



A Community-Based Approach to Diarrhea Recovery in Children: The Role of WASH and Family Engagement

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Abstract. *Diarrhea in young children is a common health issue that can significantly affect a child's health status. The management of diarrhea in children requires a holistic approach, integrating medical, social, and environmental factors. This study describes the management of diarrhea in An. R, a 4-year-old child who experienced mild acute diarrhea. The interventions included hygiene education, oral rehydration therapy, the provision of low-fiber food, and active family involvement in the child's recovery. The results of the study show that the education provided, together with WASH (Water, Sanitation, and Hygiene)-based interventions, were effective in reducing diarrhea symptoms and accelerating recovery. Additionally, factors such as nutritional status, immunization, and environmental sanitation also influence the occurrence of diarrhea. This study concludes that the success of managing diarrhea in young children heavily relies on collaboration between families, healthcare providers, and public health policies. Effective management can be achieved through a community-based approach that emphasizes sanitation education and active family involvement.*

Keywords: *Diarrhea, Children, Hygiene Education, Oral Rehydration, WASH,*

1. INTRODUCTION

The primary focus of community midwifery is mothers and children under five who live within families and communities. Midwives view their patients as social beings who possess unique cultural backgrounds and are influenced by economic, political, socio-cultural, and environmental conditions. Key components of community midwifery include midwives, midwifery services, the environment, knowledge, and technology (Ministry of Health, Republic of Indonesia, 2018).

National health development aims to enable every citizen to achieve a healthy life in order to realize an optimal level of public health. Achieving comprehensive public health requires community participation and the mobilization of community resources, including families as the smallest unit of society. The government has launched the Safe Motherhood program, consisting of six key pillars: family planning services, antenatal care, clean and safe delivery, obstetric and neonatal care, basic health services, and primary health care that empowers women (Ministry of Health, Republic of Indonesia, 2021).

Diarrhea is a leading cause of death in developing countries, including Indonesia, and is one of the highest causes of mortality among children. Each year, approximately 1.7 million

children under five die from diarrhea (Ratnawati et al., 2019). Globally, diarrhea ranks as the fourth leading cause of death in children under five, with about 534,000 deaths recorded in 2017 (Goddard et al., 2020). In 2021, the global incidence of diarrhea among children reached 1.22 billion cases, with around 3,350 deaths occurring daily (Handayani et al., 2022). In India, 4.64% of children experience diarrhea annually, and UNICEF reports that 5% of child deaths in Southeast Asia are caused by diarrhea (Hanifa & Mon, 2021). In Indonesia, diarrhea is responsible for around 8,600 deaths in children under five, ranking 12th among 15 Southeast Asian countries (Puhi et al., 2023).

Waterborne diarrhea is prevalent in areas with inadequate drinking water treatment. Contaminated water and poor sanitation account for approximately 88% of four billion annual diarrhea cases, causing 1.8 million deaths, 90% of which occur in children under five (Bitew et al., 2018). According to the Indonesian Ministry of Health in 2018, the morbidity rate for diarrhea was 301 per 1,000 population. Among children under five, the average number of diarrhea episodes was 1.3 times per year. The diarrhea mortality rate among children aged 1–4 was 75 per 100,000 population, making it the leading cause of death (Romlah et al., 2020). In 2021, diarrhea remained the primary cause of death among children aged 12–59 months, accounting for 10.3% of all deaths (Ministry of Health, 2021).

In West Sumatra Province, the prevalence of diarrhea is relatively high, averaging 8.3% annually. The province ranks fourth highest after Bengkulu, Aceh, and West Nusa Tenggara. The highest prevalence is found in children under five (11.5%), with 11.6% living in rural areas (Ministry of Health, 2018). In 2021, the coverage of diarrhea treatment services for children in West Sumatra was recorded at 17.6%, with a morbidity rate of 18.09% (Ministry of Health, 2021). In Lima Puluh Kota Regency, 1,378 diarrhea cases were found among children under five out of the target of 5,082 cases in 2019. In 2021, 1,000 cases were identified out of a target of 4,835, and 3,956 cases occurred across all age groups—all of which received treatment from healthcare workers (Lima Puluh Kota Health Office, 2022; Ministry of Health, 2021).

Children under five are more vulnerable to diarrhea due to their underdeveloped immune systems. Persistent vomiting along with diarrhea can lead to severe dehydration. Diarrhea can result from direct factors such as bacterial, viral, or parasitic infections, and indirect factors like nutritional status, exclusive breastfeeding practices, environmental conditions, personal hygiene behaviors, handwashing habits, dietary patterns, immunization, and socio-economic status (Fatmawati, Arbianingsih, & Musdalifah, 2016).

Environmental factors such as access to clean water and proper sanitation facilities play a critical role in the spread of diarrhea. Contaminated environments combined with unhygienic

human behavior exacerbate the transmission of the disease. Limited access to clean water increases the risk of disease, with the average daily water requirement per person ranging from 150–200 liters. Access to clean water and adequate sanitation is a basic human right that underpins optimal health. It is estimated that more than 3.5 million people die each year from waterborne diseases and fecal contamination, such as diarrhea (Agus Iryanto, Joko, & Raharjo, 2021).

Improper disposal of feces can contaminate water and soil, becoming a source of infection and increasing the risk of disease transmission. It is therefore essential for every family member to properly dispose of infant feces either into a latrine or by burying it in a safe location if no toilet is available to prevent the spread of disease (Ministry of Health, Republic of Indonesia, 2020).

2. METHODE

The method used in this case report is a descriptive approach with a case study design. The study aims to evaluate community midwifery care within the family context, specifically focusing on a toddler named R, the child of Mr. R and Mrs. S, who is experiencing diarrhea. This report is based on the initial home visit conducted on Monday, November 25, 2024, from 10:00 to 11:40 AM Central Indonesia Time (WITA), at the family's residence located in Batu Kliang Utara Subdistrict, Central Lombok Regency, West Nusa Tenggara Province.

The primary subject of this study is R, a 3-year-old toddler suffering from diarrhea, with the supporting subjects being the child's parents Mr. R (45 years old), a farmer, and Mrs. S (35 years old), a housewife. Both parents are of Sasak ethnicity, adhere to Islam, and have completed senior high school education. Data collection was carried out using several techniques, including structured interviews with the parents to obtain information on the child's health history, dietary patterns, bowel habits, and overall condition before and during the illness; direct observation of the child's physical condition, home environment, sanitation, and the family's hygiene practices; basic physical examination to identify signs of dehydration; and document review, such as the child's health card or records from local health services if available.

The implementation of community midwifery care in this case follows the midwifery process, which consists of five stages: assessment to identify the child's health problems and environmental conditions; formulation of a community diagnosis; development of an action plan tailored to the family's needs; implementation, including educating the family on diarrhea management and the importance of clean and healthy living behaviors; and evaluation to assess the effectiveness of the intervention and plan follow-up visits. All activities were conducted

with strict adherence to ethical principles, including providing a clear explanation to the family regarding the purpose and benefits of the visit and obtaining informed consent before any actions were taken. The privacy and confidentiality of the family's data were maintained with the utmost responsibility.

A community-based approach to childhood diarrhea recovery emphasizes the important role of Water, Sanitation, and Hygiene (WASH) interventions alongside family involvement. This multifaceted strategy not only addresses immediate health issues but also promotes long-term behavioral changes that can significantly reduce the incidence of diarrheal diseases among children. Studies have shown that WASH interventions, including handwashing with soap and sanitation education, can reduce diarrheal diseases by up to 35% in children under five years old (Hashi et al., 2017).

Programs involving community participation, such as educational campaigns, have proven effective in improving knowledge and practices related to hygiene, which in turn leads to a lower prevalence of diarrhea (Begum et al., 2020) (Andriani & Apriani, 2024). WASH interventions are particularly beneficial for low-income households, where the burden of diarrheal diseases is highest. For example, in rural Bangladesh, improving WASH practices significantly reduced the risk of diarrhea, especially during the monsoon season (Ante-Testard et al., 2024). Engaging families in WASH education not only addresses immediate health concerns but also promotes sustainable practices that can lead to improved health outcomes over time (Farham & Petro, 2021).

3. RESULT AND DISCUSSION

a. Result

1) Family Identity

An assessment visit was conducted on November 25, 2024, from 10:00 to 11:40 Central Indonesia Time (WITA) at the patient's residence in North Batu Kliang Subdistrict, Central Lombok Regency. The main subject of this case was Master R, a 4-year-old boy, who presented with a chief complaint of diarrhea lasting three days prior to the visit. The child is part of a nuclear family consisting of his father (Mr. R, 45 years old, a farmer), his mother (Mrs. S, 35 years old, a housewife), and himself as the only child.

2) Family Health History and Lifestyle

The family's lifestyle is considered fairly good, with a regular eating pattern of three meals per day, and a varied diet including rice, protein sources, vegetables, and fruits. However, food preparation does not fully meet health standards, as vegetables are often overcooked, reheated multiple times, and seasoned excessively. Hygiene habits are

generally adequate, with routine handwashing using soap before and after meals, bathing twice daily, and the use of footwear. Sanitation facilities are sufficient (indoor toilet), and environmental cleanliness is well maintained. The family primarily consumes drinking water and has access to entertainment media (TV, radio).

3) Immunization History and Child Development

Mr. R has received a complete set of basic immunizations (BCG, Hepatitis B, DPT, Polio, and Measles) along with two doses of vitamin A supplementation. The child is routinely taken to the *posyandu* (integrated health post) for weight monitoring, and he possesses a Maternal and Child Health (MCH) handbook that is filled out by healthcare workers. His weight (17 kg) and height (100 cm) fall within the normal range according to the Growth Monitoring Chart (KMS). Nutritional status is classified as moderate based on the MCH handbook. The child demonstrates age-appropriate motor and social development.

4) Problem Identification and Diagnosis

The main complaint was watery diarrhea occurring 5–7 times a day, without blood or mucus, accompanied by nausea but no vomiting. The child was still willing to eat and drink, albeit in small quantities. Mild signs of dehydration were observed, including dry lips and general weakness. Physical examination results showed a body temperature of 37.5°C, pulse rate of 81 beats per minute, and respiratory rate of 20 breaths per minute. The abdomen appeared distended, and dental examination revealed dental caries.

Diagnosis: Mr. R, a 4-year-old child, was diagnosed with mild acute diarrhea.

5) Interventions and Implementation of Care

Community midwifery interventions were carried out on November 27 and 28, 2024. The objective was to address dehydration and diarrhea while meeting the child's nutritional needs. The interventions included Establishing good rapport with the family. Recommending adequate fluid intake and oral rehydration therapy (ORS). Providing education on low-fiber dietary options. Monitoring vital signs regularly. Educating the family on how to prepare a salt-sugar solution. Emphasizing the importance of rest and hygiene. Encouraging adherence to medication prescribed by the health center.

6) Evaluation

Evaluation was conducted on November 28, 2024, at 10:00 WITA. The child's mother stated that she understood the health education provided. Objectively, the child's condition had improved: his body temperature normalized (36.5°C), signs of dehydration had resolved, and the frequency of bowel movements had decreased to once daily. Physical

examination showed no dry lips, no abdominal distension, and no signs of fatigue or lethargy. Based on these findings, the intervention was deemed successful and discontinued.

7) Conclusion

Community midwifery care for pediatric diarrhea cases in the family context can be effectively implemented through holistic and educational approaches. Simple interventions such as dietary education, hygiene promotion, and administration of ORS and homemade salt-sugar solution significantly contribute to recovery. Active family involvement in childcare and adherence to Clean and Healthy Living Behavior (PHBS) principles are essential for preventing and managing diarrhea at the community level.

b. Discussion

Penatalaksanaan diare pada balita, seperti yang terjadi pada An. R, memerlukan pendekatan holistik yang mencakup aspek medis, sosial, dan lingkungan. Berdasarkan hasil kunjungan pengkajian dan intervensi yang dilakukan pada 25–28 November 2024, terdapat beberapa temuan yang relevan dengan literatur terkini. An. R telah menerima imunisasi dasar lengkap dan dua kali suplementasi vitamin A, serta rutin mengikuti penimbangan di posyandu. Status gizi anak berdasarkan buku KIA adalah sedang.

Hal ini sejalan dengan temuan Workneh et al. (2024) yang menunjukkan bahwa praktik pemberian makanan yang tepat selama diare pada anak usia 6–23 bulan di Sub-Sahara Afrika dapat mempengaruhi status gizi dan prevalensi diare. Selain itu, kebiasaan keluarga dalam menjaga kebersihan, seperti mencuci tangan dengan sabun sebelum dan sesudah makan, mandi dua kali sehari, serta penggunaan alas kaki, merupakan faktor penting dalam pencegahan diare. Penelitian di Myanmar juga menunjukkan bahwa praktik kebersihan yang baik berhubungan dengan prevalensi diare yang lebih rendah pada anak di bawah lima tahun (Soe et al., 2024). Intervensi yang mengintegrasikan aspek WASH (Water, Sanitation, and Hygiene) dengan kesehatan ibu dan anak terbukti efektif dalam menurunkan prevalensi diare.

Penelitian di Kenya menunjukkan bahwa setelah intervensi WASH, prevalensi diare menurun sebesar 69,1% di lokasi intervensi, dibandingkan dengan 58,6% di lokasi kontrol (Merid et al., 2023). Edukasi kepada ibu mengenai pentingnya pemberian cairan oralit, makanan rendah serat, serta pembuatan larutan garam-gula, merupakan bagian dari intervensi yang dilakukan. Hal ini sejalan dengan temuan bahwa intervensi berbasis komunitas yang mencakup edukasi kesehatan dapat meningkatkan penggunaan oralit dan zinc dalam penanganan diare pada anak (Mekonnen et al., 2023).

Keterlibatan aktif keluarga, terutama ibu, dalam proses penyembuhan anak sangat penting. Ibu An. R menunjukkan pemahaman yang baik terhadap edukasi yang diberikan, seperti yang tercermin dari pernyataannya pada evaluasi. Hal ini mendukung temuan bahwa perilaku pencarian pengobatan yang tepat pada ibu dapat mempengaruhi penatalaksanaan diare pada anak (Terefe et al., 2023). Secara keseluruhan, penatalaksanaan diare pada balita memerlukan pendekatan yang komprehensif, mencakup imunisasi, status gizi, praktik kebersihan, intervensi WASH, edukasi kesehatan, dan keterlibatan keluarga. Integrasi aspek-aspek tersebut dalam program kesehatan masyarakat dapat meningkatkan efektivitas penanggulangan diare pada anak usia balita.

4. CONCLUSION

Management of diarrhea in toddlers, as demonstrated with An. R, requires a holistic approach that integrates medical, social, and environmental factors. Interventions that include education on hygiene, oral rehydration, low-fiber foods, and the active role of the family in the child's recovery have been shown to be effective in reducing symptoms and accelerating recovery. Family involvement in understanding and applying the provided education is crucial for the successful management of diarrhea in children. Other factors such as nutritional status, immunization, and environmental sanitation also influence the occurrence of diarrhea. Community-based programs that involve education and WASH (Water, Sanitation, and Hygiene)-based interventions play a significant role in the prevention and management of diarrhea in children. Overall, the management of diarrhea in toddlers requires collaboration between families, healthcare providers, and public health policies to achieve optimal outcomes in managing childhood diarrhea.

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