of bag mask ventilation?

   a) Abdominal distension

   b) Vomiting

   c) Irritation

   d) Increased temperature   [ ]

27) What is the rate of chest compressions and breaths to be administered per minute during resuscitation?

   a) 60 compressions & 30 breaths

   b) 90 compressions & 30 breaths

   c) 90 compressions& 40 breaths

   d) 120 compressions & 45 breaths   [   ]

28) What method is used for chest compression for newborn?

   a) One finger method

   a) Two fingers method

   b) Four fingers method

   c) Complete palm method   [   ]

29) In which condition naloxone is not recommended as a part of initial resuscitative efforts?

   a) Respiratory depression

   b) Cardiac arrest

   c) Congenital malformation

   d) Hypertension   [   ]

30) When will start breast feeding in post resuscitation phase?

   a) Within half an hour

   b) Within one hours

   c) Within two hour

d) Within five hours   [   ]

COMPLICATION

31) What is the complication of birth asphyxia?

   a) Hypoxic ischemic encephalopathy.

   b) Absence of respiration

   c) Increased respiration rate

   d) Increased body temperature   [   ]

32) Which are the circulatory complications of resuscitation?

   a) Atherosclerosis

   b) Myocardial failure

   c) Emboli

   d) Thrombophlebitis   [   ]

GUIDELINES FOR WITH HOLDING AND DISCONTINUING RESUSCITATION

33) What are the indications to with hold the resuscitation?

   a) Low rate of survival and non acceptable morbidity

    b) Low rate of survival and acceptable mortality

   c) High rate of survival and acceptable morbidity

   d) High rate of survival and non acceptable mortality   [   ]

34) What is the sign to discontinue the resuscitation?

  a) With signs of dehydration

  b) Without undue prolongation

  c) With sign of cyanosis

  d) Infants without sign of life   [   ]

SPECIAL CIRCUMSTANCES

35) What is the reason for head tilting during mouth to mouth ventilation?

a) To open airway

b) To promote breathing

c) To prevent tongue falling back

d) To prevent aspiration.   [ ]

36) What is the cause for bulging of baby's stomach in mouth to nose ventilation?

a) Obstructed air passage

b) Clear air passage

c) Inflating pressure is less

d) Inflating volume less   [ ]

ANNEXURE-N

SCORING KEY

Tool –II – Questionnaire to assess the knowledge regarding management of birth asphyxia.

ITEM.NO	ANSWER	SCORING
1.	B	1
2.	A	1
3.	B	1
4.	C	1
5.	D	1
6.	D	1
7.	B	1
8.	A	1
9.	C	1

10.	B	1
11.	A	1
12.	A	1
13.	A	1
14.	B	1
15.	C	1
16.	C	1
17.	A	1
18.	A	1
19.	A	1
20.	C	1
21.		B	1
22.		A	1
23.		D	1
24.		D	1
25.		B	1
26.		A	1
27.		B	1
28.		B	1
29.		A	1
30.		C	1
31.		A	1
32.		B	1
33.		C	1
34.		D	1
35.		A	1
36.		A	1