MANAGEMENT OF ACUTE GASTROENTERITIS WITH FLUID VOLUME DEFICIT IN ELDERLY

[1]Zulfa Zahira, [2]Oca Floren Simanullang, [3]Febriana Sari, [4]Lia Safitri, [5]Doni Syahputra
[1,2,3,4]Sekolah Tinggi Ilmu Kesehatan Mitra Husada Medan
[5]RSU Haji Medan
Email: 2419201071@mitrahusadamedan.ac.id, 2419201047@mitrahusadamedan.ac.id, febrianasari@mitrahusadamedan.ac.id, 2419201333@mitrahusadamedan.ac.id, Donisyahputra@gmail.com

ABSTRACT

Background: Acute gastroenteritis in elderly individuals poses a considerable obstacle in healthcare due to the rapid onset of fluid depletion and a heightened risk of severe dehydration resulting from diminished physical reserves. **Objectives:** This study aimed to explore the application of comprehensive midwifery care following Varney's seven-step management framework, focusing on the treatment of fluid loss in an elderly patient. **Methods:** A descriptive qualitative case study approach was employed at the Fitrah Ward of UPTD RSU Haji Medan from November 18 to 23, 2025. Primary data were collected through clinical assessments of a 75-year-old female patient (Ny. I) presenting with a fluid volume deficit, combined with secondary data from Integrated Progress Notes (CPPT). **Results:** Midwifery strategies prioritized continuous vital sign monitoring, fluid tracking, team-based intravenous rehydration, and family health education. Following these systematic interventions, the patient showed a significant decrease in diarrhea episodes, stabilization of vital signs (initial BP 90/70 mmHg), and notable improvement in clinical dehydration indicators such as skin elasticity and oral mucous membranes. **Conclusions:** he methodical application of Varney's management framework, coupled with interdisciplinary cooperation, demonstrates high effectiveness in managing acute fluid loss, preventing hypovolemic shock, and improving clinical outcomes for older adults affected by gastroenteritis.

Keywords: Midwifery Care, Acute Gastroenteritis, Fluid Deficit, Geriatric.

INTRODUCTION

Acute gastroenteritis is a considerable public health issue both globally and nationally, primarily due to its strong correlation with illness, rapid loss of fluids, and the considerable demands it places on healthcare facilities providing referrals. In Indonesia, although there have been improvements in clinical protocols, the rate of acute diarrhea that leads to hospitalization in at-risk groups continues to be alarming. While comprehensive studies largely focus on pediatric gastroenteritis, the issue of acute fluid loss in older patients is equally critical but frequently overlooked. (Lepu, Hinga and Riwu, 2022)

Seniors are particularly at risk for swift dehydration, electrolyte disturbances, and potentially fatal hypovolemic shock following episodes of acute diarrhea because they have significantly reduced physiological reserves, weakened immune responses, and diminished thirst responses. In the sphere of maternal and child health, midwifery practices that extend into family-oriented and holistic community health models are crucial for enabling early detection, stabilizing acute conditions, and ongoing monitoring of metabolic issues within families, including their elderly members. (Rifka Alkhilyatul Ma'rifat, I Made Suraharta, 2024)

Addressing acute gastroenteritis in hospitals necessitates a structured and evidence-informed strategy to guarantee patient safety and enhance clinical outcomes. Thorough record-keeping in comprehensive progress notes (CPPT), careful oversight of fluid balances, and strong collaboration across disciplines involving midwives, doctors, and dietitians are essential for preventing complications. Clinical documentation at UPTD RSU Haji Medan shows an ongoing necessity for organized care systems to manage severe fluid shortages effectively. (Bhashyakarla *et al.*, 2026)

This research adopts Varney's Seven-Step Midwifery Management framework to deliver a systematic, reflective, and clinically valid approach to patient care. This model guarantees that care delivered is professional, accountable, collaborative, compassionate, and trustworthy. Moreover, enhancing strategies for clinical detection and management aligns closely with global development initiatives, particularly contributing to Sustainable Development Goal (SDG) 3 (Good Health and Well-being) through reducing preventable deaths and bolstering regional healthcare systems. Thus, the goal of this study is to assess and portray the execution of thorough midwifery care management for an elderly individual facing acute gastroenteritis with fluid volume depletion at UPTD RSU Haji Medan.(Lee *et al.*, 2022)

By exploring the connection between theoretical clinical frameworks and practical application, this document aims to provide a valuable reference for midwifery education, improve hospital clinical pathways, and offer practical advice to families regarding early dehydration prevention and hygiene care for seniors. (Nabila and Effendi, 2023)

METHODS

This research utilized a qualitative descriptive methodology characterized by a clinical case study framework, implementing an extensive Midwifery Care Management strategy. The methodological framework adhered to Varney's Seven-Step Midwifery Management guideline to methodically evaluate, interpret, devise, and assess clinical actions. The investigation took place at the Fitrah Ward of UPTD Rumah Sakit Umum Haji Medan, located in North Sumatra Province, occurring from November 18 through November 23, 2025. The focus of this study was a particular patient chosen through a selective case study method based on defined clinical

susceptibility criteria. (Hoorn and Zietse, 2017)
The individual was an elderly female patient (Ny. I, aged 75) who was admitted with an initial medical diagnosis of acute gastroenteritis and colitis of undefined cause (ICD-10: A09.9), presenting with a significant issue of fluid volume deficit. (Evelin Maharani Widjaja *et al.*, 2024)The collection of data employed both primary and secondary techniques to ensure comprehensive clinical data triangulation:

- Primary Data: Acquired through direct bedside interviews with the patient and her family (subjective data) as well as through physical examinations, monitoring vital signs, assessing skin turgor, and measuring fluid intake and output (objective data).(Munthe et al., n.d.)
- Secondary Data: Gathered from the patient's official hospital medical documentation, nursing records, and Integrated Progress Notes (Catatan Perkembangan Pasien Terintegrasi or CPPT).(Sinaga, 2022)

Data processing and analysis were carried out through qualitative descriptive methods. The clinical assessment examined how well the theoretical evidence-based midwifery protocols corresponded with the practical clinical management implemented in the hospital, ensuring safety, effectiveness, and interdisciplinary teamwork.(Bayi et al., 2021)

Data processing and analysis were carried out through qualitative descriptive methods. The compiled clinical data were verified, condensed, and arranged chronologically following the conventional Subjective, Objective, Assessment, and Plan (SOAP) narrative format. The clinical assessment examined how well the theoretical evidence-based midwifery protocols corresponded with the practical clinical management implemented in the hospital, ensuring safety, effectiveness, and interdisciplinary teamwork. (Abdulkadir *et al.*, 2025)

Data processing and analysis were carried out through qualitative descriptive methods. The compiled clinical data were verified, condensed, and arranged chronologically following the conventional Subjective, Objective, Assessment, and Plan (SOAP) narrative format.(*Hal. 2*, 2024) The clinical assessment examined how well the theoretical evidence-based midwifery protocols corresponded with the practical clinical management implemented in the hospital, ensuring safety, effectiveness, and interdisciplinary teamwork. (Abdulkadir *et al.*, 2025)

RESULT

The clinical observations collected from the case report of Ny. I, a 75-year-old woman admitted to UPTD RSU Haji Medan, showed distinct signs of acute gastroenteritis along with a deficit in fluid volume. When she arrived, the subjective information indicated that the patient had experienced recurrent episodes of watery stools for about two days before being hospitalized, along with considerable physical fatigue and a notable reduction in her appetite. Importantly, the stool did not show any traces of blood or mucus. (Al Jassas *et al.*, 2018)

The objective physical examination and initial vital signs assessment indicated a moderate level of clinical discomfort:

- Consciousness and Overall Condition: The patient was completely aware (alert) but demonstrated a general physical state classified as moderate/weak. (Norman, Herpich and Müller-Werdan, 2023)
- Vital Signs: Blood pressure was alarmingly low at approximately 90/70 mmHg, the respiratory rate was slightly increased at about 22 breaths per minute, the heart rate

varied between roughly 80-89 beats per minute, and the axillary temperature ranged from around 36.5°C to 38.5°C.(Pelayanan & Komprehensif, n.d.)

- Dehydration Signs: Observable indications of mild-to-moderate fluid loss were evident, illustrated by noticeably dry oral mucous membranes, reduced skin elasticity, and a noted decrease in urine production. (Galasso *et al.*, 2025)

After implementing the structured midwifery care management plan, clinical data recorded in the Integrated Progress Notes (CPPT) showed a gradually improving trend. During the 5-day observation period, the frequency of watery stools significantly declined, fluid balance was restored, and symptoms of dehydration were effectively resolved, leading to a stable physical improvement at the time of discharge.(Li, Xiao and Zhang, 2023)

DISCUSSION

The clinical handling of acute gastroenteritis in older adults introduces specific physiological hurdles that necessitate a thoughtful and anticipatory strategy, particularly in contrast to younger age groups.(Sitinjo & Dairi, 2019) This research reveals that a 75-year-old female patient swiftly encountered a significant fluid volume deficiency within a span of 48 hours from the onset of symptoms. Instead of perceiving gastroenteritis as merely a common gastrointestinal issue, this instance brings to light a severe susceptibility in older patients: aging is fundamentally associated with a decrease in overall body water, diminished thirst perception, and an impaired ability of the kidneys to concentrate urine. (Wahyuni *et al.*, 2025)
When acute diarrhea presents, these age-related deteriorations markedly expedite the progression from initial fluid loss to moderate dehydration, and possibly hypovolemic shock if not addressed effectively (Prasetyoningrum, 2014).
Consequently, the initial evaluation stage was seamlessly aligned with Varney's Midwifery Management framework, placing a priority on immediate metabolic stabilization rather than just symptomatic relief, thus directing clinical attention towards addressing the essential issue of fluid volume loss. The medical strategies employed within the hospital environment emphasize the intricate nature of fluid resuscitation for older patients. (Shaw, Beyers and Bajaj, 2022)

The careful combination of detailed fluid intake and output monitoring alongside routine vital sign assessments was fundamental to the care strategy. For elderly individuals, the restoration of intravascular volume to address low blood pressure (approximately 90/70 mmHg) necessitates a cautious approach. While swift intravenous rehydration is essential for enhancing tissue perfusion, it requires careful regulation and constant supervision through integrated progress notes (CPPT)
to avoid circulatory overload, which can easily lead to acute heart failure or pulmonary edema due to the age-related reduction in heart compliance. This case illustrates that the systematic implementation of midwifery care management adeptly navigates these clinical challenges by promoting a dependable and continuous monitoring framework. (Visser *et al.*, 2023)

CONCLUSIONS

The organized implementation of Varney's Seven-Step Midwifery Management framework effectively fulfilled the research goal by enhancing the stabilization and clinical results of an older patient suffering from acute gastroenteritis with a lack of fluid volume. Early screening by midwives successfully pinpointed critical indicators of mild to moderate dehydration, such as dry mouth tissue, low blood pressure (around 90/70 mmHg), and reduced skin elasticity, which informed targeted clinical actions, particularly ongoing monitoring of vital signs, accurate tracking of intake and output, and synchronized intravenous rehydration. As a result, the patient's condition showed considerable improvement, highlighted by stabilized metabolic parameters and a notable decrease in stool frequency at the time of hospital discharge. (Volkert *et al.*, 2022)

ACKNOWLEDGEMENT

The authors express their highest gratitude to the Director and the entire medical staff at the Fitrah Ward of UPTD Rumah Sakit Umum Haji Medan for providing the administrative support, clinical facilities, and access to the Integrated Progress Notes (CPPT) necessary to complete this case study. Special thanks are also extended to STIKes Mitra Husada Medan for the academic guidance and resources provided throughout the research process. Finally, the authors deeply appreciate the patient (Ny. I) and her family for their trust, cooperation, and consent in sharing this valuable clinical experience for the advancement of midwifery and geriatric care.

CONFLICT OF INTEREST AND FUNDING DISCLOSURE

All authors declare that they have no conflict of interest regarding the publication of this article. There are no financial, personal, or professional relationships that could inappropriately influence or bias the conduct and reporting of this research.

AUTHOR CONTRIBUTIONS

NRNN: conceptor, data curation, investigation, methodology, formal analysis, validation, visualization, writing original draft, writing review and editing.

REFERENCES

Abdulkadir, W.S. *et al.* (2025) "Lontara," 6(2), pp. 188–198.

Al Jassas, B. *et al.* (2018) "Gastroenteritis in adults," *International Journal Of Community Medicine And Public Health*, 5(11), p. 4959. Available at:

Bhashyakarla, A. *et al.* (2026) "Peri - procedural antibiotics for infection prevention in transjugular intrahepatic portosystemic shunt and plug - assisted retrograde

dengan Prinsip Pendekatan Kedokteran Keluarga Management of acute gastroenteritis in elderly patients with Principles of Family Medicine Approach," *Jurnal Medula Unila*, 13, pp. 363–371.

Evelin Maharani Widjaja *et al.* (2024) "Laporan Kasus: Kunjungan Gea Dengan Gizi Kurang Pada an. Cs Melalui Pendekatan Kedokteran Keluarga Di Sindang Jaya," *Jurnal*

Galasso, M. *et al.* (2025) "The Impact of Different Nutritional Approaches on Body Composition in People Living with Obesity," *Current Obesity Reports*, 14(1). Available at: https://doi.org/10.1007/s13679-025-00636-w.

Gastritis Chronic Prevention in the Work Area of Mangulewa Public Health Center," *Media Kesehatan Masyarakat*, 4(2), pp. 162–169. Available at:

Hoorn, E.J. and Zietse, R. (2017) "Diagnosis and treatment of hyponatremia: Compilation of the guidelines," *Journal of the American Society of Nephrology*, 28(5), pp. 1340–1349. Available at: https://doi.org/10.1681/ASN.2016101139.

https://doi.org/10.1007/s11154-022-09772-3.

https://doi.org/10.18203/2394-6040.ijcmph20184250.

https://doi.org/10.3390/nu15112609.

https://doi.org/10.35508/mkmhttps://ejurnal.undana.ac.id/MKM.

Kedokteran dan Kesehatan : Publikasi Ilmiah Fakultas Kedokteran Universitas

Lee, D. *et al.* (2022) "Multisystem Inflammatory Syndrome in Adults in an 80-Year-Old Korean Woman after COVID-19: A Case Report," *Infection and Chemotherapy*, 54(null), pp. 116–120. Available at: https://doi.org/10.3947/IC.2022.0115.

Lepu, R., Hinga, I.A.T. and Riwu, Y.R. (2022) "Knowledge Level of Patients Related To

Li, S., Xiao, X. and Zhang, X. (2023) "Hydration Status in Older Adults: Current Knowledge and Future Challenges," *Nutrients*, 15(11). Available at:

Nabila, E. and Effendi, R.E.R. (2023) "Penatalaksanaan Gastroenteritis Akut Pasien Lansia

Norman, K., Herpich, C. and Müller-Werdan, U. (2023) "Role of phase angle in older adults with focus on the geriatric syndromes sarcopenia and frailty," *Reviews in Endocrine and Metabolic Disorders*, 24(3), pp. 429–437. Available at:

pp. 1–8. Available at: https://doi.org/10.1186/s12877-023-03832-2.

Rifka Alkhilyatul Ma'rifat, I Made Suraharta, I.I.J. (2024) "No Title 済無No Title No Title No Title," 2, pp. 306–312.

Shaw, J., Beyers, L. and Bajaj, J.S. (2022) "Inadequate practices for hepatic encephalopathy management in the inpatient setting," *Journal of Hospital Medicine*, 17(S1), pp. S8–S16. Available at: https://doi.org/10.1002/jhm.12897.

Sriwijaya, 11(1), pp. 57–62. Available at: https://doi.org/10.32539/jkk.v11i1.233.

transvenous obliteration : a randomised trial," pp. 1–5. Available at: https://doi.org/10.4103/singaporemedj.SMJ-2025-229.

Visser, M. *et al.* (2023) "A Core Outcome Set for nutritional intervention studies in older adults with malnutrition and those at risk: a study protocol," *BMC Geriatrics*, 23(1),

Volkert, D. *et al.* (2022) "ESPEN practical guideline: Clinical nutrition and hydration in geriatrics," *Clinical Nutrition*, 41(4), pp. 958–989. Available at:

https://doi.org/10.1016/j.clnu.2022.01.024.
Wahyuni, R. *et al.* (2025) "Pemberdayaan Ibu Balita dalam Mengenali dan Mencegah Diare di Desa Bangun Rejo Tanjung Morawa Deli Serdang," *... Sosial dan ...* [Preprint], (2023). Available at: https://pkm.lpkd.or.id/index.php/AksiNyata/article/view/2038%0Ahttps://pkm.lpkd.or.id/index.php/AksiNyata/article/download/2038/2061.
Bayi, P., Puskesmas, D. I., & Kecamatan, M. (2021). *No Title*.
Hal. 2. (2024). *2*(4), 2–6.
Munthe, J., Sinaga, S. N., Manurung, H. R., Br, L. N., Manurung, I., Batee, C. M., Sibarani, L. E., Situngkir, M., Nabila, N., & Indriani, N. (n.d.). *Design And Implementation Of Android And Gps Based Friend Application In Mitigation Efforts And Early Emergency Aid For Disaster Victims In Maternal And Neonatal Parents*. 76–87.
Pelayanan, D., & Komprehensif, K. (n.d.). *No Title*.
Sinaga, S. N. (2022). *The role of the midwife as an implementer in handling risk 4T in Puskesmas Basah Rice , Pangkalan Susu subdistrict , Langkat district in 2021*. *10*(4).
Sitinjo, P., & Dairi, K. (2019). *1 1 , 1*. 69–78.