

THE RELATIONSHIP OF EXCLUSIVE BREASTFEEDING WITH THE INCIDENT OF NEWBORN JAUNDICE

Efa Septiana¹

Prodi DIII Kebidanan Akademi Kebidanan Wahana Husada Bandar Jaya
Email : efaseptiana573@gmail.com

ABSTRAK : HUBUNGAN PEMBERIAN ASI EKSKLUSIF DENGAN KEJADIAN IKTERUS BAYI BARU LAHIR

Latar Belakang : Data epidemiologi menunjukkan bahwa lebih dari 50% bayi baru lahir menderita ikterus pada minggu pertama kehidupannya. Ikterus fisiologis timbul pada hari kedua dan ketiga yang ditandai dengan perwarnaan ikterus pada kulit dan sklera akibat akumulasi bilirubin berlebih dan tidak terkonjugasi.

Tujuan : Penelitian bertujuan untuk mengetahui hubungan Asi Eksklusif, karakteristik ibu (usia kehamilan, paritas, jenis persalinan), karakteristik bayi (berat badan lahir bayi), cara penanganan ibu dengan kejadian ikterus bayi baru lahir.

Metode : Jenis penelitian adalah penelitian deskriptif dengan pendekatan desain cross sectional. Populasi dalam penelitian ini seluruh ibu postpartum yang bersalin di klinik dan yang di rujuk ke rumah sakit selama bulan Agustus/September sebanyak 40 orang, besar sampel 36 orang. Teknik sampel purposive sampling. Analisa data menggunakan univariat dan bivariat *chi square*.

Hasil : Hasil uji chi square diketahui ada hubungan usia kehamilan (p-value $0.015 < 0.05$), paritas (p-value $0.003 < 0.05$), jenis persalinan (p-value $0.016 < 0.05$), berat badan lahir (p-value $0.018 < 0.05$), cara penanganan yang dilakukan ibu postpartum (p = $0.009 < 0.05$) dengan kejadian ikterus bayi baru lahir. Diharapkan ibu postpartum mengetahui manfaat pemberian ASI sejak dini serta menjaga gizi selama menyusui bayi untuk memenuhi kebutuhan ASI pada bayi sehingga menurunkan risiko ikterus.

Kesimpulan : hubungan Asi Eksklusif, karakteristik ibu (usia kehamilan, paritas, jenis persalinan), karakteristik bayi (berat badan lahir bayi), cara penanganan ibu dengan kejadian ikterus bayi baru lahir.

Saran : Diharapkan petugas kesehatan dalam memberikan pelayanan edukasi pada ibu bahwa pentingnya ASI Eksklusif untuk mencegah Ikterus bayi baru lahir

Kata Kunci : Bayi Baru Lahir, Karakteristik Ibu, Kejadian Ikterus, Pemberian ASI Dini

ABSTRACT

Background: Epidemiological data shows that more than 50% of newborns suffer from jaundice in the first week of life. Physiological jaundice appears on the second and third days, characterized by jaundice on the skin and sclera due to the accumulation of excess and unconjugated bilirubin.

Objective: The research aims to determine the relationship between exclusive breastfeeding, mother's characteristics (gestational age, parity, type of delivery), baby characteristics (baby's birth weight), mother's handling method with the incidence of newborn jaundice.

Method: This type of research is descriptive research with a cross sectional design approach. The population in this study were all 40 postpartum mothers who gave birth in clinics and were referred to hospitals during August/September, with a sample size of 36 people. Purposive sampling technique. Data analysis used univariate and bivariate chi square.

Results: The results of the chi square test showed that there was a relationship between gestational age (p-value $0.015 < 0.05$), parity (p-value $0.003 < 0.05$), type of delivery (p-value $0.016 < 0.05$), birth weight (p-value $0.018 < 0.05$), how to handle postpartum mothers (p = $0.009 < 0.05$) with the incidence of jaundice Newborn babies. It is hoped that postpartum mothers will know the benefits of giving breast milk from an early age and maintain nutrition while breastfeeding the baby to meet the baby's breast milk needs, thereby reducing the risk of icterus.

Conclusion: the relationship between exclusive breastfeeding, mother's characteristics (gestational age, parity, type of delivery), baby's characteristics (baby's birth weight), how the mother handles the incidence of newborn jaundice.

Suggestion: It is hoped that health workers will provide educational services to mothers regarding the importance of exclusive breastfeeding to prevent newborn jaundice.

Keywords: Occurrence of icterus, Early Breastfeeding, Newborns, Maternal Characteristics

INTRODUCTION

Neonatal jaundice is a clinical condition in infants characterized by jaundice staining of the skin and sclera due to excessive accumulation of unconjugated bilirubin. Clinically, jaundice will begin to appear in newborn babies when the blood bilirubin level is 5-7 mg/dL (Ministry of Health 2019). Physiological jaundice is jaundice that appears on the second and third days. Based on the Kramer Scale, this condition has no pathological basis, where the levels do not exceed dangerous levels. It has no potential for kernicterus and does not cause illness in babies (Apriyulan and Dwihestie 2020). Based on data on 7,000 newborn babies in the world who die every day (Indonesia 185/day, with AKN 15/1000 live births), 25 percent of these baby deaths occur in the first week at the age of 0-6 days, and 40 die within 24 days. first hour. Based on the results of one of the social population surveys, namely the 2017 Indonesian Demographic and Health Survey (SDKI), it shows that 47% is the Neonatal Mortality Rate (AKN) or 15 per 1,000 live births, the majority of which are caused by hematological disorders, 6%.

The indicator in determining the level of public health is the Infant Mortality Rate (IMR). Most newborn babies experience jaundice in the first week of life. Epidemiological data shows that more than 50% of newborns suffer from jaundice which can be detected clinically in the first week of life. IMR refers to the number of babies who die in the phase between birth until the baby has not reached 1 year of age per 1,000 live births. The main problem causing death in infants and toddlers is during the neonatal period (newborn babies aged 0-28 days) (Central Statistics Agency, 2021). Jaundice in newborns in the first week occurs in 60% of term babies and 80% of preterm babies, while babies who are breastfed 8-12 times become severely jaundiced due to lack of breast milk intake (Dasnur and Sari 2018). Jaundice occurs more often in male neonates, preterm, normal birth weight, born by caesarean section, with perinatal complications and breastfeeding less than 8 times/day (Tazami, Syah and Jambi, 2019).

Hyperbilirubin can be caused by physiological and pathological processes. Hyperbilirubinemia is a condition where there is an increase in bilirubin levels in newborn babies and is characterized by laboratory results reaching a value that can trigger the potential for pathological icterus and if not treated properly and quickly will cause mental retardation. Births with a gestational age of over 37 weeks hyperbilirubin occur

if serum bilirubin is greater than 12.5 mg/dL (Rena 2018). This increase in bilirubin levels in the blood is caused by bilirubin that is not properly conjugated because the neonate's liver is unable to clear the bilirubin in the blood quickly, so that calories and fluids decrease and yes defecation makes the baby turn yellow. The types of jaundice are physiological and pathological. Physiological jaundice is not dangerous if treated quickly and appropriately. If it is pathological, it must be treated immediately (Rompis et al, 2019).

According to Hosp & Med (2021), the more often a mother breastfeeds her baby, the less incidence of neonatal jaundice. The more often the baby sucks, the more the hormone prolactin will be released by the pituitary gland. As a result, more breast milk is produced by glandular cells. On the other hand, reduced suckling by the baby causes breast milk production to decrease (Nurrizka, 2019). The results of research reported by Devi & Vijaykumar (2023) explain that inadequate breastfeeding is closely related to early initiation of breastfeeding, frequency of breastfeeding and provision of additional water/food supplements. Huang (2021) said that babies who receive insufficient breast milk intake cause the baby to experience dehydration. and calorie deficiency. This condition often occurs in babies who receive breast milk through breastfeeding with insufficient intake. Frequent breastfeeding frequency (more or equal to 8-12x/24 hours), rooming in breastfeeding at at night can reduce the incidence of early jaundice due to breast milk (Komalasari 2021).

Maryuni (2019) said that there is an influence between early breastfeeding on the incidence of jaundice in newborn babies aged 0-7 days. Palimbo et al (2019) said that one of the benefits of breastfeeding is that babies are better able to deal with jaundice. Pujiastuti (2019) said the number The bilirbin in the baby's blood is greatly reduced when colostrum is given which can overcome yellowness, as long as the baby is breastfed as often as possible and is not given breast milk substitutes. This controversy between breastfeeding and the incidence of neonatal jaundice can lead to an increase in the promotion of breastfeeding and a decrease in the incidence of neonatal jaundice in the first week of birth. The research results of Fatmawati & Sumiati (2020) explain that inadequate breastfeeding may cause dehydration, which is believed to be the cause of neonatal jaundice. Imron and Metti (2019) newborn babies who are given

adequate breast milk are proven to accelerate the excretion of bilirubin through meconium and reduce absorption of bilirubin in the intestine. Meconium, which contains a lot of bilirubin, if there is a delay in expulsion, can be absorbed by the intestine, thereby increasing bilirubin levels in the enterohepatic circulation (Anggraini 2019).

Then, observations were made of eight babies under 20 days old and it was found that four of the babies experienced yellow skin changes that occurred on the fourth day after birth and showed signs of physiological jaundice but did not exceed ten days after the jaundice appeared. There was one baby who experienced physiological jaundice which appeared on the third day after birth and occurred longer than seven days after the jaundice appeared but did not exceed 15 days after birth and there were three babies who did not show signs of jaundice from the time they were born. The aim of this study was to determine the relationship between early breastfeeding and the incidence of physiological jaundice in infants.

RESEARCH METHODS

The type of research is descriptive research with a cross sectional design approach. The population in this study were all 40 postpartum mothers who gave birth in clinics and were referred to hospitals during August/September, with a sample size of 36 people. Purposive sampling technique. Data analysis used univariate and bivariate chi

square. The inclusion criteria taken were mothers who agreed to be respondents, mothers who had babies who had experienced icterus, mothers of babies who were experiencing icterus. The analysis used is univariate and bivariate analysis using the chi square test.

RESEARCH RESULT

Univariat Analysis

Tabel 1 shows that the characteristics of the gestational age of respondents were that the majority of respondents were at full term (37-42 weeks) as many as 25 people (69.4%) and the minority were at preterm gestational age (>37 weeks) as many as 5 people (13.9%). Parity characteristics of respondents: the majority of respondents with Multiparous Parity (2-5 Children) were 21 people (58.3%) and the minority were with Primipara Parity (1 Child), namely 5 people (13.9%). Characteristics of the type of birth of respondents. The majority of respondents were normal, namely 21 people (58.3%), and the minority were artificial birth, namely caesarean section, 15 people (41.7%). Characteristics of newborn weight: The majority of respondents with moderate birth weight were 31 people (86.1%) and the minority with more than 2 newborn babies (5.6%). So it can be said that the characteristics of the treatment methods used by postpartum mothers to care for jaundiced babies are mostly good, namely 25 people (69.4%) and the minority are not good, namely 11 people (30.6%).

Tabel 1
Frequency Distribution of Gestational Age, Parity, Type of Delivery, Newborns, and Postpartum Mother

Karakteristik	Frekuensi	Presentase
Usia Kehamilan		
Kurang bulan (<37 minggu)	5	13.9
Cukup bulan (37-42 minggu)	25	69.4
Lebih bulan (>42 minggu)	6	16.7
Paritas		
Primipara (1 anak)	5	13.9
Multipara (2-5 anak)	21	58.3
Grandmultipara (<5 anak)	10	27.8
Jenis Persalinan		
Persalinan normal	21	58.3
Persalinan Buatan	15	41.7
Persalinan Anjuran	0	00.0
Berat Badan Lahir		
Rendah	3	8.3
Sedang	31	86.1
Lebih	2	5.6
Cara Penanganan Ibu <i>Postpartum</i>		
Baik	25	69.4
Tidak Baik	11	30.6

Bivariate Analysis

Tabel 2
The Relationship Between Gestational Age and the Incidence of Newborn Jaundice

Paritas	Kejadian Ikterus				Total		P value
	Mengalami ikerus		Tidak icterus		N	%	
	N	%	N	%			
Primipara	4	80	1	20	5	100	0.003
Multipara	11	52.4	10	47.6	21	100	
Grandmultipara	8	80	2	20	10	100	

Table 2 shows that from 21 multiparous parity respondents (2-5 children), the majority came from respondents who experienced jaundice, namely 11 respondents (52.4%) and the minority came from respondents who did not experience jaundice, namely 10 respondents (47.6%). Of the 10 respondents with grandmultiparous parity (>5 children), the majority came from those who

experienced jaundice, namely 8 respondents (80.0%) and the minority came from respondents who did not experience jaundice, namely 20.0%. Based on the results of the chi-square test, the result was $p = 0.003$ ($p < \alpha = 0.05$), meaning this shows that parity has a significant relationship with the incidence of newborn jaundice.

Tabel 3
Relationship between Type of Delivery and Incidence of Newborn Jaundice

Jenis Persalinan	Kejadian Ikterus				Total		P value
	Mengalami ikerus		Tidak icterus		N	%	
	N	%	N	%			
Normal	10	47.6	11	52.4	21	100	0.016
Buatan	13	86.7	2	13.3	15	100	
Anjuran	0	00.0	0	0.0	0	0.0	

Tabel 3 shows that from 21 respondents with normal delivery, the majority came from respondents who did not experience jaundice, namely 11 respondents (52.4%), and the minority came from respondents who experienced jaundice, namely 10 respondents (47.6%). Of the 15 respondents with artificial birth, the majority came from respondents who experienced jaundice, namely 13 respondents

(86.7%) and the minority came from respondents who did not experience jaundice, namely 2 respondents (13.3%). Based on the results of the chi-square test, the result was $p = 0.016$ ($p < \alpha = 0.05$), meaning that this shows that the type of delivery has a significant relationship with the incidence of newborn jaundice.

Tabel 4
The relationship between birth weight and the incidence of newborn jaundice

Jenis Persalinan	Kejadian Ikterus				Total		P value
	Mengalami ikerus		Tidak icterus		N	%	
	N	%	N	%			
Rendah	3	100	0	0	3	100	0.018
Sedang	20	64.5	11	35.5	31	100	
Lebih	0	00.0	2	100	2	100	

Table 4 shows that from 31 respondents with moderate birth weight (2500-3999 grams), the majority came from respondents who experienced jaundice, namely 20 respondents (64.5%) and the

minority came from those who did not experience jaundice, namely 11 respondents (35.5%). Of the 3 respondents with low birth weight (<2500 grams), the majority came from respondents who

experienced jaundice, namely 3 respondents (100.0%), and the minority came from respondents who did not experience jaundice, namely 0 respondents (0.0%). Based on the results of the chi-

square test, the result was $p = 0.018(p < \alpha) \alpha = 0.05$, meaning this shows that birth weight has a significant relationship with the incidence of newborn jaundice.

Tabel 5

The Relationship between Handling Methods Used by Postpartum Mothers and Events Newborn Jaundice

Jenis Persalinan	Kejadian Ikterus				Total		P value
	Mengalami ikterus		Tidak ikterus		N	%	
	N	%	N	%			
Baik	12	48	13	52	25	100	0.09
Tidak Baik	11	100	0	0	11	100	

Table 6 can be seen from 25 respondents who handled postpartum mothers well, the majority came from respondents who did not experience urinary tract infections, namely as many as 13 respondents (52.0%), and the minority came from respondents who experienced jaundice, namely 12 respondents (48.0%). Of the 11 respondents whose handling of postpartum mothers was not good, the majority came from those who experienced jaundice, namely 11 respondents (100.0%) and the minority came from those who did not experience jaundice, namely 0 respondents (0.0%). Based on the results of the chi-square test, the result was $p = 0.009 (p < \alpha) \alpha = 0.05$, meaning that this shows that the handling method used by postpartum mothers has a significant relationship with the incidence of jaundice in newborn babies.

Based on the results of the chi-square test, the result was $p = 0.015 (p < \alpha) \alpha = 0.05$, meaning this shows that gestational age has a significant relationship with the incidence of newborn jaundice. This explains that the gestational age of the mother at birth is a risk factor for the incidence of hyperbilirubin in newborn babies, because gestational age is an important factor and determines the quality of the health of the baby born. Newborn babies of less gestational age are associated with low birth weight and of course this will affect the immune system of babies who are not yet ready to accept and adapt to the environment outside the womb, so they have the potential to suffer from various complications, one of which is neonatal jaundice (Purnamaningrum 2020). This is in line with research by Mendri & Prayogi (2017) using the chi-square statistical test which states that there is a significant relationship between gestational age and hyperbilirubin neonates with a p-value = 0.009. This can be explained in theory that icterus caused by prematurity usually occurs because their bodies are less ready to excrete bilirubin effectively. Newborn babies make more bilirubin than adults because they

have more red blood cell turnover. The liver that is still developing in newborn babies cannot carry out the conjugation process. To avoid complications, babies born prematurely require special treatment even when their bilirubin levels are lower than babies born with normal bilirubin levels.

Based on the results of the chi-square test, the result was $p = 0.003 (p < \alpha) \alpha = 0.05$, meaning that this shows that parity has a significant relationship with the incidence of newborn jaundice. This is in line with Fitriani's (2021) research using the chi-square statistical test which states that there is a significant relationship between parity and the incidence of jaundice in neonates at Wates Kulon Progo Regional Hospital with a p-value = 0.007. In multiparas (2 – 5 children), the risk is greater than in primiparas because the higher the mother's parity, the riskier the pregnancy. The dangers of pregnancy in multigravida are anemia, malnutrition, looseness of the abdominal lining, so that this condition can cause the uterine muscles to weaken and result in weak uterine contractions, causing bleeding during labor or after delivery. Multiparous parity (2 – 5 children) has a risk of increasing pregnancy complications, fetal growth disorders, asphyxia, prematurity. Apart from that, it is a predisposing factor for the emergence of fibrotic tissue in the chorion villi of the placenta, making it easier for antepartum bleeding to occur, disruption of the placenta so that the transportation of food and oxygen from the mother to the fetus is disrupted (Danaei et al, 2021). Births in primiparous and multiparous parities both have a risk of developing jaundice, because during the perinatal period all mothers are at risk of birth trauma in the baby. The cause of jaundice is still a predisposing factor because what is often found includes maternal factors such as economic and social conditions, maternal age, pregnancy complications, perinatal factors such as birth trauma, complications and infections, and maternal factors such as prematurity and LBW (Hidayati & Rahmaswari, 2020)

Based on the results of the chi-square test, the result was $p = 0.016$ ($p < \alpha$) $\alpha = 0.05$, meaning this shows that the type of delivery has a significant relationship with the incidence of newborn jaundice. This is in line with Setyorini & Kristiningrum's (2019) research on the Description of Maternal Characteristics with the Occurrence of Neonatal Jaundice at the Salatiga District Hospital using a descriptive research design and cross sectional approach. The results showed that there was a relationship between the type of delivery and the incidence of Neonatal Jaundice at the Salatiga City General Regional Hospital. with p -value = 0.013. Both normal and surgical types of delivery have a risk of developing jaundice because each type of delivery allows complications to occur.

Neonatal jaundice can occur during any labor process, both normal labor and surgical labor. Babies who are born naturally or surgically may not cry immediately at birth and cry late, resulting in hemodynamic abnormalities resulting in respiratory depression and causing hypoxia throughout the body which results in respiratory/metabolic acidosis which can disrupt bilirubin metabolism (Faiqah, 2021).

One of the risk factors for neonatal jaundice is the type of delivery that requires certain procedures such as caesarean section, vacuum extraction, forceps extraction. Every delivery with action will cause birth trauma, especially in the baby, including the emergence of hematomas and bleeding. Hematomas can increase the destruction of red blood cells resulting in hemolysis and this situation can trigger neonatal jaundice. People consider jaundice to be a dangerous disease, as evidenced by mothers who have newborn babies always asking whether the baby looks yellow or not. Especially mothers who have jaundice babies feel anxious and think that jaundice requires special attention and care because it can cause death (Puspita, 2020).

Babies who experience neonatal jaundice with a history of normal delivery may be caused by breast milk jaundice. Even though breastfeeding was not controlled in this study, babies with normal deliveries received breast milk through the joint care program. In this situation (breast milk jaundice) it can become a pathology if the bilirubin levels reach hyperbilirubinemia values, namely increased levels of bilirubin in the blood which are more than normal. In full-term babies, the bilirubin level in the blood is said to be physiological if it is less than 15 mg% after 2x24 hours (Rohani & Wahyuni, 2018). Jaundice associated with breast milk is the result of inhibition of the action of glucuronyl transferase by pregnadiol or free fatty acids found in breast milk. Occurs 4 to 7 days after birth. There is an increase in unconjugated

bilirubin with levels of 25 to 30 mg/dl during the 2nd to 3rd week. Usually it reaches 4 weeks of age and decreases by 10 weeks. Management of jaundice due to breast milk means there is no need to stop breastfeeding unless the bilirubin is in the range that requires exchange transfusion, even if intensive phototherapy has been received. So this type of delivery can have a risk of causing neonatal jaundice, however there are still many factors that trigger an increase in bilirubin in neonates including hemolytic disorders (Tazami et al, 2019).

This is in line with Widiawati's (2020) research using quantitative research with a case-control approach, the results showed that there was a relationship between birth weight and the incidence of jaundice in newborn babies with p -value = 0.000. Neonatal jaundice is a biological phenomenon that arises due to high production and low excretion of bilirubin during the transition period in neonates. In neonates, bilirubin production is 2 to 3 times higher than in normal adults. This can happen because the number of erythrocytes in neonates is greater and their lifespan is shorter. Babies are very susceptible to jaundice, this is due to the immaturity of the baby's liver function to process erythrocytes (red blood cells). More than 85% of full-term babies who are returned to care in the first week of life are caused by this condition (Musbayarun, 2020).

Elevated bilirubin levels are found in several situations. An event that often occurs when the increase in the bilirubin load on liver cells is too excessive. In babies with low birth weight, the baby's body organs do not yet function like mature babies, therefore the baby experiences several abnormalities, including an immature liver. Liver immaturity makes it easier for neonatal jaundice to occur, resulting in incomplete liver function, namely indirect bilirubin. direct bilirubin is disturbed and the level of albumin in the blood which plays a role in transporting bilirubin from tissues to liver cells is reduced. Jaundice can occur due to increased bilirubin production, impaired bilirubin metabolism, or due to impaired bilirubin excretion. This can be caused by various risk factors such as mental factors including race, breast milk and pregnancy complications, neonatal factors including genetic factors, nutritional factors, prematurity and LBW. Mutianingsih, 2019). Efforts that can be made are by providing health education to the baby's mother regarding the importance of consuming nutritious food and diligently carrying out pregnancy checks to obtain information from health workers about the importance of a normal baby's birth weight in order to prevent neonatal jaundice.

Based on the results of the chi-square test, the result was $p = 0.009$ ($p < \alpha$) $\alpha = 0.05$, meaning that this shows that postpartum mothers have a significant relationship with the incidence of newborn jaundice. This is in line with Khadijah's research (2017) using descriptive research methods which states that there is a significant relationship between postpartum mothers and jaundice in newborn babies at RSUD dr. H. Moch. Ansari Saleh Banjarmasin with p -value = 0.000.

Health education is needed by mothers/parents to increase knowledge, encourage motivation, skills and self-confidence needed to prevent and treat the occurrence of neonatal jaundice in newborn babies by providing breast milk and early detection through visual examination. Health education about neonatal jaundice and how to detect jaundice will influence mothers' perceptions, beliefs and attitudes so that it will create an intention to carry out early detection to prevent severe neonatal jaundice in babies. Previous research results prove that early detection carried out by mothers has good accuracy in determining the degree of neonatal jaundice (Rahmy, 2019).

The health information provided can help parents to control the situation regarding the health problems they face, help parents determine what to do and create a desire to seek further information. The information that parents want comes from professional health workers through print (leaflets) and audio-visual (video) media. The health education that mothers receive after giving birth is not yet structured (scheduled and gradual) and the communication process only occurs in one direction due to the short period of care. Two-way communication is often carried out when parents are usually in informal situations to ask about the problems they are facing. The need for counseling to repeat information, especially on specific and priority problems. So that it can increase understanding, build perceptions and cause changes in behavior in mothers to continue to provide full breast milk (Widagdo, 2018).

CONCLUSION

Based on the results of research on the relationship between early breastfeeding and the incidence of newborn jaundice, the following conclusions were obtained there is a relationship between the characteristics of postpartum mothers who start giving their first breast milk (colostrum) and the incidence of jaundice. There is a relationship between the characteristics of newborns who experience physiological jaundice. There is a relationship between subscription methods

SUGGESTION

It is hoped that health workers will provide educational services to mothers about the importance of exclusive breastfeeding to prevent jaundice in newborn babies.

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