PROCEEDING

2nd Banten International Conference on Health Advancement & Research
binar@poltekkesbanten.ac.id
https://binar.poltekkesbanten.ac.id/
Vol. 1 No. 2 (2026)

EFFECT OF EXCLUSIVE BREASTFEEDING ON WASTING AMONG TODDLERS IN TAKERAN COMMUNITY HEALTH CENTER, MAGETAN REGENCY

Riris Yulistya Anggraini[1*]
[1]Public Health Study Program, STIKes Bhakti Husada Mulia Madiun.

Corresponding author: riristya24@gmail.com

ABSTRACT

Wasting among toddlers remains a public health problem that can hinder children's growth and development. One of the direct determinants suspected of influencing toddlers' nutritional status is exclusive breastfeeding. In the working area of Takeran Community Health Center, the number of toddlers experiencing wasting has continued to rise, from 26 cases in 2023 to 124 cases in 2025. This study aimed to analyze exclusive breastfeeding practices and their effect on the incidence of wasting among toddlers in the working area of Takeran Community Health Center, Magetan Regency. This study used a quantitative observational analytic method with a case-control design and a retrospective approach. The sample consisted of 64 toddlers, comprising 32 in the case group (wasting) and 32 in the control group (non-wasting), selected using simple random sampling. Data on the history of exclusive breastfeeding were collected through a questionnaire and analyzed univariately and bivariately using the Chi-Square test. The results showed that most toddlers had received exclusive breastfeeding, namely 43 toddlers (67.2%), while 21 toddlers (32.8%) had not. The Chi-Square test showed no significant effect of exclusive breastfeeding on the incidence of wasting among toddlers ($p = 0.594$; OR = 1.533; 95% CI: 0.536-4.389). It is concluded that although the coverage of exclusive breastfeeding in this area is relatively good, toddlers' nutritional status is more strongly determined by feeding practices after six months of age and other accompanying factors. Therefore, education on exclusive breastfeeding should be continued alongside strengthening the provision of adequate complementary feeding.

Keywords: exclusive breastfeeding; toddlers; wasting; case-control; Takeran Community Health Center

INTRODUCTION

The word nutrition is derived from the Arabic term "ghidza", meaning food, and scientifically describes the process by which the body obtains and utilizes substances from food to sustain life, growth, normal physiological function, and health maintenance (Istiqomah et al., 2024). Toddlers' nutritional status refers to the balance between the food intake received and the body's nutrient requirements needed to maintain health, growth and development, and optimal physical activity in children aged 0-59 months. Nutritional status is generally assessed through anthropometric measurements because they are practical and valid, including weight-for-age (W/A), height-for-age (H/A), and weight-for-height (W/H) indices, which are used to identify nutritional problems such as underweight, stunting, wasting, and overweight among toddlers (Urufia et al., 2024).

Nutritional status is also described as the outcome of a complex interaction between food consumption, digestion and nutrient absorption, and the body's capacity to utilize those nutrients, so that it is influenced not only by the quantity of food consumed but also by food quality, individual health status, and environmental and socioeconomic factors (Nika et al., 2024). Good nutritional status is closely linked to optimal body function, resistance to disease, and quality of life and productivity, whereas poor nutritional status can increase the risk of various health problems, including growth impairment, infectious disease, and chronic metabolic disease in adulthood (Hohnson, 2024).

Nutritional problems in toddlers can produce short-term effects, including impaired physical growth reflected in weight and height that do not match age, reduced immune function that makes children more susceptible to recurrent infections such as diarrhea and acute respiratory infection, and impaired brain and cognitive development due to nutrient deficiency during this critical growth period (Hasanah et al., 2024; Kusuma Sari & Susilowati, 2023). In the long term, nutritional problems during toddlerhood may reduce cognitive ability and academic performance, increase the risk of noncommunicable diseases such as diabetes, hypertension, and cardiovascular disease in adulthood, and lower productivity and human resource quality later in life (Prabuana & Dwiyanti Putri, 2024). These consequences confirm that optimal nutritional fulfillment during toddlerhood concerns not only physical growth but also the quality of future generations.

UNICEF's conceptual framework on nutrition explains that children's nutritional status is the end result of interacting determinants operating at the immediate, underlying, and basic levels (UNICEF, 2021). Immediate determinants include food intake and infectious disease, which directly affect the child's biological nutritional processes. Underlying determinants include caregiving practices, household food security, and access to health services, while basic determinants include socioeconomic conditions, parental education, and prevailing social and cultural norms (Alristina et al., 2025; (Katoch, 2022). At the immediate-determinant level, exclusive breastfeeding during the first six months of life is often positioned as an important factor because it is directly related to adequate intake, immunological protection, and optimal infant growth, so that failure to achieve exclusive breastfeeding may increase the risk of inadequate intake and infection exposure, which ultimately affects the child's nutritional status (Sari et al., 2025).

Exclusive breastfeeding refers to feeding infants breast milk only from birth until six months of age, without any additional fluids such as formula milk, orange juice, honey water, tea, or plain water, and without any additional solid foods. The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend exclusive breastfeeding for at least six months, continued up to two years of age with appropriate complementary feeding. Breast milk provides several important benefits for infants, including enhancing intelligence through specific substances not found in other types of milk, boosting immunity due to its complete nutrient content, strengthening the infant's neck and spinal bones, preventing intestinal infections given the infant's still-vulnerable digestive system, and helping infants achieve an ideal body weight (Ida Mardalena, 2021). Inadequate breastfeeding is associated with a higher risk of chronic malnutrition, as toddlers do not obtain a complete source of nutrients during this critical growth period (Sari et al., 2025), and infants who are not exclusively breastfed also tend to be more vulnerable to growth impairment, as they do not receive the essential nutrients and antibodies contained in breast milk (Pradnyani et al., 2023).

The success of mothers in providing exclusive breastfeeding is influenced by several interrelated factors, including maternal knowledge and education regarding the benefits of breast milk, family support during the breastfeeding period, maternal employment status together with the availability of lactation facilities at the workplace, cultural beliefs prevailing in the community, and support from health workers from pregnancy through the postpartum period (Lisna et al., 2025; (Maysyarah et al., 2025). Mothers with good knowledge tend to better understand the importance of exclusive breastfeeding and feel more confident while breastfeeding, whereas working mothers without adequate workplace support are at greater risk of discontinuing exclusive breastfeeding prematurely. Low maternal nutrition knowledge, which is often linked to household socioeconomic conditions, has also been reported to be associated with an increased risk of undernutrition among toddlers (Alristina et al., 2025).

In the working area of Takeran Community Health Center, Magetan Regency, the number of toddlers experiencing wasting has continued to increase over the past three years, from 26 toddlers in 2023, to 94 toddlers in 2024, and 124 toddlers in 2025. This upward trend highlights the need for further study of the factors contributing to this condition, one of which is exclusive breastfeeding. This study aimed to identify exclusive breastfeeding practices among toddlers and to analyze their effect on the incidence of wasting among toddlers in the working area of Takeran Community Health Center, Magetan Regency.

MATERIALS AND METHODS

This study used a quantitative approach with an observational analytic case-control design and a retrospective approach, tracing the history of exposure to a risk factor (exclusive breastfeeding) among a group currently experiencing wasting (cases) and a group not experiencing wasting (controls). The study was conducted in the working area of Takeran Community Health Center, Magetan Regency.

The sample consisted of 64 toddlers, comprising 32 toddlers in the case group (wasting) and 32 toddlers in the control group (non-wasting), selected using probability sampling with the simple random sampling technique (Sugiyono, 2023). The independent variable examined in this article is limited to exclusive breastfeeding, while the dependent variable is wasting among toddlers, determined based on the weight-for-height (W/H) index.

Data on the history of exclusive breastfeeding were collected using a validated and reliable questionnaire, with responses coded as 0 = Not Exclusively Breastfed and 1 = Exclusively Breastfed. Toddlers' nutritional status was determined through observation of the maternal and child health (KIA/KMS) handbook to examine the child's weight and height growth curves. Data processing included editing, coding, data entry, cleaning, and tabulating. Data were analyzed univariately to describe the frequency distribution of exclusive breastfeeding, and bivariately using the Chi-Square test to examine the effect of exclusive breastfeeding on wasting, with the Odds Ratio (OR) and 95% Confidence Interval (CI) calculated.

RESULTS AND DISCUSSION

The characteristics of respondents based on exclusive breastfeeding among toddlers in the working area of Takeran Community Health Center, Magetan Regency, are presented in Table 1.

Table 1 Frequency Distribution of Respondents Based on Exclusive Breastfeeding among Toddlers in the Working Area of Takeran Community Health Center, Magetan Regency

Exclusive Breastfeeding	Frequency (f)	Percentage (%)
Not Exclusively Breastfed	21	32.8
Exclusively Breastfed	43	67.2
Total	64	100

Source: Primary Data, 2026

Based on Table 1, most toddlers in the working area of Takeran Community Health Center, Magetan Regency, had received exclusive breastfeeding, namely 43 toddlers (67.2%), while 21 toddlers (32.8%) had not. This finding indicates that the majority of mothers had exclusively breastfed their children during the first six months of life, although a proportion of toddlers had not yet fully benefited from this practice.

The association between exclusive breastfeeding and the incidence of undernutrition among toddlers is presented in Table 2.

Table 2 Effect of Exclusive Breastfeeding on Wasting among Toddlers in the Working Area of Takeran Community Health Center, Magetan Regency

Exclusive Breastfeeding	Case n (%)	Control n (%)	Total n (%)	p-value	OR (95% CI)
Not Exclusively Breastfed	12 (37.5)	9 (28.1)	21 (32.8)	0.594	1.533
Exclusively Breastfed	20 (62.5)	23 (71.9)	43 (67.2)		(0.536-4.389)
Total	32 (100)	32 (100)	64 (100)		

Source: Primary Data, 2026

Based on Table 2, the largest proportion of toddlers who were not exclusively breastfed was found in the case group, namely 12 toddlers (37.5%), while the largest proportion of toddlers who were exclusively breastfed was found in the control group, namely 23 toddlers (71.9%). The Chi-Square test yielded a p-value of 0.594 ($p > 0.05$), indicating no significant effect of exclusive breastfeeding on the incidence of wasting among toddlers. The Odds Ratio obtained was 1.533 (95% CI: 0.536-4.389), indicating that toddlers who were not exclusively breastfed had a 1.533-fold higher likelihood of experiencing wasting compared with those who were exclusively breastfed, although this association was not statistically significant.

The absence of a significant association between exclusive breastfeeding and wasting in this study may be explained by several factors. Most toddlers in the study were already older than six months at the time of assessment, meaning their nutrient needs were no longer met by breast milk alone but also by complementary feeding. After six months of age, children's energy and nutrient requirements increase substantially and must be supported by appropriate complementary feeding in terms of quantity, frequency, texture, and nutrient content. Consequently, a history of exclusive breastfeeding during infancy does not necessarily determine a toddler's nutritional status at the time of the study. In addition, the difference in the proportion of exclusive breastfeeding between the case group (62.5%) and the control group (71.9%) was relatively small, which did not produce a statistically meaningful difference.

This finding is consistent with several studies indicating that the success of exclusive breastfeeding is influenced by various sociodemographic and situational factors, such as maternal employment status, workplace support, time availability for breastfeeding or expressing milk, and family support during the breastfeeding period (Handajany et al., 2023; Lisna et al., 2025; Maysyarah et al., 2025). Based on interviews conducted during this study, mothers who did not exclusively breastfeed reported several reasons, including work obligations that limited optimal breastfeeding, maternal illness that interrupted breastfeeding, low or absent milk production, and concerns that breast milk was insufficient for the infant, leading them to introduce formula milk or additional food before six months of age.

According to the researchers' analysis, the relatively high proportion of toddlers who received exclusive breastfeeding in the working area of Takeran Community Health Center reflects fairly good maternal awareness of the importance of breastfeeding, in line with studies emphasizing the role of exclusive breastfeeding in supporting nutritional status and preventing growth disorders such as stunting (Negari et al., 2025; Sari et al., 2025). Nevertheless, the lack of a statistically significant association in this study suggests that wasting is more strongly determined by adequate energy and protein intake and by a history of infectious disease after the exclusive breastfeeding period ends, a pattern also observed in studies examining the relationship between nutritional status, exclusive breastfeeding, and diarrheal disease among toddlers (Purwandaya, 2025). Therefore, the already-favorable coverage of exclusive breastfeeding needs to be sustained, accompanied by continuous education on adequate complementary feeding, lactation counseling, and family and health-worker support for mothers who still face barriers to breastfeeding.

CONCLUSION

This study found that most toddlers in the working area of Takeran Community Health Center, Magetan Regency, had received exclusive breastfeeding (67.2%), while the remainder (32.8%) had not, and that exclusive breastfeeding showed no significant effect on the incidence of wasting among toddlers in this area ($p = 0.594$; OR = 1.533; 95% CI: 0.536-4.389). These findings indicate that although exclusive breastfeeding coverage in the study area is relatively favorable, wasting among toddlers is more strongly shaped by feeding practices after six months of age, including the adequacy of complementary feeding, energy and protein intake, and exposure to infectious disease, rather than by exclusive breastfeeding status alone. This finding underscores the importance of sustaining exclusive breastfeeding promotion while simultaneously strengthening complementary feeding practices. Mothers are encouraged to initiate breastfeeding immediately after birth and to breastfeed exclusively for the first six months, and working mothers in particular are encouraged to express and store breast milk and to maintain a regular breastfeeding or pumping schedule so that exclusive breastfeeding can be sustained despite employment demands. Prompt consultation with a health worker or lactation counselor is recommended whenever mothers face difficulties such as low milk supply or concerns about milk sufficiency, and active support from husbands and other family members remains essential throughout the breastfeeding period. Beyond six months of age, breastfeeding should be continued up to two years alongside nutritionally balanced complementary feeding appropriate to the child's age. Future research is recommended to further examine the combined contribution of complementary feeding practices, energy and protein intake, and infectious disease history to the nutritional status of toddlers in this setting.

REFERENCES

Alristina, A. D., Laili, R. D., Nagy, É., & Feith, H. J. (2025). The Importance of Socioeconomic Factors Associated with Maternal Nutrition Knowledge and Undernutrition Among Children Under Five. *Nutrients*, *17*(21). https://doi.org/10.3390/nu17213355

Handajany, S., Agustin, D., Auliat, N. F., Dewi, N. A., & Larasati, E. (2023). Faktor-Faktor Yang Berhubungan Dengan Status Gizi Pada Balita Di Wilayah Posyandu Kedung Waringin Kabupaten Bekasi. *Jurnal Profesi (Profesional Islam): Media Publikasi Penelitian*, *20*(2), 152–160. https://doi.org/https://doi.org/10.26576/profesi.v20i2.169

Hasanah, Z., Salam, A., Hidayanty, H., Khuzaimah, A., & Zulkifli, A. (2024). Kejadian Wasting, Status Morbiditas, Dan Status Imunisasi Dasar Pada Balita Di Kabupaten Banggai. *JGMI : The Journal of Indonesian Community Nutrition*, *13*(2), 172–184. https://garuda.kemdiktisaintek.go.id/documents/detail/4646320

Hohnson, G. (2024). Understanding Nutrition Status: Key Factors and Implications for Health. *Journal of Food, Nutrition and Population Health*, *8*(2), 15–16. https://doi.org/10.21767/2577-0586.8.2.12

Ida Mardalena. (2021). *Dasar-Dasar Ilmu Gizi Dalam Keperawatan Konsep Dan Penerapan Pada Asuhan Keperawatan* (T. Kumala & N. Elisabet, Eds.). Pustaka Baru Press. https://eprints.poltekkesjogja.ac.id/7975/1/BUKU%20DASAR-DASAR%20ILMU%20GIZI%20DALAM%20KEPERAWATAN.pdf

Istiqomah, A., Masmur S, K., Amali, R. A., & Tiawati, S. (2024). Peran Gizi Terhadap Pertumbuhan Dan Perkembangan Balita. *Jurnal Kesehatan Masyarakat Dan Ilmu Gizi*, *2*(2), 67–74. https://doi.org/10.57213/antigen.v2i2.257

Katoch, O. R. (2022). Determinants of Malnutrition Among Children: A Systematic Review. *Nutrition*, *96*. https://doi.org/https://doi.org/10.1016/j.nut.2021.111565

Kusuma Sari, R., & Susilowati, E. (2023). Scoping Review: Faktor Penyebab Gizi Kurang Pada Balita. *Jurnal Gizi Ilmiah*, *10*(3), 1–9. https://doi.org/https://doi.org/10.46233/jgi.v10i3.1109

Lisna, Uly, N., & Alim, A. (2025). Faktor Sosial Budaya, Psikologis, dan Intervensi Terhadap Praktik Pemberian ASI Eksklusif: Tinjauan Literatur. *Bina Generasi: Jurnal Kesehatan*, *17*(1), 38–45. https://doi.org/https://doi.org/10.35907/bgjk.v17i1.447

Maysyarah, Tarigan, F. L., Ginting, D., Dachi, R., & Sitorus, M. E. (2025). Faktor Penghambat Ibu Dalam Pemberian Asi Eksklusif Di Wilayah Kerja UPT Puskesmas Galang Kecamatan Galang Kabupaten Deli Serdang Tahun 2023. *Jurnal Kesehatan Masyarakat*, *9*(1), 1431. https://doi.org/https://doi.org/10.31004/prepotif.v9i1.43584

Negari, P. P., Wardani, D. K., & Hargono, A. (2025). Pengaruh Riwayat Pemberian ASI Eksklusif Dan Penyakit Infeksi (ISPA Dan Diare) Dengan Kejadian Stunting Pada Balita. *PREPOTIF: Jurnal Kesehatan Masyarakat*, *9*(1), 1975–1984. https://doi.org/https://doi.org/10.31004/prepotif.v9i1.42415

Nika, V. O., Jumiyati, & Yunita. (2024). Survei Pola Konsumsi Protein Hewani, Sayur Dan Status Gizi Pada Mahasiswa Analis Kesehatan Poltekkes Kemenkes Bengkulu. *Jurnal Gizi Dan Kesehatan (JGK)*, *4*(1), 9–14. https://doi.org/10.36086/jgk.v3i2

Prabuana, I., & Dwiyanti Putri, F. (2024). Upaya Pencegahan Stunting melalui Kolaborasi Posyandu Dengan Mahasiswa KKN 17 Universitas Muhammadiyah Jember di Desa Ranupakis, Kecamatan Klakah. *Jurnal Pengabdian Indonesia*, *1*(4), 44–59. https://doi.org/https://doi.org/10.47134/jpi.v1i4.3589

Pradnyani, A. A. I. A. A., Widarti, I. G. A. A., & Sukraniti, D. P. (2023). Hubungan Tingkat Konsumsi Energi Protein, Pemberian ASI Eksklusif dan BBL Dengan Status Gizi Balita. *Jurnal Ilmu Gizi (Journal of Nutrition Science)*, *12*(4), 263–273. https://doi.org/https://doi.org/10.33992/jig.v12i4.2555

Prasasty, G. D., & Legiran. (2023). Studi Kasus Kontrol. *Jurnal Kedokteran Syiah Kuala*, *23*(1), 232–236. https://doi.org/https://doi.org/10.24815/jks.v23i1.25496

Purwandaya, N. C. (2025). Korelasi Status Gizi, ASI Eksklusif dan Diare Balita di Jawa Timur Tahun 2021-2023. *Jurnal Kesehatan Tambusai*, *6*(2), 9040–9049. https://doi.org/https://doi.org/10.31004/jkt.v6i2.45785

Sari, P. K., Isnaeni, W., & Sari, P. S. (2025). Hubungan Pemberian ASI Eksklusif dengan Kejadian Stunting: Studi Pendekatan Cross Sectional. *Nutriology: Jurnal Pangan, Gizi, Kesehatan*, *6*(2), 113–124. https://doi.org/10.30812/nutriology.v6i2

Sugiyono. (2023). *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D* (Sutopo, Ed.; Kedua). Alfabeta. www.cvalfabeta.com

UNICEF. (2021). *UNICEF Conceptual Framework on Maternal and Child Nutrition*. https://www.unicef.org/media/113291/file/UNICEFConceptualFramework.pdf

Urufia, W. O. N., Thaifur, A. Y. B. R., Nurhidayati, W. O., Sumarni M, Dafid, D. Z., & Subhan, M. (2024). Gambaran Status Gizi Anak Umur 0-60 Bulan di Posyandu Ferbena. *Jurnal Kolaboratif Sains*, *7*(8), 3242–3253. https://doi.org/10.56338/jks.v2i1.706