



A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CARE OF NEONATE UNDERGOING PHOTOTHERAPY AMONG 3RD YEAR BSC NURSING STUDENTS OF SELECTED NURSING COLLEGE GUWAHATI ASSAM ”

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Abstract: Phototherapy is a common treatment used for neonates with jaundice.¹ Nurses play crucial role in the care of newborns receiving phototherapy. The purpose of the study was to evaluate the impact of a structured teaching program on the knowledge of third-year B.Sc. nursing students at a selected nursing college in Guwahati about the care of newborns receiving phototherapy. A pre-experimental study was conducted with 60 3rd-year B.Sc. nursing students of selected nursing college Guwahati. Students received structured teaching program and intervention. A systematic knowledge questionnaire was used to gather the data both before and after the intervention. According to the findings, the average pre-test knowledge score was 13.36. The post-test knowledge score was 23.77. The mean difference between the pre-test and post-test scores was 10.41. The study came to the conclusion that the organized teaching program was successful in enhancing nursing students' understanding regarding the care of newborns receiving phototherapy.

Keywords: Hyperbilirubinemia, Phototherapy and Neonatal Jaundice

INTRODUCTION:

Neonatal jaundice is a common condition that affects approximately 60% of full-term neonates and 80% of preterm neonates worldwide¹. Phototherapy is a commonly used treatment for neonatal jaundice. It involves exposing the neonate's skin to blue or white light, which helps to break down the bilirubin in the blood and eliminate it from the body². Nurses play a crucial role in the care of neonates undergoing phototherapy. They must have adequate knowledge of the procedure, its complications, and the necessary nursing interventions to provide safe and effective care.

¹ Ansong-Assoku Betty & Othes (2023) Neonatal Jaundice

² Abbey Puja,(2019) Neonatal Jaundice,

BACKGROUND OF THE STUDY

The greatest treasure in human history, or the gift of God, is a kid. From conception until death parents are responsible for the health, happiness, security, and destiny of their children. The basis for a child's future health is set throughout the first year of life. To ensure a child's health from now until they become an adult, specific attention and precautions must be taken. Infants must be in good health in order to grow and develop.³

Hyperbilirubinemia is the most prevalent neonatal condition affecting infants now a days. Hyperbilirubinemia is the medical term for high amounts of bilirubin in the blood. The cause of this illness is typically complex. When starting treatment for neonates who are icteric, several variables must be taken into account. First, the mother's and the baby's obstetric history must be examined to identify any potential risk factors for hyperbilirubinemia, such as the mother's medication use (diazepam, oxytocin), delivery method (forceps, pelvic, caesarean section), delay in umbilical cord clamping, blood type, Rh factor, and maternal Coombs' test.⁴

About 60% of all newborns experience physiological jaundice, which occurs during the second and third day of life (newborn babies). Throughout the first week of life, 80% of premature babies are impacted by the condition, which affects more than half of all infants. Jaundice causes more than 100,000 late-preterm and term newborns to pass away worldwide each year.⁵

Hyperbilirubinemia, which results in a yellowing of the skin, is a common condition in newborn infants. Rarely, if bilirubin levels are high enough, bilirubin can breach the blood-brain barrier and cause the lifelong neurological disorder known as kernicterus, which manifests as cerebral palsy and deafness and has substantial care expenses. There have been cases of deafness without cerebral palsy and other negative effects of hyperbilirubinemia. Bilirubin levels can be reduced using phototherapy, but in an emergency, an exchange transfusion is the only means to lower extremely high levels. There is a mortality risk associated with this expensive critical care surgery.⁶

Effects, certain recent animal and cell culture experiments have raised questions about the possibility of DNA damage. In newborns, hyperbilirubinemia is a prevalent issue. In the first week of life, jaundice is seen in about 60% of term babies and 80% of preterm babies. The birth weight, gestational age, chronological age, and internal environment of the body all affect the serum bilirubin level. The blood-brain barrier is crossed when the total serum bilirubin (TSB) level goes above a key threshold. A common issue is neonatal hyperbilirubinemia (NNH), which is indicated by a TSB level more than 5 mg/dL (86 mol/L). All neonates experience chemical hyperbilirubinemia during the first week, which is characterised as TSB levels >2 mg/dl. Few term infants have a severe underlying condition, despite the fact that clinical jaundice affects up to 60% of them in their first week of life.⁷

With exchange blood transfusions used less frequently for very high or treatment-resistant levels of bilirubin, phototherapy is the basis of treatment for jaundice to lower serum bilirubin and prevent bilirubin brain damage. It follows that reducing the negative effects of jaundice on newborn newborns and the length of hospital stay is the goal of prevention and efficient treatment. Despite the fact that phototherapy does not seem to have any significant side.⁸

Some clinicians have urged for the classification of kernicterus as a "never event" because phototherapy is typically efficient in lowering bilirubin levels and preventing them from increasing to a level at which kernicterus develops. There is some indication that kernicterus cases have increased recently, most likely as a result of earlier discharge after childbirth. Fluorescent light is used to treat infants with phototherapy by shining it on their exposed skin. By photoisomerizing bilirubin to a soluble form (Lumirubin) for simpler excretion, light encourages bilirubin excretion. According to studies, blue fluorescent light is more efficient at lowering bilirubin. However, the typical light from fluorescent bulbs, which has a wavelength range of 420 to 460 nanometers, is frequently used because blue light affects an infant's colour.⁹

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of structured teaching programme on knowledge regarding care of neonate undergoing phototherapy among 3rd year B.Sc nursing students of selected nursing college Guwahati Assam.

OBJECTIVES:

³ Pandya Tejas & H.N. Ravindra, 2015, Effectiveness of planned teaching program on knowledge regarding care of the neonate under phototherapy among diploma internship nursing students in selected nursing schools at Gujarat state

⁴ Ullah Sana & Others ,(2016) Hyperbilirubinemia in Neonates: Types, Causes, Clinical Examinations, Preventive Measures and Treatments: A Narrative Review Article

⁵ Woodgate Poul & Others ,(2011) Neonatal jaundice

⁶ ANSONG-ASSOKU BETTY & OTHERS, (2023) NEONATAL JAUNDICE,

⁷ Jamir Sungdirenla, 2016 , A STUDY OF NEONATAL HYPERBILIRUBINEMIA IN A TERTIARY CARE HOSPITAL IN THE NORTH EASTERN REGION OF INDIA

⁸ Erlandsen Marie Andersen & Others (2010) , Treatment of neonatal jaundice - more than phototherapy and exchange transfusions

⁹ Maisels Jeffrey, (2009), Neonatal hyperbilirubinemia and kernicterus - Not gone but sometimes forgotten

1. To assess the pre-test and post test level of knowledge on care of neonate undergoing phototherapy among 3rd year B.Sc nursing students in selected nursing college Guwahati Assam.
2. To determine the effectiveness of structured teaching programme on care of neonate undergoing phototherapy among 3rd year B. Sc nursing students.
3. To find out the association between the level of knowledge regarding care of neonate undergoing phototherapy among 3rd year B. Sc nursing students with selected demographic variables.

HYPOTHESES

The hypotheses are tested at 0.05 level of significance.

H₁: There is a significant difference between the pre- test and post-test level of knowledge of 3rd year B. Sc Nursing students regarding care of neonate undergoing phototherapy.

H₂: There is a significant association between the level of knowledge of 3rd year B.Sc Nursing students regarding care of neonate undergoing phototherapy among selected demographic variables.

METHODOLOGY:

A pre-experimental study was conducted with 60 3rd-year B.Sc. nursing students of selected nursing college of Guwahati. The participants were received a structured teaching program and intervention on the care of neonates undergoing phototherapy. The structured teaching program consisted of a Power-Point presentation and poster. The duration of the teaching program was 60 minutes.

The data were collected using a structured knowledge questionnaire consisting of 30 multiple-choice questions. The questionnaire was administered to participants before and after the intervention. The data were analyzed using descriptive statistics and paired t-tests.

RESULTS:

The mean pre-test knowledge score was 13.36. The post-test knowledge score was 23.77. The mean difference between the pre-test and post-test scores was 10.41. The paired t-test showed a significant difference between the pre-test and post-test scores in Group A ($t=15.1$, $p<0.05$),

Data analysis was done according to the objectives and hypotheses set for the study. To sum up the entire data, a master data sheet was structured by the researcher. Data will be analyzed in term of descriptive and inferential statistics. Result shows that in pre-test mean knowledge score was 13.36 and Standard deviation was 3.917 and in post-test mean knowledge score was 23.77 and standard deviation was 3.698 with mean difference of 10.41. The mean difference between pre-test and post-test knowledge score was tested using paired t test with obtained ($t=15.01$) was statistically significant at $p<0.05$ level of significance. Findings revealed that there is

significant difference between mean pre-test and mean post-test knowledge regarding care of neonate undergoing phototherapy among 3rd year B.Sc nursing students. Hence hypothesis H₁ is accepted.

The chi square values showed that Have you been posted in phototherapy unit and Have you ever given phototherapy care of nursing students were statistically found significant association at $p<0.05$ level. Therefore H₂ is accepted. The other demographic variables such as age and previous source of information of nursing students were statistically non significant. Therefore H₂ is rejected.

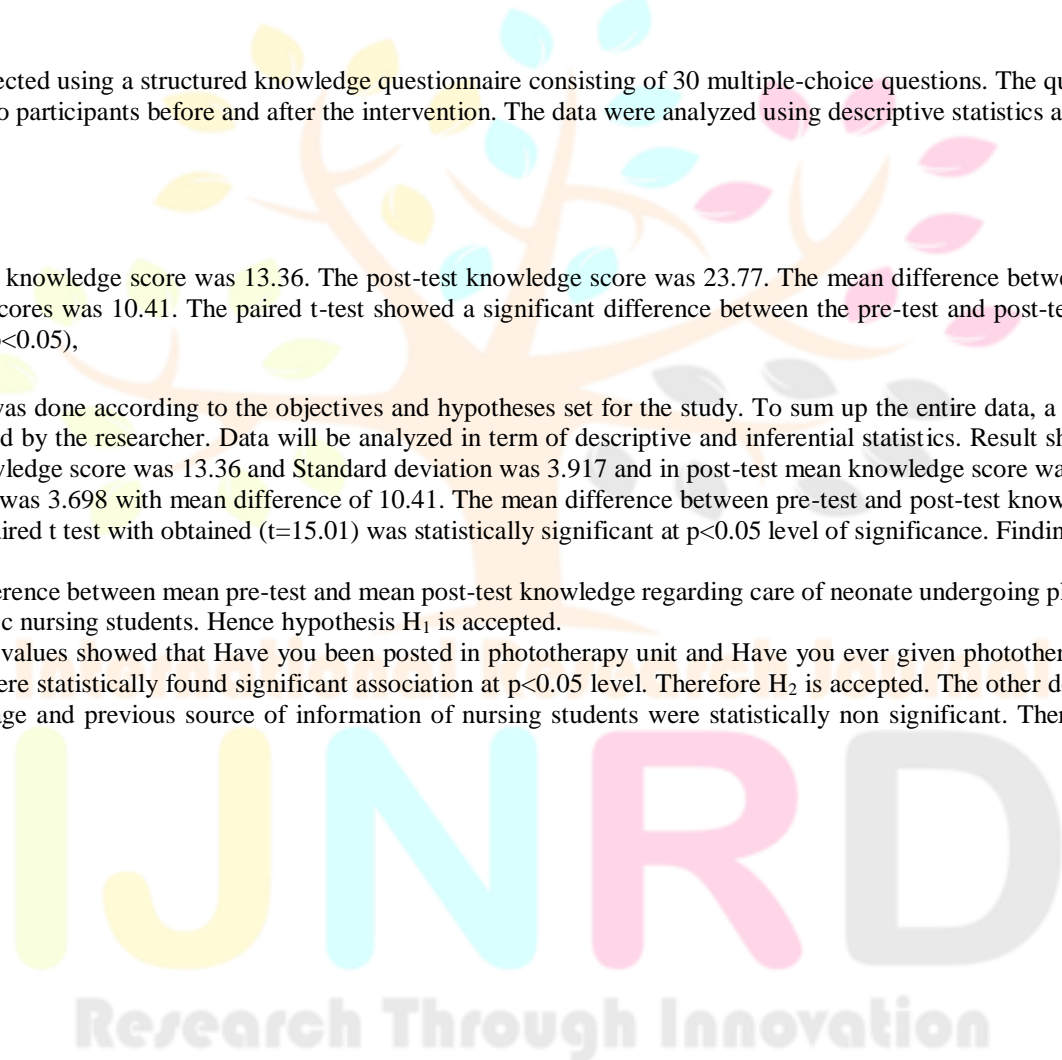


FIGURE- 1: Distribution of mean and SD of pre-test and post-test knowledge score on care of neonate undergoing phototherapy among 3rd year B. Sc nursing students.

n =60

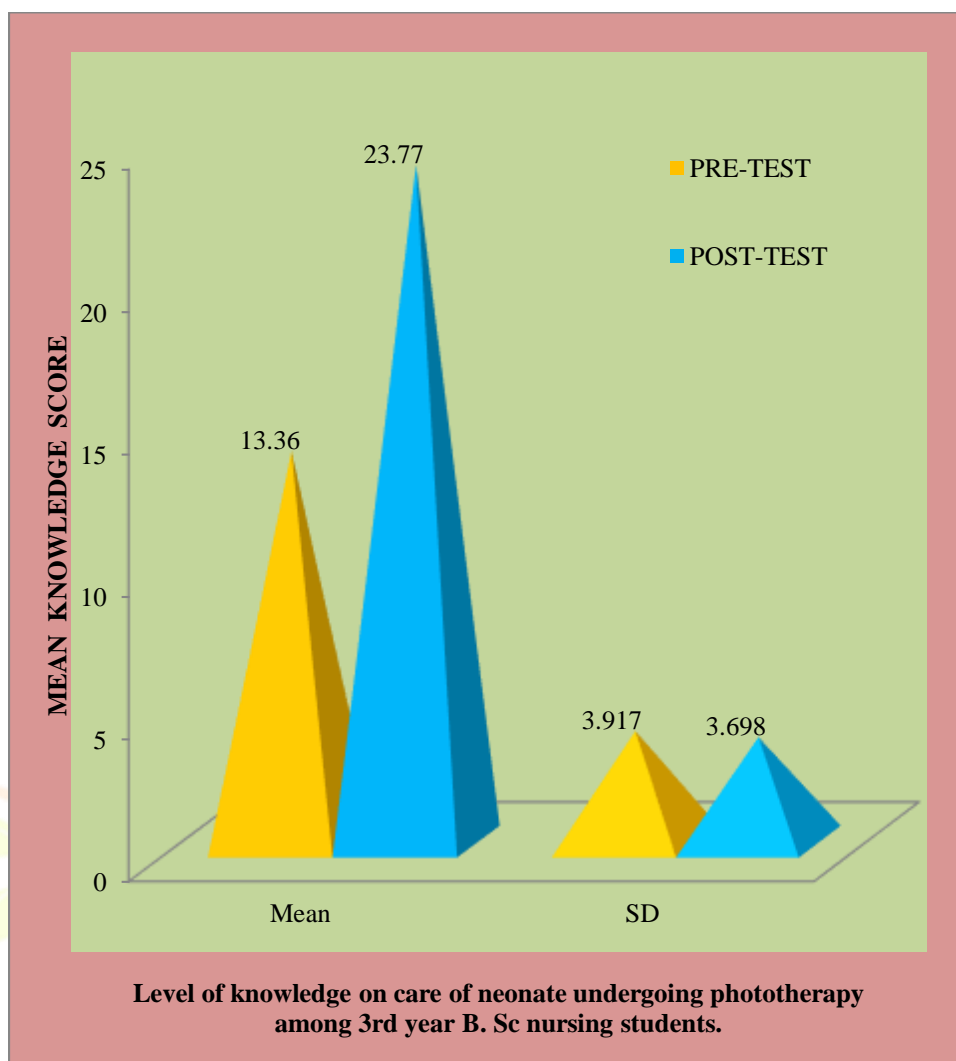
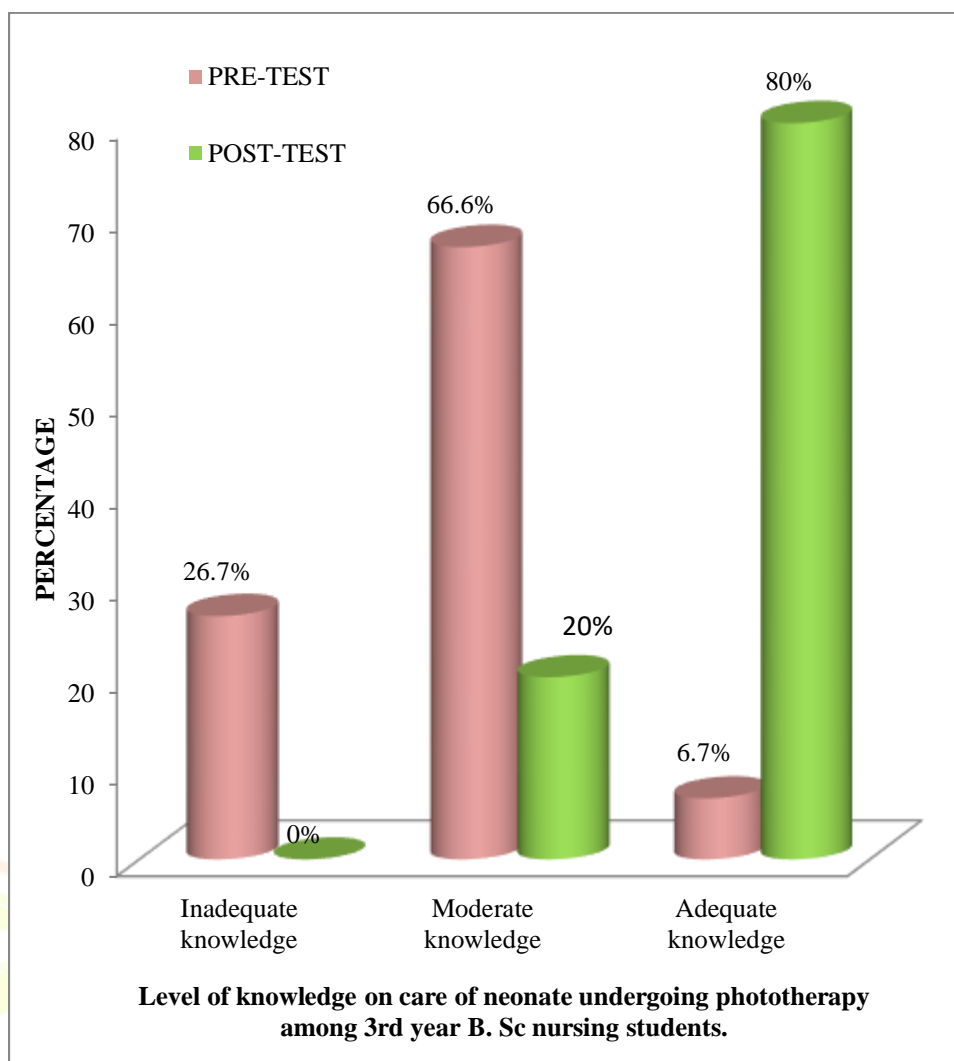


FIGURE 2-Percentage distribution of knowledge level of 3rd year B.Sc nursing students regarding care of neonate undergoing phototherapy:

n=60



Conclusion:

The study concluded that the structured teaching program was effective in improving the knowledge of nursing students regarding the care of neonates undergoing phototherapy. The results of the study suggest that structured teaching programs can be an effective strategy for improving nursing students' knowledge and skills in neonatal care. It is recommended that nursing colleges include structured teaching programs in their curriculum to enhance the quality of nursing education and improve patient care outcomes.