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NURSING CARE FOR NEWBORNS WITH HYPERBILIRUBINEMIA AND NEONATAL JAUNDICE PROBLEMS IN THE LAVALETTE HOSPITAL

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ABSTRACT

Introduction: Hyperbilirubinemia is a common clinical problem in newborns, characterised by elevated bilirubin levels which lead to jaundice in neonates. If left untreated, this condition can lead to serious complications such as kernicterus and bilirubin encephalopathy. **Methods:** This study aims to analyse the nursing care provided to neonates with hyperbilirubinemia and jaundice, using a descriptive case study design at Lavalette Hospital. Participants were two neonates aged six and 17 days, both diagnosed with hyperbilirubinemia. Data were obtained through interviews with parents and nurses, direct observation of nursing actions and analysis of medical records. Data validation was performed using source triangulation. **Results:** The results of the three-day study showed a decrease in jaundice symptoms after two phototherapy sessions, as indicated by a reduction in the scores for yellow skin, yellow sclera and yellow mucous membranes. **Conclusion:** Phototherapy was effective in addressing the nursing issue of neonatal jaundice. The success of therapy was also supported by collaboration between medical personnel and family participation. Follow-up care focuses on increasing body weight and providing nutrition to prevent the recurrence of neonatal jaundice.

Keywords: hyperbilirubinemia; neonatal jaundice; neonatal phototherapy; evidence-based practice.

ASUHAN KEPERAWATAN PADA BAYI BARU LAHIR DENGAN HIPERBILIRUBINEMIA DAN MASALAH IKTERUS NEONATORUM DI RUMAH SAKIT LAVALETTE

ABSTRAK

Pendahuluan: *Hiperbilirubinemia merupakan masalah klinis yang sering terjadi pada bayi baru lahir, ditandai dengan peningkatan kadar bilirubin yang menyebabkan terjadinya ikterus neonatorum. Apabila tidak ditangani dengan baik, kondisi ini dapat menimbulkan komplikasi serius seperti kernikterus dan ensefalopati bilirubin. Penelitian ini bertujuan untuk menganalisis asuhan keperawatan yang diberikan pada neonatus dengan hiperbilirubinemia dan ikterus neonatorum menggunakan desain studi kasus deskriptif di Rumah Sakit Lavalette.* ***Metode:*** *Partisipan penelitian terdiri dari dua neonatus berusia enam dan 17 hari yang didiagnosis hiperbilirubinemia. Data diperoleh melalui wawancara dengan orang tua dan perawat, observasi langsung terhadap tindakan keperawatan, serta analisis rekam medis. Validasi data dilakukan menggunakan triangulasi sumber.* ***Hasil:*** *Hasil penelitian selama tiga hari menunjukkan adanya penurunan gejala ikterus setelah dua kali tindakan fototerapi, yang ditandai dengan penurunan skor warna kuning pada kulit, sklera, dan membran mukosa.* ***Kesimpulan:*** *Fototerapi terbukti efektif dalam mengatasi masalah keperawatan ikterus neonatorum. Keberhasilan terapi juga didukung oleh kolaborasi antara tenaga kesehatan dan*

partisipasi keluarga. Tindak lanjut perawatan difokuskan pada peningkatan berat badan dan pemenuhan nutrisi untuk mencegah kekambuhan ikterus neonatorum.

Kata kunci: *evidence-based practice, fototerapi neonatal, hiperbilirubinemia, ikterus neonatorum.*

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INTRODUCTION

Hyperbilirubinemia is the most common clinical condition in neonates. Newborns with hyperbilirubinemia exhibit yellow discoloration of the sclera and skin as a result of the accumulation of yellow bilirubin pigment (Mathindas et al., 2013). This problem is generally triggered by maternal factors such as ABO and Rh blood group incompatibility, as well as breastfeeding. Other contributing factors include prematurity, gestational age, low birth weight (LBW), and perinatal conditions such as infection, hypoglycemia, and type of delivery (Nyoman et al., 2021). In some cases, hyperbilirubinemia may return to normal during the transition period, but there are still many cases with abnormalities that require serious treatment. This condition is caused by the accumulation of unconjugated bilirubin, which is neurotoxic and can have fatal consequences such as death and cause permanent neurological disorders throughout life. The magnitude of the risk posed by hyperbilirubinemia requires careful diagnostic evaluation and prompt and accurate management (Santosa & Istiqomah, 2023).

In 2017, the World Health Organization (WHO) stated that the incidence of hyperbilirubinemia worldwide remains high. The WHO estimates that approximately 15 million babies experience hyperbilirubinemia, with nearly 5% of cases occurring in developed countries, while approximately 95% of cases are found in developing countries (Pangesti, 2020). According to data from the 2007 Basic Health Research (Riskesdas), hematological disorders, including hyperbilirubinemia, ranked fifth as a cause of neonatal morbidity with a prevalence of 5.6% after respiratory disorders, prematurity, sepsis, and hypothermia (Rodríguez, Velastequí, 2019). According to a 2016 report by the Indonesian Ministry of Health, one of the factors contributing to the high infant mortality rate (IMR) in Indonesia is jaundice, which can develop

into bilirubin encephalopathy (kernicterus), with an estimated 230,000 new cases each year and approximately 61,000 infant deaths per year due to this condition (C et al., 2023). Based on a 2018 report from the East Java Provincial Health Office, the incidence of jaundice in neonates was recorded at 26.75% or equivalent to 268 cases per 1,000 live births (Utama, 2022). Data on the use of phototherapy lamps at Lavalette Hospital shows that the number of infants with hyperbilirubinemia or neonatal jaundice undergoing phototherapy reached 52 cases in the period from June to December 2021, increased to 102 cases in 2022, then decreased to 78 cases in 2023, and recorded 64 cases from January to October 2024.

Bilirubin is produced by the reticuloendothelial system as the end product of heme breakdown, which occurs through an oxidation-reduction reaction mechanism. Bilirubin binds to glucuronic acid in the endoplasmic reticulum through a reaction catalyzed by uridine diphosphoglucuronic acid transferase (UDPGT). The bilirubin conjugation process serves to convert water-insoluble bilirubin into a water-soluble form. After being excreted through bile into the digestive tract, bilirubin undergoes reduction by microorganisms in the colon into colorless tetrapirol. In the proximal small intestine, some bilirubin undergoes deconjugation by the enzyme β-glucuronidase. This unconjugated bilirubin can then be reabsorbed into the systemic circulation, which ultimately increases the total bilirubin level in the plasma. This series of processes, which includes absorption, conjugation, excretion, deconjugation, and reabsorption, is known as the enterohepatic circulation. In neonates, this process tends to take longer due to limited nutritional intake in the early days of life (Mathindas et al., 2013).

If hyperbilirubinemia is not treated immediately, this condition can cause serious complications such as encephalopathy and kernicterus (Rinda Lamdayani et al., 2022). Biliary encephalopathy has a high mortality rate and carries the risk of long-term effects such as cerebral palsy, high-frequency hearing loss, paralysis, and dental development abnormalities, which can significantly reduce quality of life (Hidayati & Rahmaswari, 2020).

The most effective measure that can be taken in hyperbilirubinemia therapy to reduce indirect bilirubin levels before kernicterus occurs is phototherapy (C et al., 2023). Additionally, during phototherapy, the baby's sleeping position can be changed every two hours, alternating between supine, right side, supine, left side, supine, prone, then back to supine and right side (Rechika, 2024).

According to Azzahra (2024), nurses play an important role in the promotive, preventive, curative, and rehabilitative aspects of managing hyperbilirubinemia in neonates. Promotive actions can be carried out through health education on the definition, etiology, signs and symptoms, prevention, care, and treatment of hyperbilirubinemia. Preventive efforts include advising mothers to breastfeed their babies at least 8 to 12 times a day, strengthening the exclusive breastfeeding program, and providing lactation management by nurses who act as breastfeeding counselors. In the curative aspect, nurses carry out independent and collaborative actions. Independent actions include monitoring the degree of jaundice using the Kramer sign, monitoring breast milk intake, measuring vital signs, calculating fluid balance, performing phototherapy, and recommending frequent breastfeeding. Meanwhile, the rehabilitative role is carried out through educating mothers to recognize the signs of jaundice, monitor urine output at least six times a day, and advise them to immediately take their babies to a health care facility if symptoms of jaundice accompanied by fever appear.

METHODS

Research Design

The research design used in this study was a descriptive case study, which is a type of study that provides a description of a particular case and requires researchers to begin their research using descriptive theory to explain the research results in detail. This study aimed to explore nursing care for newborns with hyperbilirubinemia and neonatal jaundice at Lavalette Hospital.

Definition of Terms

Hyperbilirubinemia in newborns is an increase in unconjugated bilirubin levels in the blood caused by ABO and Rh incompatibility, breastfeeding, prematurity, gestational age, low birth weight, and perinatal factors (infection, hypoglycemia, and type of delivery). This condition can cause serious consequences such as encephalopathy and kernicterus, and even death. Hyperbilirubinemia is characterized by jaundice in the sclera, skin, and mucosa, resulting in neonatal jaundice nursing problems. Therapies that can be given to newborns with hyperbilirubinemia are light therapy (phototherapy) and increased breast milk intake.

In this case study, the researchers focused only on newborns with hyperbilirubinemia and neonatal jaundice who underwent phototherapy with nutritional disorders.

Participants

The subjects used in this study were two clients recommended by the hospital with the same nursing problems and medical diagnoses, which had been determined by the researcher and approved by the supervising lecturer. Before conducting the study, the researcher and the hospital provided informed consent to the clients and their families as approval and research ethics. The informed consent contained the research objectives and the actions to be taken. Consent was given to maintain confidentiality between the researchers and the clients. Informed consent must be understood and agreed to by the clients and their families within 24 hours.

The characteristics for data collection are determined by the following criteria:

1. Newborns aged 1-28 days.
2. Newborns who are hospitalized with a medical diagnosis of hyperbilirubinemia with neonatal jaundice.
3. Newborns with physiological jaundice.
4. Newborns with grade III jaundice who have not undergone direct and indirect venous bilirubin blood tests.
5. Newborns with grade III jaundice who have undergone direct and indirect venous bilirubin blood tests.
6. Newborns who have been given phototherapy and have never received light therapy.
7. Newborns who experience nutritional disorders while undergoing phototherapy.
8. Parents consent to the infant being a respondent.

Location and Time

1. Location

   This case study was conducted in the Neonatology Room of Lavalette Hospital.
2. Time

   The duration of the case study was from the time the client was first admitted to the hospital until discharge or a minimum of 3 days of treatment. The time frame for collecting data for this scientific paper was from June 11, 2025 to June 25, 2025.

Data Collection

1. Permits

   In conducting this case study, the researcher first submitted a letter of introduction from the ITSK RS dr. Soepraoen Malang Nursing Diploma Program, then submitted a permit application to the Head of Human Resources at Lavalette Hospital.
2. Data collection

   The data collection methods used in this nursing care study were:

a. Interviews, covering client identity, parent identity, sibling identity, main complaints, current medical history, past medical history (prenatal, natal, postnatal, immunization), family medical history, health function patterns, and data sources obtained from family and nurses.
b. Observation and physical examination using the IPPA approach (inspection, palpation, percussion, auscultation) on the client's body systems, and determining physical disorders.
c. Documentation and questionnaire studies derived from diagnostic examinations and other relevant data such as lab results, radiology examinations, ultrasonography (USG), and liver biopsy.

Data Instruments

The data collection tools or instruments used in this case study were observation sheets for light therapy, phototherapy SOP, and pediatric nursing care forms covering patient identity, current medical history, family medical history, physical examination, and documentation studies using writing instruments and physical examination tools such as thermometers and stethoscopes.

Data Validity Test

To ensure the accuracy of the data, the validity test in this case study was conducted by extending the observation period to at least three days and gathering more in-depth information from families and nurses. In this study, data validity testing used the triangulation method, namely technical triangulation. Technical triangulation is data collection carried out by checking data from the same source using different techniques. The aim is to test the credibility of the data and obtain accurate conclusions. Data was obtained through interviews, then checked through observation and documentation.

Data Analysis

This analysis process began with searching for and compiling data obtained from observations (nursing actions). Researchers conducted observations and interviews with clients in the Neonatology Room at Lavalette Hospital and observed the results of the actions. Data analysis activities began with qualitative descriptive analysis through data reduction, in which the researcher selected the subjects of observation and focused on the observation results that were the objectives of the study. After that, the researcher displayed the data by presenting the focused data, and the conclusion was an examination of the conclusions that took place continuously

throughout the study. The description in the analysis is as follows:

1. Data collection
   Data was collected from WOD (Interviews, Observations, Documentation). The results were written in the form of field notes, then transcribed into structured notes.
2. Data reduction
   Data from interviews collected in the form of field notes are converted into transcripts and grouped into subjective and objective data, analyzed based on diagnostic examination results, and then compared with normal values.
3. Data presentation
   Data can be presented in tables, figures, charts, or narrative text. Client confidentiality is ensured by obscuring the client's identity.
4. Conclusions
   The data presented is then discussed and compared with previous research results and theoretically with health behavior. Conclusions are drawn using the inductive method. The data collected is related to assessment, diagnosis, planning, action, and evaluation.

Research Ethics

Before conducting research, researchers must first submit a research proposal to obtain a recommendation from the Head of the Nursing Study Program at Dr. Soepraoen Hospital in Malang. After obtaining the recommendation, they must then submit a request for permission to the authorities involved in the research process, namely the authorities related to the research location, emphasizing the following ethical aspects:

1. Informed Consent (consent to become a client)
   A consent form is given to research participants who meet the researcher's criteria. Subjects must receive complete information about the purpose of the research to be conducted and have the right to freely participate or refuse to become respondents. The informed consent form must state that the data obtained will only be used for scientific development.
2. Anonymity (no names)
   To maintain confidentiality, researchers do not include the names of participants but use initials/codes instead.
3. Confidentiality
   The confidentiality of participant information is guaranteed by researchers; only certain data groups are reported as research results.

RESULTS DAN DISCUSSION

The author discusses the gaps and discrepancies between theoretical concepts and actual reality, arguments regarding the

gaps that occur in cases or solutions taken to overcome problems that arise when providing nursing care to clients By. Ny. S and By. Ny. D with a diagnosis of hyperbilirubinemia and neonatal jaundice nursing problems at Lavalette Hospital.

1. Assessment

   The assessment of client 1 was conducted on June 11, 2025, at 11:00 a.m. Client 1 (By. Ny. S) is female, born prematurely at 36 weeks of gestation via cesarean section with a birth weight of 2400 g and a current weight of 2180 g. At birth, she had a weak cry and irregular breathing with an APGAR score of 1-7-4, due to respiratory distress caused by amniotic fluid aspiration. The current chronological age is 6 days (corrected age 36 weeks 6 days). The client's mother is 35 years old and has a history of preeclampsia since the second trimester with blood pressure ranging from 130–140/80–90 mmHg. Examination showed that the client had grade 3 jaundice at 6 days of age, accompanied by the following signs and symptoms: yellow sclera, yellow skin from the head to the lower body (below the umbilicus) and upper limbs (above the knees), yellow mucous membranes, accompanied by shortness of breath. The client's general condition was fair, with somnolent consciousness, fairly weak spontaneous breathing, but strong sucking and swallowing reflexes. Nutrition was obtained from a combination of breast milk and formula.

   Client 2 was assessed on June 19, 2025, at 3:00 p.m. Client 2 (By. Ny. D), male, was born very prematurely at 29 weeks of gestation via vaginal delivery with a birth weight of 1535 g and a current weight of 1200 g. At birth, the baby cried softly and had weak breathing with an APGAR score of 1-3-5 due to a history of apnea. The current chronological age is 17 days (corrected age 31 weeks 3 days). Examination showed that the client began to experience grade 3 jaundice at 17 days of age with the following signs and symptoms: yellow sclera, yellow skin from the head to the lower body (below the umbilicus) and upper limbs (above the knees), yellow mucous membranes accompanied by shortness of breath. The client's general condition is weak, with soporific consciousness, very weak spontaneous breathing, and weak sucking and swallowing reflexes. Nutrition is obtained from breast milk with limited formula supplementation.

   According to the theory (Khoiriyah et al., 2021), women aged 35 years or

older are prone to preeclampsia and eclampsia, and are more susceptible to labor complications, making them prone to premature birth. This concludes the theory that states that women under the age of 20 and over the age of 35 are considered to be at risk during pregnancy. This can lead to health problems during childbirth and increase the risk of congenital defects and low birth weight.

According to the theory (Dewi & Isfaizah, 2023), 21 (36.8%) of low birth weight (LBW) infants experienced hyperbilirubinemia, which is the majority of LBW compared to 66 (35.1%) of normal birth weight (NBW) infants. Prematurity in LBW infants causes the liver to be immature. Thus, the process of conjugating indirect bilirubin into direct bilirubin is disrupted, and blood albumin levels, which function to transport bilirubin from tissues to the liver, are not met.

The relationship between gender and hyperbilirubinemia is consistent with the gender differences of the two respondents taken by the researcher in accordance with the theory (Shafira, 2022) which states that hyperbilirubinemia in neonates often occurs in males than females, with male neonates experiencing hyperbilirubinemia with a distribution percentage of 127 samples (11.27%) and female neonates experiencing hyperbilirubinemia with a distribution percentage of 76 samples (90.3%). This occurs due to chromosomal differences, where females have XX chromosomes while males have XY chromosomes. The Y chromosome possessed by males can increase the rate of red blood cell destruction and inhibit the maturation of bilirubin metabolism enzymes.

Breastfeeding infants with hyperbilirubinemia plays a very important role in the process of eliminating bilirubin from the body, especially in premature infants and those with low birth weight (LBW). According to the theory (Dewi & Isfaizah, 2023), the benefit of breastfeeding for infants is that breastfed infants are better able to cope with the effects of jaundice (icterus).

The researchers' opinion on the complaints of By. Ny. S and By. Ny. D is in accordance with the theory, whereby hyperbilirubinemia in infants can occur due to prematurity and low birth weight. During the assessment, conditions such as yellowing of the skin from the head to the lower body (below the umbilicus) and upper limbs (above the knees), sclera, mucous

membranes, and accompanied by shortness of breath due to a history of respiratory distress at birth were found. Both clients had the same complaints, so it was necessary to pay attention to nutritional intake in accordance with the clients' needs to help the metabolism and elimination of hyperbilirubinemia and increase the clients' weight.

2. Nursing diagnosis

   The priority nursing diagnosis obtained for client 1 and client 2 was neonatal jaundice, with major signs and symptoms including yellow skin, yellow sclera, yellow mucous membranes, and total bilirubin testing performed on client 2. This is in accordance with the opinion of the SDKI DPP PPNI Working Group (2016). However, according to theory (Ifqi, 2021), in client 1, the degree of jaundice is assessed using the Kramer sign formula according to the client's clinical condition. Neonatal jaundice is the yellowing of the skin and mucous membranes of a newborn within 24 hours of birth due to unconjugated bilirubin entering the circulation. Nursing problems in neonatal jaundice are caused by abnormal weight loss, difficulty transitioning to extrauterine life, and age less than 7 days (SDKI DPP PPNI Working Group, 2016).

   Based on theory, researchers argue that there is a correlation between cases and theory in determining nursing diagnoses in premature and low birth weight newborns with hyperbilirubinemia.

3. Planning

   Nursing care planning for By. Ny. S and By. Ny. D was determined based on the Indonesian Nursing Outcomes Standards (SLKI) and Indonesian Nursing Intervention Standards (SIKI) guidelines, namely Neonatal Jaundice (D.0024) b.d difficulty transitioning to extrauterine life with Outcomes (SLKI) after nursing interventions were performed for 3x24 hours, the baby's nutritional status (L.03031) improved, as well as SIKI Neonatal Phototherapy (I.03091) for 2 series with interventions including: Observation: Monitor jaundice on the infant's sclera and skin, identify fluid requirements according to gestational age and weight, monitor temperature and vital signs every 4 hours, monitor side effects of phototherapy (e.g., hyperthermia, diarrhea, skin rash, weight loss of more than 8-10%); Therapeutic: Prepare the phototherapy lamp and incubator or baby box, remove the baby's clothes except for the diaper, provide eye protection (eye protector/biliband) for the baby,

measure the distance between the lamp and the baby's skin surface (30 cm or depending on the phototherapy lamp specifications), allow the baby's body to be continuously exposed to phototherapy light, immediately change the baby's mat and diaper if they defecate/urinate, use white linen to reflect as much light as possible; Education: Encourage the mother to breastfeed for about 20-30 minutes, encourage the mother to breastfeed as often as possible; Collaboration: Collaborate on direct and indirect bilirubin blood tests.

Research conducted by (Shafira, 2022) shows that exposing neonates to high-intensity light reduces bilirubin in the skin. Phototherapy can reduce bilirubin levels by facilitating the biliary excretion of unconjugated bilirubin. This occurs when light absorbed by tissue converts unconjugated bilirubin into two isomers called photo bilirubin. Based on previous studies, researchers believe that phototherapy has the ability to prevent severe neurological complications due to bilirubin accumulation, such as bilirubin encephalopathy or kernicterus. Therefore, in the care of neonates with jaundice, phototherapy is not only seen as a technical intervention, but as an integral part of the baby's adaptation strategy in the transition to extrauterine life, especially for neonates with immature hepatobiliary organs.

4. Implementation

   In client 1 (By. Ny. S), phototherapy began at 6 days of age, and in client 2 (By. Ny. D), phototherapy began at 17 days of age. Client 1 and client 2 underwent phototherapy with the same protocol, namely monitoring jaundice on the sclera and skin of the baby; on the first day, the degree of jaundice was at grade III, which is yellowing from the head to the lower body (below the umbilicus) and upper limbs (above the knees); jaundice monitoring was carried out every day until the third day to monitor changes in the degree of jaundice in the baby; monitoring temperature and vital signs every 4 hours, performed daily until the fifth day when the infant was allowed to go home; preparing the phototherapy lamp and infant box when phototherapy was to be administered to the infant, performed daily until the fourth day; remove all of the infant's clothing except for the diaper during phototherapy; provide eye protection to shield the infant's eyes during phototherapy; measure the distance between the light and the infant's skin surface on the first day of treatment and on subsequent days until the third day,

monitoring that the appropriate distance is maintained; allow the baby's body to be continuously exposed to phototherapy light by changing the baby's position every 8 hours to maximize the distribution of phototherapy light on the baby's skin; this is done until the fourth day when phototherapy is discontinued; using white linen to reflect as much light as possible, done on the first day, and on the following days until the fourth day, ensuring that white linen is always attached outside the phototherapy lamp; encouraging mothers to breastfeed as often as possible from the first day of treatment until the fifth day to maximize breast milk intake in babies and prevent other possible adverse effects; collaborate on direct and indirect bilirubin blood tests, which are only performed on the first day; on the second and third days, when the clinical condition of both clients has improved, direct and indirect bilirubin blood tests are not performed.

This is in line with research conducted by Raisatul (2020), where the main implementation carried out by researchers was phototherapy, taking into account the indications for phototherapy, such as bilirubin levels, the surface area of the baby's skin that must be exposed to phototherapy light, possible side effects, and procedures for using phototherapy. The researcher's assumptions regarding efforts to treat neonatal jaundice were consistent with previous studies, both in terms of the use of phototherapy equipment, consideration of indications, and continuous monitoring of the infant's development. In the implementation carried out by the researchers related to neonatal phototherapy, they also checked the device's durability before and after use. Thus, the monitoring of the baby's development could run properly and minimize things beyond the researchers' control, such as the distance between the body and the lamp being too far or too close, or the intensity of the lamp light being inappropriate.

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5. Evaluation

The evaluation conducted on clients is a formative evaluation or daily evaluation. Formative evaluation is an evaluation conducted to determine the extent to which the objectives of the nursing plan can be achieved in order to determine the client's daily progress. The results of the evaluation of the 2-series (48 hours) phototherapy treatment conducted on client 1 (By. Ny. S) and client 2 (By. Ny. D) on the first day showed that the clinical condition of jaundiced skin had decreased moderately (3), jaundiced sclera had decreased moderately (3), and jaundiced mucous membranes had decreased moderately (3). on the second day, the clinical condition of yellow skin decreased moderately (4), yellow sclera decreased moderately (4), yellow mucous membranes decreased moderately (4), on the third day, the clinical condition of yellow skin decreased (5), yellow sclera decreased (5), yellow mucous membranes decreased (5). Inspection and palpation of the degree of jaundice in Client 1 and Client 2 showed no signs of jaundice on the third day. Neither Client 1 nor Client 2 experienced any side effects during phototherapy, no rash, no signs of dehydration, and stable thermoregulation. This is consistent with Mulyati's (2019) research, where the evaluation results align with criteria such as the effectiveness of phototherapy in accelerating the reduction of bilirubin levels in infants. According to the researchers' assumptions, after providing nursing care to By. Ny. S and By. Ny. D for 3 days, the nursing evaluation of neonatal jaundice due to difficulties in transitioning to extrauterine life was found to be in accordance with the SLKI criteria, namely decreased yellowing of the skin, decreased yellowing of the sclera, and decreased yellowing of the mucous membranes.

Thus, the nursing problem of neonatal jaundice due to difficulties in transitioning to extrauterine life was resolved. Clients 1 and 2 continued to receive care in the intensive care unit for further observation of their weight and breathing patterns.

CONCLUSION

From the results of research conducted over three periods of nursing care for clients By. Ny. S and By. Ny. D, diagnosed with hyperbilirubinemia and neonatal jaundice at Lavalette Hospital, the author has drawn the following conclusions:

1. Assessment

   The assessment results obtained from two similar cases, namely newborns with prematurity and low birth weight who experienced hyperbilirubinemia. The assessment of client 1 was conducted on June 11, 2025, at 11:00 a.m., and the assessment of client 2 was conducted on June 19, 2025, at 3:00 p.m. Both clients showed the same signs and symptoms, namely yellow sclera, yellow skin from the head to the lower body (below the umbilicus) and upper limbs (above the knees), yellow mucous membranes, and shortness of breath due to a history of respiratory distress at birth.

2. Nursing diagnosis

   The primary diagnosis established for Client 1 and Client 2 is neonatal jaundice associated with difficulty transitioning to extrauterine life, as indicated by the client's complaints consistent with the major symptoms and signs of neonatal jaundice, including yellow mucous membranes, yellow skin, and yellow sclera.

3. Planning

   Planning focused on the comprehensive implementation of Neonatal Phototherapy (I.03091) through observation of clinical parameters, direct therapeutic actions, education for mothers, and collaboration with laboratory examinations. Both clients received two series of phototherapy with techniques and supervision in accordance with standards, including monitoring of temperature, elimination, skin color, and vital signs every four hours.

4. Implementation

   Implementation in both neonatal clients diagnosed with Neonatal Jaundice due to difficulty transitioning to extrauterine life was carried out in a planned, structured manner and in accordance with clinical practice standards. Phototherapy was administered to both clients using a consistent protocol that included close

clinical observation, therapeutic measures, maternal education, and collaborative supporting examinations. Jaundice monitoring was performed routinely until the degree of jaundice decreased, supported by monitoring of temperature, vital signs, and device patency during the treatment period. The implementation also prioritized preventive measures such as ensuring optimal lighting, even skin exposure, and maximum breastfeeding to support physiological bilirubin elimination.

5. Evaluation

   The formative nursing evaluation conducted over three days on client 1 (By. Ny. S) and client 2 (By. Ny. D) showed that two series of phototherapy successfully reduced the degree of jaundice gradually. Changes in clinical indicator values, namely yellow skin, yellow sclera, and yellow mucous membranes, showed a decrease from a moderate score (3) on the first day to a maximum score (5) on the third day. Inspection and palpation examinations indicated that on the third day, signs of jaundice were no longer found in both clients.

   Thus, the nursing problem of neonatal jaundice due to difficulties in transitioning to extrauterine life was resolved, marked by significant clinical improvement. Both clients remained in the intensive care unit for further observation of weight gain and respiratory stability.

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