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**Case Study**

# Nursing Care of Infants with Epilepsy: A Case Study

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ABSTRACT

***Background:*** Epilepsy is marked by impaired brain function and recurrent seizures due to excessive electrical discharge. It is reversible. Epilepsy can lead to growth and development disorders, including impaired intelligence, language comprehension, and cognitive function. Additionally, it can cause complex disorders that result in behavioural and learning difficulties, physical and mental disabilities, and even death. This study focuses on investigating infant nursing care for patients with epilepsy.
***Methods:*** This research uses a case study design. Data collection from assessment to an evaluation in Arafah Room 1 of the Hospital in Banda Aceh on December 2022. Epileptic patients were observed or treated for 4 days. Data collection techniques were carried out through interviews, observation, and documentation. Data analysis was carried out using narrative analysis.
***Results:*** Baby A with a chief complaint of recurrent seizures. Nursing diagnoses in the case of Baby A were ineffective breathing pattern, risk of ineffective tissue perfusion, risk of injury, lack of knowledge, and anxiety. The interventions provided are based on the Indonesian Nursing Intervention Standards, which consist of observational, therapeutic, and collaborative interventions.
***Conclusion:*** Nursing problems in Infant A after 4 days of treatment show problems of ineffective breathing pattern, and the lack of knowledge about epilepsy was solved. The risk of ineffective cerebral tissue perfusion, the risk of injury, and anxiety were partially solved.

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## Introduction

One of the most common health problems among children in Indonesia is epilepsy. Epilepsy is several symptoms of impaired brain function, characterized by recurrent seizures due to excessive discharge of the brain's electrical discharges and is reversible. Epilepsy most often occurs in children aged 6 months to 5 years, not caused by intracranial infection and without a history of previous triggers (Paul & Bangga, 2019).

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World Health Organization (WHO, 2019) mentions that around 1% of the world's population or around 50 million cases of epilepsy worldwide, with 80% of them coming from developing countries, the overall incidence of epilepsy in developed countries ranges from 40-70 cases per 100,000 people per year. In developing countries, the incidence is higher, ranging from 100-190 cases per 100,000 people per year (Paul & Bangga, 2019).

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The number of epilepsy cases in Indonesia is relatively high. The average prevalence of active epilepsy is 8.2 per 1000 population, while the incidence rate reaches 50 per 100,000 population. If the population of Indonesia is around 230 million people, it is estimated that there are still 1.8 million people with epilepsy who need treatment (WHO, 2012). The Indonesian Neurologist Association group conducted a study on the number of people living with epilepsy in 18 hospitals in 15 cities in 2013 for 6 months. There were 2,288 patients, with 487 new and 1,801 old cases (Perdossi, 2016).

Some of the most common causes of epilepsy are disorders during pregnancy, abnormalities at birth, head injuries, brain tumours, blockage of brain blood vessels, inflammation or infection, and genetic diseases. Epilepsy in children can cause impaired intelligence, language comprehension, and cognitive function (Smeltzer & Bare, 2013).

In addition, very complex brain disorders can cause growth and development disorders, behavioural disorders, learning disorders, physical disabilities, and mental disabilities to cause death (Murtiani & Purnamawati, 2018).

Children with epilepsy are prone to have a decreased risk of self-concept and behaviour compared to their peers, and this causes social rejection from their peers. Preventing the frequency of seizures can reduce the impact of epilepsy (Epilepsy Association, 2019).

Based on a preliminary study of case data on infants in the Children's Room Arafah 1 Banda Aceh from 2 December - 6 December 2022 with epilepsy. The purpose of writing this case study is to see how "Nursing Care for Infants" is implemented. A with Epilepsy ".

## Method

This study uses a case study design. A case study is an in-depth qualitative research on individuals, groups, institutions, and others within a certain period through questions and answers, observation, and examination of various documents related to the subject under study (Sugiyono, 2017). The data collection process for this study began with the assessment and evaluation of nursing care in Arafah Room 1 of the Hospital in Banda Aceh in December 2022. The study's author personally observed and provided care for the patient over four days until the patient was discharged.

To gather comprehensive data, various techniques were employed, including interviews with relevant individuals involved in the patient's care, direct observation of the patient's condition and response to nursing interventions, and documentation of the entire care process. The collected data was analyzed using a narrative approach, allowing for a detailed exploration and understanding of the nursing care provided.

Throughout the research process, the author adhered to ethical principles and ensured the confidentiality of the patient's personal and medical information. Patient privacy and data protection were given utmost importance, with strict measures in place to safeguard sensitive

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information. The research study obtained ethical clearance, indicating that it has been reviewed and approved by the appropriate ethics committee or institutional review board. This clearance ensures that the study is conducted ethically and with due regard for the rights and welfare of the patient involved.

## Results

Baby A is a female with a chronological age of 7 months. The patient was admitted to the hospital with complaints of seizures with a frequency of 2 times in 1 day. Before being taken to the hospital, the distance between seizures was 5 hours with a duration of ± 5 minutes, and the seizures were not preceded by fever. Seizures with eyes rolling upwards, legs and arms stiff. History of seizures on October 1 and in early November 1. Time was taken to the midwife, and once given seizure medication through the rectum given by the midwife.

Based on medical history records, during pregnancy and birth, the mother of the baby routinely carries out antenatal care (ANC) examinations to the doctor with 4 ultrasounds, is the first child to be born at term, gives birth typically (vaginally) at the midwife, with a BBL of 3200 grams and no history of stay in the NICU. Furthermore, for the history of the baby's mother's past illness, she mentioned the history of her child's disease, namely fever. Having never received treatment at a hospital, this was the first time his son was treated. Baby A has never had surgery before and has never had a history of accidents or falls. The baby's mother said her baby had never received any immunizations before. Based on the family medical history, the baby's mother stated that her family had no history of chronic disease or the same symptoms as Baby A.

The results of the examination carried out by the author showed that the general condition was weak, vital signs: pulse: 118x/minute, respiration: 58x/minute, temperature: 37 °C, with body length/weight: 60 cm/6.6 Kg, circumference head: 40 cm, physical examination of other body parts found in normal circumstances.

Examination of developmental results showed that fine motor and gross motor skills were well developed and had good nutritional status. Laboratory results showed a decrease in Hb, Ht, and Erythrocytes, namely 10.0 gr/dl, 29 gr/dl, and 4.0 gr/dl. Moreover, the decrease in the value of stem and segment neutrophils is 0% and 38%. As well as an increase in the value of lymphocytes, namely 56%.

Drug therapy is given to Baby A, namely diazepam 5 mg, metamizole 75 g, and phenytoin 50 mg if seizures occur, receive IVFD D5 4:1 20 cc/hour fluid therapy as much as 500 cc/day or the equivalent of 1 kolf. Diagnosis based on Indonesian Nursing Standards is Ineffective Breathing Pattern (D.0005) associated with Neurological Disorders (PPNI, 2018), characterized by subjective data: Baby A's mother said her child seemed to have difficulty breathing/looked short of breath, especially after having a seizure. Objective Data Weak general condition, weak crying, fast and deep breathing (hyperventilation), use of accessory muscles to breathe, use of an O2 nasal cannula breathing apparatus 2 litres/minute, irregular breathing rate 58x/minute, history of seizures, dan SpO2: 96%.

The second diagnosis that emerged was the risk of ineffective cerebral perfusion (D.0017) related to the disease process (PPNI, 2018), characterized by subjective data: The mother of baby A said that her child was taken to the hospital with complaints of 2 seizures with a duration of 5 minutes. Objective data:

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Seizures reappeared during the treatment period with a frequency of 1 time with a duration of 3 minutes, history of seizures, less active movements, using a nasal cannula 02 2 litres/minute. A third diagnosis that emerged was a risk of injury (D.0136) related to increased muscle activity (PPNI, 2018), characterized by subjective data: Baby A's mother said her child had sudden seizures. Objective data: history of previous seizures; seizures occur with a frequency of 1-2 times a day, lasting 3-5 minutes.

The fourth diagnosis that appears is a knowledge deficit about the disease (D.0111) associated with a lack of exposure to information (PPNI, 2018), characterized by subjective data: Baby A's mother said she did not understand about seizures and did not know what to do when their child has a seizure. Objective data: the mother of baby A cannot explain the illness her child is suffering from, does not know the management if her child has seizures, and seems confused by her child's illness. The fifth diagnosis raised is Anxiety (D.0080) related to the threat of death (PPNI, 2018), characterized by subjective data: Baby A's mother said she was worried about her child's condition and had difficulty sleeping because she was thinking about her child. Objective data: the baby's mother looks crying, anxious, and confused, and her face looks pale.

After 4 days of treatment, it was found that the problem of ineffective breathing patterns improved after the administration of an oxygen therapy nasal cannula O2 2 litres/minute, setting the side position during seizures, and advising not to put objects into the child's mouth during seizures which can close the airway, while the results showed respiratory rate within normal limits (34 x/minute), regular respiratory rhythm, no dyspnea, not using respiratory muscles, improved breath depth, improved oxygen saturation (99%), without using a respirator, normal oxygen saturation (99% ), temperature 36.6 °C, and crying loudly.

Then the problem of the risk of ineffective cerebral perfusion shows improvement with the results being monitored free of seizures 2x24 hours, active movement, not using a respirator, with vital signs pulse: 110 x/minute, breathing: 36x/minute, temperature: 36 °C. The patient received 5 mg of diazepam soup therapy.

Then the problem of the risk of injury shows improvement with the result that there are no seizure injuries during the treatment process by teaching the management of seizures in infants, which must be carried out by the family as evidenced by the mother of Baby A and the mother of the family being able to do good management when a child has a seizure such as raising the bed fence, do not wear tight clothes, keep sharp objects away, do not hold back the baby's movements when the baby has a seizure, and always be near the babies. It was observed that there were no seizures within 2x24 hours, and there were no physical injuries during the seizures.

Then the problem of knowledge deficit shows improvement with the result that the mother of baby A understands her child's disease by being able to explain again about the disease her child is suffering from and can mention/practice again about the management of the first seizure that must be done when her child has a seizure. Then the problem of knowledge deficit showed improvement with the results obtained by Baby A's mother saying she felt calmer and less anxious after receiving support from the family and relaxation therapy that had been taught; Baby A's mother did not experience sleep disturbances, and Baby A's mother seemed calmer.

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## Discussion

1. **Ineffective breathing pattern**

This breathing problem arises because prolonged or repeated seizures increase the brain's metabolism, causing the brain's need for oxygen also to increase (Judha & Rahil, 2011). Implementation related to oxygen therapy is to monitor the flow rate/fraction of oxygen from the nasal cannula and ensure that oxygen therapy given through the nasal cannula can work properly, ensure the correct position of the nasal cannula, and ensure that the pressure given is according to plan. This is in line with the study Purnajaya & Erwanto (2017), which showed that the success rate of using a nasal cannula was influenced by the accuracy of insertion/accuracy of using the nasal cannula, and there was a change in oxygen saturation for the better after using a nasal cannula. In installing an oxygen nasal cannula, it is necessary to pay attention to side effects such as irritation to the nasal mucosa; using a nasal cannula that is too long poses a risk of irritation to the nasal mucosa. Long-term use of nasal cannula therapy can cause nasal mucosa irritation (Mangku & Senapathi, 2017).

Another implementation is airway management by adjusting the head tilt and lying flat during a seizure to minimize the child choking on his spit and vomit. Choking on saliva and vomiting can cause airway obstruction, interfering with the child's breathing. Children with seizures need an adequate supply of oxygen to reach the brain and maintain oxygen levels. In everyday life, many parents do not know about seizure first aid, so parents still use ancient knowledge, such as inserting a spoon or cloth. The child has a seizure into the mouth so that the child's tongue does not bite, even though the actions taken can be dangerous and clog the child's airway (Resti et al., 2020).

Besides that, what is done is by placing the toddler in a flat place. Shibeeb & Altufaily (2019) explains that parents who place their child in a flat place can open the airway, making it easier to expel secretions and placing toddlers with seizures in places that are not mobbed to get the maximum oxygen supply. In addition to adjusting the position of the baby's body with the head straight and placing a pillow between the upper shoulder and the head so that the position of the head is extended and the airway is straight. Then during a seizure, place it on a flat place and give a head covering in the form of a thin and soft cloth.

2. **Risk of ineffective cerebral perfusion**

Prolonged seizures are usually accompanied by apnea, increased demand for oxygen and energy for excessive muscle contraction, which eventually results in hypoxemia, hypercapnia, lactic acidosis, hypotension, irregular heart rate and irregular body temperature, increasing brain metabolism (Judha & Rahil, 2011).

The implementation given is by maintaining the child's body temperature to remain normal (36,5-37,5 °C) to minimize the risk of seizures, namely by checking the child's body temperature once every three hours with the aim of monitoring or early detecting fever so that the baby does not have seizures. Then provide education to the baby's mother regarding the first treatment, namely by prohibiting the management of high fever prevention using warm compresses using a warm tepid water

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sponge technique. One of the actions that can be taken is warm compresses to lower body temperature (Rosalina, 2022).

A tepid water sponge is a method of bathing the body, which is done by wiping the whole body and applying compresses to certain parts of the body using warm water for a specific time (Potter & Perry, 2012). In addition to non-pharmacological therapy, collaborative implementation of drug delivery is also carried out, namely administering anti-epileptic drugs (OAE). This drug aims to control epileptic seizures. The OAEs used were diazepam 5 mg soup, metamizole, and phenytoin, given when the child had a seizure. In addition, prohibiting the family from administering drugs during home care if epilepsy is treated at home by administering 5 mg rectal diazepam during seizures and if the seizures do not stop within 5 minutes, it can be repeated for a second administration, if after giving diazepam the second time but the patient is still a baby seizure, then you should immediately be taken to the hospital to get seizure therapy administered via the IV route (IDAI, 2016).

**3. Risk of injury**

As for the first aid taught by the author to Mrs By, a is identifying areas of the environment that cause injury or avoiding/away from sharp objects that can harm children, exceptionally sharp objects. A child who has seizures will make uncontrolled movements. These uncontrolled movements allow the child to bump into or touch objects around the child (Resti et al., 2020).

Then another implementation is monitoring the patient's condition as often as possible, monitoring recurrent seizures, monitoring the characteristics of seizures, ensuring the patient is in a lying position in bed to minimize the risk of injury if sudden seizures occur, asking the patient's mother to accompany her near the bed to prevent risk falls, does not restrain movement during a febrile seizure, asks the family not to leave the patient alone, installs a bed support, attaches a fall risk triangle, provides a soft cloth under the head to prevent injury in the event of a seizure in the form of cloth diapers, ensures clothing looseness, especially in the neck, family advice to stay away from dangerous objects, exceptionally sharp objects, record the duration and frequency of seizures 1 x 24 hours.

Some of the things that the author does are in line with the guidelines from the Indonesian Doctors Association (IDI) regarding forms of fever seizure relief that can be done by the community simply by laying the toddler in a safe place and away from dangerous objects or sharp objects, not holding back movement while convulsions, loosen clothing, especially around the neck and tight areas, immediately call for medical help or help from other people around, accompany until the seizures stop, or until medical personnel arrive.

**4. Knowledge deficit**

The implementation that has been given is in the form of providing health education related to the disease that the mother wants to know about, namely regarding the disease, electroencephalographic examination procedures and the first treatment when a child has a seizure. Factors related to the first handler of seizures in children include the level of knowledge, experience, and inappropriate behaviour.

Based on research by Indrayati & Haryanti (2019), shows that the

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mother's ability to handle seizures in children is still lacking due to a lack of parental knowledge about managing seizures. Therefore, the authors implement the implementation by providing education regarding several seizure management that infant mothers can carry out. Improving the ability of parents to handle fever attacks in children is necessary to implement the first treatment of seizures in children.

**5. Anxiety**

The implementation that the author has given includes asking other family members to provide support to the patient's mother consistently. The support provided is in the form of paying attention by helping to care for the patient, listening to the mother's complaints, accompanying the mother during the patient's hospitalization process, the family praying for the patient's recovery, and assuring the patient's mother of other family support.

The family is a support system for sick and caring family members. The task of the family is always to provide help and support. With family support, other family members experiencing problems are not burdened with attention and do not feel alone. This includes emotional support, namely sympathetic and empathetic support. With this support, family members who have problems will communicate all their difficulties or worries so that they feel they are not alone in bearing all their problems (Frastika, 2022; Friedman, 2003).

In addition, the implementation given by the author is to reduce the anxiety of the baby's mother, namely by providing a therapeutic touch, namely listening to the mother's complaints and providing spiritual support by explaining that the disease given by God is a test from God and one must always try and pray. Then use dhikr therapy techniques to reduce anxiety. Psychotherapy of remembrance can provide a calming effect and reduce a person's anxiety level (Kamila, 2022).

## Conclusion

Based on the results of the case study, the authors conclude several things as follows: Problems with ineffective breathing patterns are resolved. Baby A is not short of breath, does not use accessory muscles for breathing, respiratory rate improves, depth of breath improves, oxygen saturation improves, and without a respirator. The problem of ineffective cerebral perfusion risk is partially resolved seizure-free 2x24 hours before leaving the hospital and not using a breathing apparatus (nasal cannula).

The problem of the risk of injury is resolved. They never had an injury during a seizure, and the family seemed able to manage the baby's seizures. The problem of knowledge deficit is resolved. Families can explain the baby's illness and how to manage it during seizures. Anxiety problems are resolved. Sleep disturbance resolved, and they seemed calmer.

## Authors Contributions

The CFA carries out tasks from data collection, data analysis, and making discussions to making manuscripts. NF participated in research design, data interpretation, and manuscript review to the author's guidelines and template. NS was involved in the review of published articles.

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## Conflicts of Interest

There is no conflict of interest.

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## References

Epilepsy Association. (2019). Be Smart about epilepsy. In *Comprehensive Resource & Training manual for School Personnel*.

Frastika, I. (2022). Tingkat Kesiapan Dengan Kecemasan Dalam Menghadapi Persalinan Pada Ibu Bersalin. *Jurnal Abdi Kesehatan Dan Kedokteran*, *1*(1 SE-Articles), 17–21. https://jakk.candle.or.id/index.php/jakk/article/view/4

Friedman. (2003). *Family nursing: Reseach, theory and practice 5th* (1st ed.). Practice Hall.

IDAI. (2016). Penatalaksanaan Kejang Demam. In *Cermin Dunia Kedokteran-232* (Vol. 42, Issue 9, pp. 658–659). UKK Neurologi Ikatan Dokter Anak Indonesia.

Indrayati, N., & Haryanti, D. (2019). Description of Parents ' Ability in the First Handling of Fever Chance in Age Children Pendahuluan. *Gambaran Kemampuan Orangtua Dalam Penanganan Pertama Kejang Demam Pada Anak Usia*, *9*, 149–154.

Judha, M., & Rahil, H. N. (2011). *Sistem persarafan dalam asuhan keperawatan*. Gosyen Publishing.

Kamila, A. (2022). Psikoterapi Dzikir Dalam Menangani Kecemasan. *Happiness, Journal of Psychology and Islamic Science*, *4*(1), 40–49. https://doi.org/10.30762/happiness.v4i1.363

Mangku, G., & Senapathi, T. (2017). *Buku ajar ilmu anestesia dan reanimasi* (Edisi II). Indeks.

Murtiani, R., & Purnamawati, I. D. (2018). Asuhan Keperawatan Pada Anak Dengan Epilepsi. *Buletin Kesehatan: Publikasi Ilmiah Bidang Kesehatan*, *2*(2), 31–48. https://doi.org/10.36971/keperawatan.v2i2.43

Paul, V. K., & Bangga, A. (2019). *Ghai essential pediatrics*. CBS Publication.

Perdossi. (2016). Panduan Praktik Klinis Neurologi. *Perdossi*, 154–156.

Potter, P. ., & Perry, A. . (2012). *Fundamental of nursing*. Salemba Medika.

PPNI. (2018). *Standar Diagnosis Keperawatan Indonesia (SDKI)* (Edisi 1). DPP PPNI.

Purnajaya, H., & Erwanto, F. (2017). Akurasi Pemasangan Nasal Kanul Berhubungan Dengan Perubahan. *Media Ilmu Kesehatan*, *3*(3), 159–166.

Resti, H. E., Indriati, G., & Arneliwati, A. (2020). Gambaran Penanganan Pertama Kejang Demam Yang Dilakukan Ibu Pada Balita. *Jurnal Ners Indonesia*, *10*(2), 238. https://doi.org/10.31258/jni.10.2.238-248

Rosalina, A. P. (2022). *PENANGANAN PRE-HOSPITAL KEJADIAN KEJANG DEMAM PADA BALITA*. Institut Teknologi Sains dan Kesehatan Insan Cendikia Medika. Jombang.

Shibeeb, N. F., & Altufaily, Y. A. S. (2019). Parental Knowledge and Practice Regarding Febrile Seizure in their Children. *Medical Journal of Babylon*, *Volume 16*(Issue1), 58–64. https://doi.org/10.4103/MJBL.MJBL

Smeltzer, S. C., & Bare, B. G. (2013). *Buku*

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p-ISSN: 2667-1609, e-ISSN: 2809-3208

*Ajar Keperawatan Medikal Bedah. Brunner & Suddarth* (Edisi 8). EGC.

Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Afabeta, CV.

WHO. (2012). *Epilepsy Fact Sheet*.

WHO. (2019). *Epilepsy Fact Sheet*.