NEWBORN MIDWIFERY CARE FOR MRS. "E" INFANT WITH MODERATE ASPHYXIA AT BUNGI HEALTH CENTER

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A B S T R A C T

Background: *Neonatorum asphyxia is a condition in which the baby is unable to breathe spontaneously and regularly, leading to a decrease in oxygen levels (O2) and an increase in carbon dioxide (CO2), potentially resulting in a negative impact on later life.* ***The purpose*** *of this study is to manage moderate asphyxia, which is characterized by babies who cry strongly, do not have hypothermia, and have vital signs within normal limits at the Bungi Health Center, Baubau City.* ***The subject*** *of this study was a newborn, Mrs. "E", who had moderate asphyxia.* ***The method*** *used in this study is a case study approach with Varney's seven-step management and SOAP documentation.* ***The results*** *obtained showed that the subjective data in Mrs. "E" babies after treatment of asphyxia were showing improvement, characterized by strong crying babies and active body movements. Objective data showed that vital signs were within normal limits and the baby was already breastfed. The analysis carried out indicated improvement in Mrs. "E's" baby who had moderate asphyxia problems. The management carried out includes warming, position adjustment, mucus suction, drying, and tactile stimulation, followed by an assessment known as HAIKAP.* ***In conclusion****, after carrying out midwifery care, moderate asphyxia has been resolved through tactile stimulation, showing success in the treatment provided. This research was conducted on February 19, 2024. The advice for practice places is to maintain services in accordance with the Standard Operating Procedures (SOP), especially in obstetric services for newborns with moderate asphyxia*

INTRODUCTION

Neonatal asphyxia is a condition in which the baby is unable to breathe spontaneously and regularly after birth, caused by a decrease in oxygen levels in the cells and tissues of the fetus while in the uterus. This causes shortness of breath which can worsen oxygen intake and increase carbon dioxide levels in the body. As a result, the oxygen supply to the brain and body tissues becomes insufficient, which can ultimately interfere with the baby's breathing patterns. This ineffectiveness of breathing patterns is one of the main problems that often occur in babies with asphyxia, and if not treated immediately, this condition can lead to permanent brain damage or even death (PUTRI RIZKIYAH SALAM, 2021)

Based on information compiled by the World Health Organization (WHO), every year there are about 3.6 million cases of neonatal asphyxia, which is equivalent to 3% of the total 120 million baby births worldwide. Of these, around 1 million babies lost their lives due to this condition (Sa'danoer, 2022). In Indonesia, the death rate due to neonatal asphyxia reaches 29.9%, with the majority of deaths occurring on the first day after birth. About 75.6% of these deaths occur after the baby passes the first week of life (Ministry of Health 2020). According to Basic Health Research data (RisKesDas 2017), respiratory distress is the leading cause of neonatal mortality (0-28 days of age), accounting for 37% of total neonatal deaths, of which 19% are caused by asphyxia. Of the 5 million newborn deaths that occur annually in Indonesia, in 2018, there were 462 cases, with 70 of them caused by asphyxia (RisKesDas 2018). In the 2020 Indonesia Health Profile report, it was stated that in Southeast Sulawesi, of the 28,158 deaths of children under five, as many as 72.0% (20,266 deaths) occurred in the neonatal period. Of the total deaths, 72.0% of infant deaths occurred at the age of 0-28 days, and the leading cause of neonatal death was asphyxia (Ministry of Health of the Republic of Indonesia, 2024).

Initial data of complications has been carried out on Mrs. "E" with the age of 27 years, G2 P1 A0, gestational age 41 weeks and 5 days, the baby was born full-term with a weight of 3400 grams, during childbirth there was a complication in Mrs. "E" which occurred in phase II which lasted for 2 hours with the condition that the mother was not strong enough to move and felt tightness and chest

pain, The mother also has a history of tuberculosis and hypoxia, so that it causes the baby to experience moderate asphyxia because the oxygen supply in the mother's blood is not enough objective data that shows the baby has moderate asphyxia which is characterized by the skin of the lower extremities appearing bluish, the muscles in the chest seem to contract to help breathing, do not cry immediately, the heart frequency decreases, with an APGAR score of 5/8 which is an indicator of moderate asphyxia in the working area of the Puskesmas Bungi Baubau City.

Various safe and effective measures in preventing and treating the main causes of newborn death include quality antenatal services, good childbirth care, and neonatal services provided by health professionals. To reduce the mortality rate of newborns due to asphyxia, it is important that childbirth is carried out by health workers who are trained in the management of asphyxia in babies. These skills and knowledge are crucial and must be applied to every delivery process. Therefore, comprehensive and appropriate neonatal resuscitation training is essential for healthcare workers caring for newborns. Neonatorum asphyxia can reduce the supply of oxygen (O2) and cause difficulties in the excretion of carbon dioxide (CO2), which can interfere with the functioning of the body's cells. The impact of asphyxia varies depending on its severity and duration, whether the condition is reversible or permanent, which can ultimately result in complications, sequelae, or even death (AH. Markum, 2021). Based on an initial survey at the Bungi Health Center in Baubau City, in 2021 there were 15 babies born with asphyxia, 10 cases in 2022, and from 2023 to 2024 there were 5 babies with asphyxia, with 1 moderate case in early 2024. Asphyxia in newborns is the third leading cause of infant mortality in the world in the early phases of life (Mutiara, 2022). Neonatal mortality due to neonatal asphyxia reaches 8 to 35% in developed countries, and 31 to 56.5% in developing countries, which is influenced by the condition of the mother, baby, and placental factors (Notoatmodjo & Rahmawati, 2021).

METHODOLOGY

In writing this final project report, the author applies the case study approach method. This approach is used as a step in midwifery management, which is a systematic and organized problem-solving process. Midwifery management refers to the use of scientific theories, research findings, and professional skills to compile a logical series of actions, so that the decisions taken are always focused on the interests of the client. Case studies as a research method pay deep attention to one specific object, by studying it in detail and intensively to gain a comprehensive understanding. In documenting the results of the research, the author uses the SOAP method, which stands for Subjective, Objective, Assessment, and Plan. This SOAP approach helps analyze a case or event in a systematic way and in accordance with the theory applicable in real situations.

Subjective data describes information obtained through anamnesis on Mrs. E or through interviews with clients. Documentation of this data includes complaints, disease history, and the client's subjective perception of his or her health condition. Meanwhile, Objective Data is the result of a physical examination and various supporting tests that are used to assess the client's condition in a more concrete way. This data is the main focus in supporting the decision-making process in providing care. The analysis is carried out by identifying and connecting subjective data as well as objective data to get a clearer picture of the client's condition. Management, in the end, describes an action plan that has been designed based on the results of the analysis, both for actions that are being carried out and those that will be implemented in the future.

RESULTS & DISCUSSION

Subjective Data

On February 19, 2024, at 20.35 WITA, Mrs. "E" gave birth to a baby who did not cry immediately. The mother's age at the time of childbirth is 27 years old with a pregnancy status of G2, P1, A0, and HPHT on May 3, 2023. At that time, the gestational age reached 41 weeks and 5 days. The baby was born full-term with a body weight of 3400 grams. The labor process experienced complications in stage II, which lasted for 2 hours. Mrs. "E" had difficulty straining, felt shortness of breath, and had pain in her chest. In addition, the mother also had a history of tuberculosis and hypoxia. On February 20, 2024, Mrs. "E" said that her baby is strong in breastfeeding and often cries. Then, on February 21, 2024, the mother again reported that her baby was strong in breastfeeding, with a male gender, a weight of 3400 grams, a body length of 52 cm, and had defecated (BAB) and urinated (BAK). The mother also said that her baby cried a lot and showed signs of a healthy baby.

Objective Data

On February 19, 2024, at 20.35 WITA, baby Mrs. "E" was born with an alarming condition, characterized by the absence of crying at birth, blue extremities, panting breathing, decreased heart rate, and weak muscle tone. The APGAR score obtained is 5/8. General examination showed that the baby's body temperature reached 36.5°C, respiratory rate 26 times per minute, and heart rate 86 times per minute, with a low level of activity. APGAR's score, especially in the first minute, was recorded at 5. The delivery process takes place normally in stage II for 2 hours, and the baby is born full-term with moderate general conditions, clear amniotic fluids, and the umbilical cord is still wet. On February 20, 2024, the baby's general condition showed a significant improvement. The pulse was recorded at 120 times per minute, the respiratory rate increased to 60 times per minute, and the body temperature rose to 38.5°C. The general examination recorded the baby's weight of 3400 grams, body length 52 cm, with the umbilical cord still wet, and a good sucking reflex. Furthermore, on February 21, 2024, the baby's general condition remained good with a pulse of 124 times per minute, a respiratory rate of 42 times per minute, and a body temperature of 37.5°C. The baby's weight and body length remained the same, namely 3400 grams and 52 cm, and the umbilical cord was still in a wet condition.

Analysis

Full-term baby, According to gestational period, Moderate asphyxia

Management

After the baby is born, the first step is to dry his body by replacing a wet blanket with a dry and clean blanket. Next, the baby is swaddled and placed in a warm, dry environment to keep his body temperature stable. Then, the baby's position is adjusted with a slight extension on the head so that the airway opens optimally. After that, a mouth and nose are cleaned to ensure there are no blockages. Tactile stimulation is also given to help trigger a respiratory response. Assessment of the baby's condition is carried out through the Apgar score to assess aspects such as breathing, heart rate, skin color, and muscle tone. The infant was then given an intramuscular injection of 0.1 ml of vitamin K, as well as an injection of Cefotaxim at a dose of 100 mg to prevent infection. Cord treatment is done sterile to prevent infection. In babies who previously had asphyxia, after their condition is stable, adequate fluid intake is given as needed, starting 2 hours after the asphyxia is resolved. Feeding is done every 2 hours and the intake volume is gradually increased every day based on the baby's weight.

Table 1. Observing vital signs

It	TTV Inspection	Breathing	Pulse	Temperature
1	21.00	60 x/min	120 x/min	35.6 °C
2	21.30	50 x/min	110 x/min	35.6 °C
3	23.00	55 x/min	115 x/min	36.8 °C
4	23.30	55 x/min	120 x/min	36.5 °C

Source : Primary Data, 2024

DISCUSSION

Subjective Data

Baby Mrs. "E" was born on February 19, 2024, exactly at 20.35 WITA. Even though the baby was born in a full-term condition, the baby did not cry immediately. The baby's mother, 27 years old, is her second pregnancy with the status of G2 P1 A0. The first day of the mother's last menstrual period (HPHT) was recorded on May 3, 2023, so currently the gestational age has reached 41 weeks and 5 days. The baby was born weighing 3,400 grams; However, during the delivery process, Mrs. "E" experienced several obstacles. In the second phase of labor which lasts for 2 hours, the mother cannot apply enough pressure when moving and feels tightness and pain in the chest. The mother also has a history of tuberculosis and hypoxia, which can affect the baby's health. On February 20, 2024, Mrs. "E" reported that her baby appeared healthy and breastfeeding well. The mother noted that her baby often cried. Furthermore, on February 21, 2024, the mother stated that her baby again looked strong while breastfeeding, with a male gender, weighing 3,400 grams, and 52 cm long. The baby has successfully defecated (BAB) and urinated (BAK). The condition of asphyxia experienced by babies can be affected by various factors, including the condition of the mother, fetus, and placenta. Hypoxia as well as tissue

ischemia that occur can cause functional and biochemical changes in the fetus. These factors contribute to the risk of developing asphyxia at birth (Sembiring 2023).

In handling babies with asphyxia, such as the one experienced by Mrs. "E's baby," the first step that must be taken is to provide appropriate and effective care. First of all, keeping the baby warm is a very important thing, which can be done by covering the baby's body with a blanket or other warm material. Furthermore, the position of the baby's head needs to be set in an extension position to ensure that the airways are open, so that air can enter more smoothly. The mucus suction process is carried out using a delee, starting by sucking the mucus from the baby's mouth first, then continuing by sucking the mucus from the nose. For this, the tip of the delee is inserted about 5 cm into the nose, beyond the lobe, to ensure optimal cleaning. After that, the rest of the body should be gently dried and apply a little pressure to keep the baby comfortable. Tactile stimuli such as touching or patting the soles of the baby's feet, as well as rubbing his back, chest, and abdomen, are also important to stimulate the baby's breathing reflexes. After that, the baby's position needs to be rearranged in a slightly extended position to support his breathing. The treatment of newborns with asphyxia must always be based on the principles of evidence-based care, which include providing a good airway, stimulating respiratory reflexes, and maintaining the baby's body temperature to remain stable. This is essential to prevent further complications and ensure the baby gets the necessary care in a timely manner (Asa Bayuana et al., 2022).

Objective Data

Baby Mrs. "E" was born on February 19, 2024, at 20.35 WITA, in a state of concern. At birth, babies do not cry immediately, with blue extremities, gasping breathing, decreased heart rate, and weak muscle tone. Based on the initial assessment using the APGAR scale, the baby got a score of 5 at the first minute and 8 at the fifth minute. The baby's general examination showed that his body temperature was 36.5°C, with a respiratory rate of 26 times per minute and a heart rate of 86 times per minute. The baby's activity level also looks weak. However, this baby was born through the Phase II delivery process which took place normally for 2 hours and was classified as full-term. The condition is generally moderate, with clear colored amniotic fluid and a wet umbilical cord. On February 20, 2024, the baby's general condition showed a significant improvement. The pulse was recorded at 120 times per minute, the respiratory rate increased to 60 times per minute, and the body temperature reached 38.5°C. The results of the examination showed that the baby's weight was 3400 grams with a body length of 52 cm, as well as a wet umbilical cord and a good sucking reflex. Furthermore, on February 21, 2024, the baby's general condition remains in good condition. The pulse was measured 124 times per minute, the respiratory rate was reduced to 42 times per minute, and the body temperature was stable at 37.5°C. The results of the general examination again showed that the baby's weight remained at 3400 grams and the length of the body was 52 cm, with the umbilical cord still wet. Overall, the baby's health showed signs of stability and not worrying, indicating an improvement in the condition.

The process of sucking mucus in babies needs to be done very carefully, starting with the use of the DeLee tool. In this stage, the main attention should be paid to the baby's reaction, especially for babies with the initials Mrs. "E". During suction, mucus can be seen in the mouth area with a suction technique that does not exceed 5 cm in depth, followed by suction in the nasal area with a depth of less than 3 cm. Furthermore, it is very important to dry the baby "Mrs. "E" while providing tactile stimulation to the face, head, and back area. The techniques used include gentle rubbing and squeezing with the appropriate pressure. After that, the baby's entire body needs to be stimulated in the same way, including rubbing the back, abdomen, and chest. In addition, special attention is paid to the gentle touch of the baby's feet, which causes the baby Mrs. "E" to react, especially to the legs that initially appear limp but then begin to move in the upper and lower extremities. After these steps, reposition the baby and replace the wet cloth that wraps him in a clean, dry, warm towel. It is important to cover the baby with a cloth while leaving the face and chest area open so that chest movements can be monitored. Baby Mrs. "E" should be in the half-extension position. Furthermore, it is necessary to assess the breathing effort and heart rate, where the baby Mrs. "E" shows a respiratory rate of 40 times per minute and a heart rate of 124 times per minute. After five minutes, Mrs. "E's" baby's Apgar score was recorded at 8. To prevent loss of body temperature, the baby should be constantly monitored and placed under the baby heater. Cooperation with the medical team is crucial in this process (Zhao et al 2023). With proper management of HAIKAP, baby Mrs. "E" does not need Positive Pressure Ventilation (VTP) urgently.

Analysis

Based on the analysis carried out on the subjective and objective data that has been collected, it can be concluded that this baby was born at full term in accordance with the gestational period, and experienced a moderate level of asphyxia. The treatment needed to treat asphyxia in newborns includes several important steps. First, it is very important to keep the baby's body temperature warm to prevent hypothermia. Furthermore, the baby must be placed in the right position to ensure that his airway is not obstructed. The mucus suction procedure must also be done correctly to remove secretions that may be blocking the baby's breathing. In addition, giving tactile stimulation can help stimulate the baby to breathe. If necessary, artificial respiration should be performed immediately to ensure adequate oxygenation. These efforts are very important to prevent further asphyxia, provide appropriate and adequate help when asphyxia occurs, and avoid hypothermia in newborns (Diana Sulis, Erfiani Mail, 2021).

Management

After birth, the first step that needs to be done is to dry the baby's body by replacing the wet blanket with a dry and clean blanket. Then, the baby is swaddled neatly and placed in a warm, dry place. It is important to adjust the position of the baby with the head slightly in a state of extension, as well as clean the mouth to nose area. Next, perform tactile stimulation to activate the baby's response. Assessment of the baby's condition is carried out using Apgar score. In addition, 0.1 ml of Vitamin K injection was given intramuscularly and Cefotaxime as much as 100 mg also through the same route. The umbilical cord must be properly cared for, and it is important to ensure adequate intake as per the baby's needs two hours after the asphyxia resolves. Feeding is done every two hours and the amount can increase daily based on cc per kilogram of body weight.

Based on research conducted by (Asa Bayuana et al., 2022) There are several important steps in handling the care of babies with moderate asphyxia. First of all, keeping your baby's body warm is very important to ensure that his body temperature remains stable. The placement of the baby's head should be done in an extension position to ensure optimal airway opening. This procedure involves sucking mucus using a deelee device, by inserting the device into the baby's mouth and nose as far as 5 cm, while paying extra attention not to pass through the nostrils. In addition, the drying process on other parts of the body needs to be done gently and apply a little pressure. Tactile stimuli, such as touching or patting the soles of the baby's feet and rubbing the baby's back, chest, and abdomen, are also highly recommended. After performing these steps, the baby's position needs to be adjusted back to the slightly extended position to support better breathing. The management of newborns with asphyxia should follow evidence-based practices, which include efforts to open the airway, stimulate respiratory reflexes, and maintain the baby's body temperature. This procedure is applied by midwives on duty at the Bungi Health Center in Baubau City using the HAIKAP technique, which is the first step in the resuscitation process. In this practice, babies with the initials Mrs. "E" are placed in a supine position under the infant warmer, still covered with a blanket to keep their bodies warm. Next, the position of the baby's neck and head is set in half extension to open the airway. To ensure that the extension position remains stable, the baby's shoulders are stretched with folds of cloth, so this step is crucial in ensuring effective breathing in the baby.

The handling of moderate asphyxia is in line with the procedures implemented at BPM Suratmi, Batam City, as explained by (Asa Bayuana et al., 2022). The implementation of measures includes the first steps of resuscitation, prevention of heat loss, and care for newborns. Research by (Wati 2022) regarding the obstetric care of newborns at Mitra Sejati Hospital in 2020 also revealed the same thing. The study applies an approach known as "HAIKAP" (Warm, Adjust position, Suck mucus, Dry, Reposition, Assessment) in the treatment of asphyxia. The results of the evaluation of the care given to Mrs. "E" baby with asphyxia showed that there were no problems or obstacles, thanks to quick and effective treatment in accordance with the established procedures. After initial treatment, continue with care for normal newborns, with an emphasis on preventing heat loss. Newborns with asphyxia often experience problems such as hypothermia, risk of infection, and nutritional problems. Therefore, adequate management is essential, including the use of spotlights or baby heaters, infection prevention, and breastfeeding. Research by (Minarti, 2015) showed that breastfeeding was exclusively more successful in mothers who had supportive husbands than those who did not. In addition, research by (Ode & Mutia, 2023) shows that most breastfeeding mothers receive support from their husbands in the form of psychological encouragement, including motivation, attention, love, and acceptance. This emphasizes the importance of husband support in the exclusive breastfeeding process.

CONCLUSION

Based on an assessment that includes an anamnesis, a physical examination, a established diagnosis, and a plan of action tailored to the needs, as well as after considering the conformity between the theory and the facts that have been presented, the author can conclude that:

Based on the results of the anamnesis, subjective information was obtained about the patient, namely Baby Mrs. "E," who was born on February 19, 2024, at 20.35 WITA. This baby was born in a condition of not immediately crying. The baby's mother is 27 years old with a history of obstetrics G2 P1 A0, and HPHT on May 3, 2023. Currently, the mother's gestational age reaches 41 weeks and 5 days, with the baby born at full term and weighs 3400 grams. During childbirth, there was a complication in Mrs. "E" in the second period which lasted for 2 hours, where the mother had difficulty in moving, feeling tight, and pain in the chest. The mother also had a history of tuberculosis and hypoxia. On February 20, 2024, Mrs. "E" reported that her baby seemed strong while breastfeeding and that the baby also showed good crying ability. On February 21, 2024, the mother continued to report that her baby was able to breastfeed well. The baby is male, weighs 3400 grams, and is 52 cm long. In addition, the baby has defecated (BAB) and urinate (BAK) normally, and the mother noted that the baby seemed to be crying strongly.

Based on the results of the objective examination, Mrs. E's baby was born on February 19, 2024 at 20.35 WITA with several conditions that require attention. Babies do not cry immediately after birth, with bluish extremities, gasping breathing, decreased heart frequency, and weak muscle tone. APGAR's score was recorded at 5 in the first minute and increased to 8 in the fifth minute. The general examination showed that the baby's body temperature was 36.5°C, respiratory rate 26 times per minute, heart rate 86 times per minute, and low activity. The baby is born through normal delivery in phase II which lasts for two hours, full term, with moderate general conditions. The amniotic fluid is clear, and the umbilical cord is still wet. As of February 20, 2024, the baby's general condition showed a significant improvement, with a pulse of 120 beats per minute, respiration of 60 beats per minute, and a temperature of 38.5°C. The examination also recorded a body weight of 3400 grams, a body length of 52 cm, and a good sucking reflex. On February 21, 2024, the baby remains in a stable condition, with a pulse of 124 beats per minute, respiration of 42 times per minute, and a temperature of 37.5°C, as well as a fixed weight and body length at 3400 grams and 52 cm, while the umbilical cord is still wet. Based on the analysis of subjective and objective data, this baby was declared to be full-term according to gestational age and experienced a moderate degree of asphyxia.

The management carried out to handle this baby follows the Standard Operational Procedures of the Health Center, with the aim of assessing the condition of the baby with an APGAR score of 5/8. Treatment measures include clearing the airways, keeping the baby's body warm, and providing tactile stimulation to improve the baby's stimulation and response.

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REFERENCES

Asa Bayuana, Sri Rizki Ayu Nova Dinata, Helfia Gustin, Rohaida Rohaida, Rosnaini Rosnaini, Vebby Ayu Saphira, Suratmi Suratmi, Nurlisyah Wati Riski, & Putri Esmariantika. (2022). *Manajemen Asuhan Kebidanan Kompleks Pada Bayi Baru Lahir Dengan Asfiksia Ringan Di Bpm Suratmi Kota Batam Tahun 2022.* Jurnal Ilmu Kedokteran Dan Kesehatan Indonesia, 2(2), 36–41. https://doi.org/10.55606/jikki.v2i2.364

Diana Sulis, Erfiani Mail, 2019. (2021). Manajemen Asuhan Kebidanan Pada Bayi Baru Lahir Dengan Asfiksia (Literatur Review). *Jurnal Midwifery*, *3*(1), 32–41. https://doi.org/10.24252/jmw.v3i1.21028

Kemenkes RI, 2021. (2024). EVIDANCE MIDWIFERY JOURNAL Hubungan Prematur dengan Kejadian Asfiksia Neonatorum di Klinik Fatiha The Relationship between Prematurity and the Incident of Neonatal Asphyxia at the Fatiha Clinic. *Emj*, *3*(2), 2963–413. https://journal.universitaspahlawan.ac.id/

RisKesDas 2018. (2022). Faktor risiko yang berhubungan dengan kejadian asfiksia pada neonatus di RSIA Dedari Kupang, Nusa Tenggara Timur, Indonesia. *Intisari Sains Medis*, *13*(2), 511–515. https://doi.org/10.15562/ism.v13i2.1410

RisKesDas 2017. (2016). *Bayi baru lahir asfiksia*. *19*(5), 1–23.

Kemenkes 2020. (1988). Health Statistics. In *Science as Culture* (Vol. 1, Issue 4). https://doi.org/10.1080/09505438809526230

Sa`danoer, 2020. (2022). Faktor Risiko Asfiksia Neonatorum. *Jurnal Ilmu Kebidanan*, *12*(2), 55–63. https://doi.org/10.54444/jik.v12i2.111

AH.Markum, 2019. (2021). Studi Kasus: Asuhan Keperawatan Pada Pasien Dengan Asfiksia Neonatorum. *Jurnal Ilmiah Keperawatan Imelda*, *7*(2), 116–123. https://doi.org/10.52943/jikeperawatan.v7i2.633

Mutiara, 2021. (2022). Asfiksia Sedang dan Hiperbilirubinemia Pada Bayi Berat Lahir Cukup. *Continuing Medical Education*, 658–669.

Ode, W., & Mutia, N. (2023). Studi Keberhasilan Ibu Pekerja Dalam Memberikan Asi Eksklusif. *Jurnal Ilmu Kebidanan*, *13*(1), 7–12. https://doi.org/10.54444/jik.v13i1.113

Sembiring 2020. (2023). Manajemen Asuhan Kebidanan Bayi Baru Lahir Pada Bayi Ny "R" dengan Asfiksia Ringan di BLUD UPT Puskesmas Ulaweng. *Jurnal Midwifery*, *5*(2), 97–105. https://doi.org/10.24252/jmw.v5i2.40146

Minarti, 2015. (2015). Dukungan Suami Dengan Keberhasilan Isteri Untuk Menyusui (*Husband Support in Wife Breastfeeding Success*). *Jurnal Ners Lentera*, *3*(1), 10–20.

Zhao dkk 2021. (2023). Studi Kasus: Penatalaksanaan Asfiksia Sedang Pada Bayi Baru Lahir Dengan Teknik Haikap Di Rsu Al-Fatah Ambon. *Jurnal Kebidanan*, *3*(1), 75–83. https://doi.org/10.32695/jbd.v3i1.463

Wati 2020. (2022). Asuhan Kebidanan Bayi Baru Lahir By. S Dengan Asfiksia Sedang Di Rumah Sakit Mitra Sejati Tahun 2020. *Jurnal Rumpun Ilmu Kesehatan*, *2*(2), 161–171. https://doi.org/10.55606/jrik.v2i2.1434

Proverawati: 2018. (2020). asuhan kebidanan bayi baru lahir dengan asfiksia neonatorum. *Jurnal Ilmu Pendidikan*, *7*(2), 809–820.

Sukmawati, Harni, Purnama, J., & Hamudi. (2021). Hubungan Usia dan Riwayat Persalinan dengan Kejadian Asfiksia Neonatorum. *Wikipedia*, *7*, 6.

Sondakh, J. (2019). Asfiksia Neonatrum. *In Asuhan Keperawatan Pada Bayi Yang Mengalami Asfiksia Neonatorum*.