

THE EFFECTIVENESS OF BABY HYDROTHERAPY ON THE QUALITY OF JAUNDICE BABY'S SLEEP PATTERNS; LITERATURE REVIEW

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ABSTRAK : EFEKTIFITAS *BABY HYDROTHERAPY* TERHADAP KUALITAS POLA TIDUR BAYI IKTERUS; LITERATURE REVIEW

Latar Belakang: Masalah tidur yang terjadi pada bayi ikterus disebabkan karena kadar bilirubin yang tinggi dalam tubuh membuat sirkulasi darah tidak lancar, sistem saraf terganggu sehingga terjadinya penurunan kesadaran pada bayi, hal ini akan membuat bayi tidur terus menerus dan membuat tonus otot lemah yang bisa membuat bayi bahkan tidak dapat tidur sama sekali sehingga kebutuhan pola tidur terganggu, jika hal ini tidak dilakukan penanganan maka dapat mengakibatkan kerusakan bahkan kecacatan otak atau kern ikterus.

Tujuan: Untuk mengetahui efektifitas terapi air yang akan diberikan untuk menangani gangguan tidur bayi ikterus.

Metode: Metode yang digunakan yaitu pendekatan studi literature review dengan menggunakan 2 database (Portal Garuda dan Google Scholar). Penilaian dalam penelitian ini menggunakan The JBI Critical Appraisal Tools untuk mengkaji risiko bias dalam studi.

Hasil: Hasil penelitian literature review berdasarkan dari 6 jurnal yang telah ditelaah bahwa terapi air atau baby hydrotherapy efektif terhadap kualitas tidur bayi ikterus bahkan dapat menurunkan kadar bilirubin yang berlebihan dalam tubuh bayi.

Simpulan: Baby hydrotherapy merupakan terapi efektif yang dapat membantu meningkatkan kualitas tidur pada bayi ikterus, dikatakan efektif jika dilakukan pemberian dengan frekuensi 1-2 kali dalam seminggu selama 15 menit dengan menggunakan suhu air 36-38°C.

Kata Kunci : bayi, *hydrotherapy*, ikterus, kualitas pola tidur.

ABSTRACT

Background: Sleep problems that occur in jaundiced babies are caused by high levels of bilirubin in the body making blood circulation not smooth, the nervous system is disturbed so that there is a decrease in consciousness in the baby, this will make the baby sleep continuously and make muscle tone weak which can make babies can't even sleep at all so that the need for sleep patterns is disrupted, if this is not handled it can result in damage and even brain defects or kernicterus.

Purpose: To determine the effectiveness of water therapy that will be given to treat sleep disorders in infants with jaundice.

Method: The method used is a literature review study approach using 2 databases (Garuda Portal and Google Scholar). The assessment in this study uses The JBI Critical Appraisal Tools to assess the risk of bias in the study.

Results: The results of a literature review research based on 6 journals that have been reviewed that water therapy or baby hydrotherapy is effective on the sleep quality of jaundiced babies can even reduce excessive bilirubin levels in the baby's body.

Conclusion: Baby hydrotherapy is an effective therapy that can help improve sleep quality in jaundiced babies. It is said to be effective if given with a frequency of 1-2 times a week for 15 minutes using a water temperature of 36-38°C.

Keywords: baby, *hydrotherapy*, jaundice, quality of sleep patterns.

INTRODUCTION

Jaundice is a condition where there is a yellow color in the baby's body that occurs due to an increase in the amount of protein in the blood called bilirubin. Neonates or infants aged <28 days may experience jaundice. This yellow color appears because the baby's liver needs adaptation so that bilirubin in the blood can be removed within a few weeks after birth. If there is failure or delay, serum or plasma bilirubin in the blood will cause yellow staining of the sclera throughout the baby's body (Fetriyah *et al.*, 2019).

According to research (Fetriyah *et al.*, 2019) newborns produce high bilirubin due to an increase in the number of hematocrit and volume of red blood cells per body weight, red blood cells of newborns and shorter life spans (70 to 90 days) usually 120 day. Although bilirubin production is increased in newborns, the process of conjugation and clearance of bilirubin can be slow. Some of them are hepatic glucuronosyl transferase immaturity and babies who do not get enough breast milk can cause delays in the clearance of bilirubin. If the bilirubin level increases above normal, it will cause a yellow color in the baby's body due to the accumulation of bilirubin in the skin and mucous membranes.

Complications of neonatal jaundice are also the most common cause of neonatal hospitalization in the first month after birth (about 19%). Most of the jaundice neonatorum can be temporary and not permanent which can disappear by the end of the first week after birth, while a small number have severe hyperbilirubinemia which has the potential to pose a high risk of acute neonatal bilirubin encephalopathy and kernicterus. One of the factors causing pathological jaundice in neonates is a history of preterm gestational age (Fetriyah *et al.*, 2019).

Poor sleep quality in babies can have several causes problems such as decreased immunity, impaired physical growth and impaired baby brain development. The importance of sleep time for the development of the baby, then the need for sleep must really be met so as not to adversely affect its development. Inadequate sleep and poor sleep quality can result in physiological and psychological balance disorders. Babies who experience sleep disturbances will experience the same disturbances in the future, especially during the growth period (Haerani *et al.*, 2019).

Hydrotherapy is a nonpharmacological therapy that can increase energy expenditure, which encourages increased food intake in infants, thereby accelerating the formation of normal bacterial flora in the intestinal tract, making it comfortable for bilirubin to return to urobilinogen and to be excreted from the body. The level of bilirubin will be reduced, thereby

reducing the jaundice index in newborns (Xiu-min *et al.*, 2014).

According to research (Rufaindah, 2019), Hydrotherapy in infants can help overcome sleep disturbances, especially jaundice babies. Babies with jaundice experience a decrease in consciousness which makes the baby look sleepy continuously and there is a decrease in muscle tone so that the baby looks weak and stiff in the neck. Hydrotherapy or water therapy can improve the quality of baby's sleep, because when the baby is doing water therapy it will improve the baby's blood circulation smoothly, increase the body's metabolism, expedite the need for elimination and increase milk intake which can make the baby's stiff body more relaxed so that it helps improve sleep patterns. sleep and can also reduce the index of bilirubin in the body.

Swimming can promote the motility of the newborn's digestive tract, increase the secretion of gastrin and insulin, promote food to be digested and assimilated. According to research (Xiu-min *et al.*, 2014) swimming increases thirst in babies, increasing the number of swims, can accelerate the discharge of meconium.

RESEARCH METHODS

The research method used is narrative review. The literature sources used in this study were searched through Google Scholar and the Garuda portal with keywords using PICOST. The assessment in this study used The JBI Critical Appraisal Tools to assess the risk of bias in the study.

RESEARCH RESULTS

Based on 6 research journals, it can be concluded that hydrotherapy or water therapy can improve the quality of sleep patterns in jaundiced babies. The frequency of giving hydrotherapy 1-2 times a week with a duration of 10-15 minutes with a water temperature of 36-38°C. Hydrotherapy is said to be effective because it can reduce the level of bilirubin in the jaundice baby because when the jaundice baby is soaked in warm water it can stimulate the baby's jaundice muscles to become stiff and decrease consciousness resulting in sleep disturbances, especially stimulation of the parasympathetic nerves and most importantly involved in the sleep process, namely parasympathetic autonomic nerves, rafe nuclei and nuclei which affect the sleep quality of jaundice babies, increase relaxation in babies which affect the sleep hormone melatonin, which comes out smoothly without obstacles, good blood flow and adequate oxygen demand to the brain will make the baby's concentration and alertness improve also.

DISCUSSION

According to a research article by Dehghani, et al., 2019 entitled "Comparison of the effectiveness of bath and massage in bilirubin levels in neonates" water therapy or hydrotherapy is an effective therapy given to babies with sleep disorders, especially to baby jaundice because it can reduce bilirubin levels. Water therapy is given by immersing the baby in water with a temperature of 36-38°C for 10-15 minutes with a frequency of 1-2 times a day for a week. The effect of warm water immersion given to newborns with jaundice causes a decrease in bilirubin levels and an increase in body weight after being given therapy. Disturbances in sleep patterns in jaundice babies arise because the baby's condition with high bilirubin levels causes a decrease in consciousness in the baby so that the baby will sleep continuously, by doing water therapy by bathing in water with temperatures ranging from 36-38°C can have the effect of reducing bilirubin levels and relaxing babies with jaundice so that it affects the quality of baby's sleep patterns in measuring bilirubin levels can be done by looking at the yellow color on the baby's skin or called the cremer degree or measuring total bilirubin levels in a health laboratory.

According to a research article by Li Wang, et al., (2017) entitled "The effect of Traditional Chinese medicine washing combined with Massage for neonatal jaundice" that swimming or bathing is an effective therapy because it can increase gastrin and insulin secretion, increase milk intake and encourage bowel movements, so that the bilirubin in the baby's body will come out until the decrease in bilirubin levels. Traditional Chinese Medicine (TCM) is a therapy performed on jaundice babies by swimming or soaking in warm water or also known as hydrotherapy with a frequency of 1-2 times a day for 5-7 days. TCM can also be combined with massage as one of the common therapies to avoid the side effects of other treatments.

According to Setiarini (2019) in the study "The Influence of Baby Spas on the Quality of Baby Sleep" spas are traditional health efforts using a holistic approach with comprehensive care using a combination method of hydrotherapy and massage skills to balance the body. Hydrotherapy that is used regularly can help the baby's immune system against diseases, one of which is jaundice where high levels of bilirubin in the baby's body can cause the general condition to decrease, usually the main thing that is most often seen is that the baby looks weak, the neck looks stiff, and usually also affects the baby's sleep pattern is disrupted and even the baby can not sleep at all. Taking a bath can make the baby's body much fresher, cleaner and increase relaxation in the baby which affects the sleep hormone melatonin to come

out smoothly without obstacles, good blood flow and sufficient oxygen demand to the brain will make the baby's concentration and alertness more getting better too.

The touch of water therapy can increase intestinal peristalsis and the frequency of bowel movements in newborns increases the excretion of bilirubin through the feces so that circulating bilirubin is less absorbed by the liver and intestines. And the early excretion of fetal feces is more conducive to increasing the number of suckers for toddlers, so that they get an adequate supply of nutrients. In addition, several studies have confirmed that from the start comprehensive care interventions such as early suction and early contact, neonatal touch, swimming, health education and other measures can reduce the occurrence of physiological neonatal jaundice and reduce the degree of neonatal jaundice. Therefore, it is necessary to strengthen nursing in the neonatal period of life. In recent years, water therapy in jaundiced infants has become a method of treatment and home care for infants with hyperbilirubinemia. Therefore, treatment and management of infant jaundice is very important because it will affect the quality of their sleep patterns (Li et al., 2021).

According to (Royhanaty et al., 2018) it was found that of all Respondents were 34 respondents 17 who had a baby spa, the average time in hours of baby sleep quality was 15.5 per hour the day after the baby spa was done. Of the 17 respondents who did not have a baby spa, the average time in hours for the baby's sleep quality was 13 hours per day. Statistical test results that there is effectiveness of baby spa on the sleep quality of infants aged 3-4 months at BPM midwife siti fatimah cimahi city in 2016. With a P value of $0.000 < \alpha = 0.05$ which means that there is a significant difference between the effectiveness of baby spa on long sleep baby. This research is also in line with Siti Fatimah Lubis' research entitled Correlation between Baby SPA and Sleep Quality for Infants Aged 0-6 Months at Lolyop Kids And Baby SPA Medan which states that baby spa treatment can stimulate the fulfillment of the baby's sleep needs. The main need for babies is sleep, because it is at this time that neuro-brain repair occurs and approximately 75% of growth hormone is produced. The quality of a baby's sleep does not only affect physical development, but also his attitude the next day. Babies who sleep enough without waking up frequently will be fitter and less fussy. The characteristics of a baby getting enough sleep, namely, he will be able to fall asleep easily at night, be fit when he wakes up, not fussy, and do not need more naps than needed according to his development. Inadequate sleep and poor sleep quality can result in physiological and psychological

balance disorders. Physiological effects include decreased daily activities, feeling tired, weak, poor neuromuscular coordination, slow healing process and decreased immune system. While the psychological impact includes more unstable emotions, anxiety, lack of concentration, lower cognitive abilities and combining experiences. However, excess sleep time (especially quiet sleep) causes excessive energy storage so that less interaction causes less optimal emotional and cognitive development in the future and jaundice in babies can cause kernicterus or brain damage.

CONCLUSION

Based on the 6 research journals, it can be concluded that hydrotherapy or water therapy can improve the quality of sleep patterns in jaundiced babies. The frequency of giving hydrotherapy 1-2 times a week with a duration of 10-15 minutes with a water temperature of 36-38°C. Hydrotherapy is said to be effective because it can reduce the level of bilirubin in the jaundice baby's body because when the jaundice baby is soaked in warm water it can stimulate the stiff baby's jaundice muscles and decrease consciousness which results in sleep disturbances, especially stimulation of the parasympathetic nerves and most importantly involved in the sleep process, namely parasympathetic autonomic nerve nuclei rafe and nuclei which affect the sleep quality of jaundiced babies.

SUGGESTION

It is hoped that the results of this study can provide information about non-pharmacological therapy that can be given to babies with disturbed sleep patterns, especially in jaundiced babies, because the baby's sleep pattern is very important and will affect the development and growth of the next baby and to prevent acute brain damage or commonly called kern jaundice.

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