

Education on Strategies to Increase Breast Milk Production Through Continuity of Care Midwifery as a Management Strategy for Physiological Neonatal Jaundice on the Sixth Day of Life: A Case Study of Mrs. P in the Working Area of the 9 November Community Health Center, Banjarmasin, 2025

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ABSTRACT

Keywords:

Newborn;
Neonatal Jaundice;
Neonate;
Education.

Abstract: Background: Limited maternal knowledge of breastfeeding techniques and milk expression may contribute to inadequate breast milk production and increase the risk of neonatal jaundice. Objective: To implement education on strategies to increase breast milk production to fulfill newborn nutritional needs and prevent physiological neonatal jaundice. Methods: This case study employed comprehensive midwifery care management through subjective and objective data collection, diagnosis, implementation, and evaluation. Results: Continuity of Care (CoC) midwifery care was provided through education on increasing breast milk production. The mother received education on frequent breastfeeding, proper positioning and attachment, adequate nutrition and fluid intake, sufficient rest, and breast care. Following the intervention, breastfeeding frequency and milk production improved, while the infant's skin yellowing gradually decreased. Conclusion: Education through the CoC approach improved maternal knowledge and breastfeeding practices and supported the reduction of physiological neonatal jaundice. Impact: CoC combined with breastfeeding education can support breastfeeding success and neonatal health.

Kata Kunci:

Bayi baru lahir;
Ikterus;
Neonatus;
Edukasi.

Abstrak: Latar Belakang: Kurangnya pengetahuan ibu tentang teknik menyusui dan pemerahan ASI dapat menyebabkan produksi ASI tidak optimal serta meningkatkan risiko ikterus neonatorum. Tujuan: Menerapkan edukasi mengenai strategi peningkatan produksi ASI untuk memenuhi kebutuhan nutrisi bayi dan mencegah ikterus neonatorum fisiologis. Metode: Studi kasus ini menggunakan manajemen asuhan kebidanan komprehensif melalui pengumpulan data subjektif dan objektif, diagnosis, pelaksanaan, dan evaluasi. Hasil: Asuhan kebidanan *Continuity of Care* (CoC) diberikan melalui edukasi peningkatan produksi ASI. Ibu diberikan edukasi mengenai frekuensi menyusui, posisi dan perlekatan yang tepat, asupan nutrisi dan cairan yang cukup, istirahat, serta perawatan payudara. Setelah intervensi, frekuensi menyusui dan produksi ASI meningkat, sedangkan warna kuning pada kulit bayi berangsur berkurang. Kesimpulan: Edukasi melalui pendekatan CoC meningkatkan pengetahuan dan praktik menyusui serta mendukung penurunan ikterus neonatorum fisiologis. Dampak: Pendekatan CoC yang dikombinasikan dengan edukasi menyusui dapat mendukung keberhasilan menyusui dan kesehatan neonatus.

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A. INTRODUCTION

Neonatal jaundice is a common transitional condition observed in newborns, particularly among full-term infants. Approximately 50% of term neonates experience elevated unconjugated bilirubin levels, which generally become apparent on the third day after birth, are not observed within the first 24 hours of life, and gradually resolve within one week. In physiological jaundice, bilirubin levels typically remain below the critical threshold of 12–13 mg/dL. Nevertheless, early detection and

continuous monitoring are essential because physiological jaundice may progress to pathological jaundice, potentially leading to severe systemic complications (Febriasari et al., 2022).

According to the World Health Organization (WHO), approximately 65% of the four million newborns in Southeast Asia develop neonatal jaundice each year. Nationally, the prevalence of neonatal jaundice in Indonesia is reported to be 42.70%, equivalent to 472 cases per 1,000 live births. In South Kalimantan, a study conducted by (Diyanti et al., 2024) at Dr. H. Moch. Ansari Saleh Regional Hospital, Banjarmasin, reported that 230 out of 320 newborns (75%) delivered between January and October 2022 were diagnosed with neonatal jaundice. These findings indicate that neonatal jaundice remains a significant clinical challenge requiring appropriate and timely management.

The severity of neonatal jaundice is closely associated with the adequacy of breast milk intake, particularly during the early postnatal period. In jaundiced newborns, sufficient breast milk intake stimulates more frequent bowel movements, thereby facilitating bilirubin excretion through the gastrointestinal tract. Consequently, an adequate supply of breast milk plays a crucial role in the successful management of physiological neonatal jaundice (Sulendri et al., 2021).

Adequate breast milk production is one of the primary determinants of successful neonatal nutritional fulfillment. To achieve optimal lactation, mothers require comprehensive education on breastfeeding management, including proper breastfeeding positioning and attachment, on-demand breastfeeding or feeding at least every two hours, and maintaining a balanced diet rich in carbohydrates, animal protein, vegetables, and fruits. Such educational interventions are expected to improve maternal knowledge and self-efficacy, enabling mothers to breastfeed effectively. Therefore, education on strategies to increase breast milk production within the framework of Continuity of Care (CoC) midwifery is considered an important approach for managing physiological neonatal jaundice while minimizing the risk of neonatal complications.

B. METHOD

This Final Project employed a comprehensive midwifery care management approach to examine the clinical condition of a newborn with physiological neonatal jaundice. The care process was conducted through the stages of collecting subjective data, performing objective examinations, establishing the clinical analysis, implementing the appropriate management, and evaluating the outcomes. This approach was used to identify the condition of the newborn and determine appropriate midwifery care related to physiological neonatal jaundice.

The subject of this case study was Mrs. P's newborn, who experienced physiological neonatal jaundice. The case was observed during the neonatal period, with the main identification of jaundice occurring when the infant was six days old. The monitoring process was conducted from the 6th to the 15th day of life. Data collection was conducted from September to December 2025 in the working area of the 9 November Community Health Center, Banjarmasin.

Data were obtained through interviews, clinical observation, physical examination, and medical record documentation. Interviews were conducted to obtain subjective information concerning the condition of the mother and newborn, particularly breastfeeding practices and the adequacy of breast milk intake. Clinical observation and physical examination were performed to identify the newborn's general condition and clinical signs of jaundice. Documentation was used to record the findings obtained during the provision of midwifery care and subsequent evaluations.

The midwifery care focused on the management of physiological neonatal jaundice through education on strategies to increase breast milk production within the Continuity of Care (CoC) approach. The intervention included encouraging the mother to breastfeed as frequently as possible or at least every two hours, improving breastfeeding position and attachment, maintaining adequate nutritional intake consisting of carbohydrates, protein, green vegetables, and fruits, ensuring

sufficient fluid intake, obtaining adequate rest, and maintaining maternal confidence in breastfeeding.

The Continuity of Care approach allowed the midwife to provide ongoing assistance and follow-up during the neonatal period. Follow-up was used to monitor breastfeeding practices, evaluate breast milk production, reinforce the educational information provided, and identify breastfeeding difficulties that might affect the adequacy of breast milk intake. The continuous interaction also enabled the mother to communicate breastfeeding problems and receive guidance according to the condition of herself and her newborn.

Evaluation was conducted by assessing the mother's understanding and application of the recommendations, breastfeeding frequency, breast milk production, and the newborn's clinical condition. The evaluation also considered changes in the yellow discoloration of the infant's skin and the presence or absence of signs indicating pathological jaundice. Through this process, the effectiveness of the educational intervention could be assessed in relation to breastfeeding improvement and the gradual reduction of physiological neonatal jaundice.

C. RESULTS & DISCUSSION

1. Identification of Physiological Neonatal Jaundice in a Newborn

During the second neonatal visit, when the infant was six days old, the examination showed that Mrs. P's baby experienced physiological neonatal jaundice. The condition was characterized by yellow discoloration of the skin corresponding to Grade II according to the Kramer scale. The infant's general condition was good, physiological reflexes were normal, body temperature was within the normal range, and the baby was able to breastfeed. Based on the mother's history, breastfeeding frequency had not been optimal because breast milk production was still insufficient. Consequently, the infant had not received adequate breast milk intake. This condition could delay bilirubin excretion through feces and urine, resulting in the persistence of physiological jaundice.

Physiological neonatal jaundice is a common condition in newborns caused by increased unconjugated bilirubin during the adaptation process after birth. In most full-term infants, jaundice appears after the first 24 hours of life, reaches its peak during the early neonatal period, and gradually decreases when the infant receives adequate breast milk. In the present case, the yellow discoloration was identified on the sixth day of life, while the infant remained in good general condition and was still able to breastfeed.

The assessment showed that inadequate breast milk intake was an important concern in the management of the infant. The mother reported that breast milk production was still insufficient, which affected breastfeeding frequency. Adequate breastfeeding plays an important role in supporting bilirubin elimination because increased breast milk intake can stimulate more frequent bowel movements and facilitate bilirubin excretion through the gastrointestinal tract. (Sulendri et al., 2021) reported that adequate breastfeeding increases bowel movements, thereby accelerating bilirubin excretion.

The identification of physiological neonatal jaundice therefore involved not only observation of skin discoloration but also assessment of breastfeeding practices and the adequacy of breast milk intake. The infant's general condition, ability to breastfeed, physiological reflexes, and body temperature were also considered in determining the appropriate midwifery care. This comprehensive assessment provided the basis for implementing education aimed at increasing breast milk production.

2. Implementation of Education on Increasing Breast Milk Production Through the Continuity of Care Approach

The intervention provided to Mrs. P was carried out through the Continuity of Care (CoC) approach by providing education on strategies to increase breast milk production. The educational materials included encouraging the mother to breastfeed as frequently as possible or at least every two hours, improving breastfeeding position and attachment, maintaining a balanced diet consisting of carbohydrates, protein, green vegetables, and fruits, ensuring adequate fluid intake, obtaining sufficient rest, and maintaining confidence in breastfeeding.

Breastfeeding frequency was emphasized because the infant had not previously received adequate breast milk intake. The mother was encouraged to breastfeed more frequently to fulfill the infant's nutritional needs and support breast milk production. Proper breastfeeding position and attachment were also included in the education to support effective breastfeeding. These recommendations were provided as part of the effort to improve the quality and adequacy of breast milk intake.

The mother was also provided with education regarding adequate nutritional and fluid intake. A balanced diet consisting of carbohydrates, protein, green vegetables, and fruits was recommended to support maternal nutritional needs during breastfeeding. Adequate fluid intake and sufficient rest were also emphasized. In addition, the mother was encouraged to remain confident in breastfeeding so that she could consistently apply the breastfeeding recommendations provided during the care process.

The Continuity of Care approach enabled the midwife to provide continuous assistance during the neonatal period. Through follow-up visits, the midwife could evaluate breastfeeding practices and breast milk production and reinforce educational information when breastfeeding difficulties were identified. The mother was also able to communicate breastfeeding problems directly, allowing the care provided to respond to the needs of both the mother and the infant.

Educational intervention was important because maternal knowledge regarding breastfeeding techniques, breastfeeding frequency, and adequate nutritional intake can influence breastfeeding success. Improved breast milk production contributes to fulfilling the nutritional and fluid requirements of the newborn. Adequate breast milk intake also supports bilirubin excretion through urine and feces, which is relevant to the management of physiological neonatal jaundice.

3. Evaluation of the Educational Intervention on the Reduction of Physiological Neonatal Jaundice

The evaluation conducted during the subsequent neonatal visit demonstrated positive progress after the mother implemented the recommended educational interventions. The mother was able to explain the strategies for increasing breast milk production and successfully applied the recommendations by breastfeeding more frequently. As breast milk production improved, the infant's breastfeeding frequency also increased.

Along with the increased breast milk intake, the yellow discoloration of the infant's skin gradually decreased compared with the previous visit. The infant remained in good general condition, breastfeeding activity improved, and no signs of pathological jaundice were observed. These findings indicate that education provided through the Continuity of Care approach improved maternal knowledge and supported successful breastfeeding.

The improvement in breastfeeding practices was relevant to the management of physiological neonatal jaundice because adequate breast milk intake facilitates bilirubin excretion through the gastrointestinal tract. The increased intake of breast milk supported the infant's nutritional fulfillment while contributing to the physiological elimination of bilirubin. (Sulendri et al., 2021) reported that breastfeeding was associated with the incidence of hyperbilirubinemia in newborns, while

(Fatmawati et al., 2022) reported that early and adequate breastfeeding contributes to the reduction of physiological neonatal jaundice in neonates.

The results of this case also demonstrate the importance of continuous midwifery assistance in supporting breastfeeding practices. Through the Continuity of Care approach, the mother's understanding could be evaluated and the educational information could be reinforced during follow-up. This continuous process allowed breastfeeding practices and the newborn's condition to be monitored throughout the care period.

Overall, education on strategies to increase breast milk production through the Continuity of Care approach had a positive impact on the management of physiological neonatal jaundice in Mrs. P's infant. The intervention was followed by improved maternal knowledge, increased breastfeeding activity, improved breast milk production, and gradual reduction of the yellow discoloration of the infant's skin. Continuous midwifery care also enabled regular monitoring and evaluation of the condition of both mother and infant.

D. CONCLUSIONS AND SUGGESTIONS

The overall analysis indicates that the implementation of comprehensive midwifery care through the Continuity of Care (CoC) approach, combined with education on strategies to increase breast milk production, contributed positively to the management of physiological neonatal jaundice in Mrs. P's newborn. The identification of Grade II physiological jaundice on the sixth day of life was accompanied by inadequate breastfeeding frequency and insufficient breast milk production, indicating that the adequacy of breast milk intake was an important aspect requiring attention in the management of the newborn. The educational intervention focused on increasing breastfeeding frequency, improving breastfeeding position and attachment, maintaining adequate maternal nutritional and fluid intake, obtaining sufficient rest, and strengthening maternal confidence in breastfeeding. Following the intervention, the mother demonstrated improved understanding and was able to apply the recommended breastfeeding practices, while breastfeeding frequency and breast milk production also improved.

The subsequent evaluation showed that improvement in breast milk intake was accompanied by a gradual reduction in the yellow discoloration of the infant's skin. The infant remained in good general condition, breastfeeding activity improved, and no signs of pathological jaundice were observed. These findings indicate that adequate breast milk intake can support the physiological elimination of bilirubin through urine and feces and contribute to the gradual resolution of physiological neonatal jaundice. The findings are also consistent with previous studies cited in the article, which indicate that adequate breastfeeding is associated with bilirubin elimination and reduction of physiological neonatal jaundice.

The implementation of CoC further demonstrates that breastfeeding education is more effective when accompanied by continuous monitoring and follow-up. Through ongoing midwifery assistance, the mother had opportunities to discuss breastfeeding difficulties, receive reinforcement of previously provided information, and apply the recommendations according to the needs of the infant. Therefore, the CoC approach not only supported the improvement of maternal breastfeeding knowledge and practices but also facilitated continuous monitoring of the newborn's condition.

Based on these findings, breastfeeding education through the Continuity of Care approach can be considered an appropriate non-pharmacological midwifery strategy for supporting the management of physiological neonatal jaundice, particularly when inadequate breast milk intake is identified as one of the contributing concerns. Future midwifery practice should strengthen continuous breastfeeding education and monitoring during the neonatal period, especially regarding breastfeeding frequency, proper breastfeeding techniques, maternal nutritional and fluid needs, and early recognition of abnormal signs in newborns. Further studies involving a larger

number of cases and longer observation periods are recommended to provide stronger evidence regarding the effectiveness of breastfeeding education through the Continuity of Care approach in supporting the reduction of physiological neonatal jaundice.

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