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Psychosocial and family-related factors associated with wasting among under-five children: A case-control study

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Abstract

Background: Wasting is an acute nutritional problem among under-five children, characterized by a weight-for-height or weight-for-length value below -2 SD. In the working area, wasting remains a nutritional concern.

Purpose: To determine the relationships between feeding practices, history of infectious diseases, maternal educational level, parenting practices, family economic status, and the incidence of wasting among under-five children.

Method: This quantitative study employed a case-control design. The population comprised under-five children aged 0–59 months in the working area of Yosomulyo Community Health Center. A total of 100 respondents, consisting of 50 cases and 50 controls, were selected using purposive sampling. Data were collected through anthropometric measurements and interviews using the Child Feeding Questionnaire (CFQ), as well as questionnaires assessing history of infectious diseases, parenting practices, and family economic status. Data were analyzed using the Chi-Square test.

Results: Feeding practices were significantly associated with wasting ($p = 0.003$; OR = 3.500), as were parenting practices ($p = 0.023$; OR = 2.953) and family economic status ($p = 0.004$; OR = 3.431). In contrast, history of infectious diseases ($p = 0.316$; OR = 0.668) and maternal educational level ($p = 0.509$; OR = 1.339) were not significantly associated with wasting.

Conclusion: Feeding practices, parenting practices, and family economic status were significantly associated with the incidence of wasting among under-five children, whereas history of infectious diseases and maternal educational level were not significantly associated with wasting. Strengthening appropriate feeding and parenting practices and improving family economic conditions may support efforts to prevent wasting among under-five children.

Keywords: Family Economic Status; Feeding Practices; Parenting Practices; Under-Five Children; Feeding Practices.

INTRODUCTION

Wasting is an acute form of malnutrition among under-five children, reflecting a condition of inadequate nutritional intake and/or infectious diseases (Harding, Aguayo, & Webb, 2018). Globally, wasting remains a major public health concern because it is associated with an increased risk of morbidity and mortality among children (Wali, Agho, & Renzaho, 2021). According to the UNICEF and WHO framework, wasting is influenced by interconnected

direct and indirect factors, including inadequate dietary intake, disease, caregiving practices, and socioeconomic conditions (United Nations Children's Fund (UNICEF), 2024; World Health Organization, 2023).

In Indonesia, wasting remains an important nutritional problem requiring continued attention (Ministry of Health of the Republic of Indonesia, 2023). National data reported a wasting prevalence of 8.5%

in 2023 (Ministry of Health of the Republic of Indonesia, 2023). In Lampung Province, the prevalence of wasting was 6.8% in 2024, while the Metro City Health Profile reported a prevalence of 9.2% (Metro City Health Office, 2024). In the working area of Yosomulyo Community Health Center, 51 cases of wasting were identified among 1,445 monitored under-five children in 2025, corresponding to 3.53%. These findings indicate that wasting remains a relevant nutritional concern at the local level.

Wasting is a multifactorial condition influenced by various factors. Feeding practices directly affect the adequacy of children's nutritional intake, and inadequate dietary intake is consistently identified as an important determinant of wasting among children under five (Harding, Aguayo, & Webb, 2018; Hossain, Huq, Islam, Mahfuz, Sari, Khan, Ahmed, Bulbul, Rahman, Mustaphi, Naila, & Ahmed, 2024). A history of infectious diseases may contribute to reduced appetite, impaired nutrient absorption, and increased energy requirements, thereby increasing the risk of acute malnutrition (Gudu, Obonyo, Omballa, Oyugi, Kiilu, Githuku, Gura, & Ransom, 2020). Maternal education may influence mothers' knowledge and ability to obtain and apply health information, while parenting practices are closely related to feeding, childcare, and health-seeking behaviors (Blankenship, Cashin, Nguyen, & Ip, 2020; Jalaludin, Fauzi, Sidiartha, John, Aviella, Noverly, Permatasari, & Muhandi, 2025). In addition, family economic status may determine access to nutritious food, adequate sanitation, and health services and has been identified as an important factor associated with child wasting (Asebe, Asmare, Mare, Kase, Tebeje, Asgedom, & Seifu, 2024; Pham, Silas, Okely, & Pomat, 2021).

RESEARCH METHOD

This study employed a quantitative observational analytic design using a case-control approach. The

study was conducted in the working area of Yosomulyo Community Health Center, Metro City, in March 2026. The study population consisted of all under-five children aged 0–59 months. A total of 100 respondents were included, comprising 50 under-five children with wasting as the case group and 50 under-five children without wasting as the control group. Participants were selected using purposive sampling. Primary data were collected through interviews using questionnaires assessing feeding practices, history of infectious diseases, parenting practices, and family economic status. Feeding practices were assessed using the Child Feeding Questionnaire (CFQ). Secondary data on wasting status were obtained from nutrition registers, Maternal and Child Health (MCH) books, or under-five nutritional status reports and classified according to the weight-for-height (WFH) index based on WHO standards.

Feeding practices were categorized as inappropriate (<55%) and appropriate (55–100%). History of infectious diseases was categorized as present or absent based on the occurrence of diarrhea or acute respiratory infection (ARI) within the previous 2–3 months. Maternal educational level was categorized as low ($\leq$ junior high school) or high (senior high school/college). Parenting practices were categorized as poor (<50%) or good ($\geq$ 50%). Family economic status was categorized as low (< IDR 3,050,498) or high ($\geq$ IDR 3,050,498), based on the applicable regional minimum wage. Data were analyzed using univariate and bivariate analyses. The Chi-Square test was used for bivariate analysis with a significance level of $\alpha = 0.05$. The strength of association was expressed as the Odds Ratio (OR) with a 95% Confidence Interval (95% CI). All contingency tables met the assumptions required for the Chi-Square test based on the assumption assessment conducted in the study. This study received ethical approval from Universitas Malahayati under ethical approval number 5339/EC/KEP-UNMAL/V/2026.

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RESEARCH RESULTS

Table 1. Distribution of Respondents (N=100)

Variable	Results
Wasting status (n/%)	
Wasting	50/50.0
Not wasting	50/50.0
Feeding practices (n/%)	
Inappropriate	45/45.0
Appropriate	55/55.0
History of infection (n/%)	
Yes	53/53.0
No	47/47.0
Maternal education (n/%)	
Low	29/29.0
High	71/71.0
Parenting practices (n/%)	
Poor	26/26.0
Good	74/74.0
Family economic status (n/%)	
Low	62/62.0
High	38/38.0

Most respondents were not wasting (50.0%), had appropriate feeding practices (55.0%), had a history of infection (53.0%), had high maternal education (71.0%), had good parenting practices (74.0%), and came from families with low economic status (62.0%).

Table 2. Relationship between Study Variables and Wasting Status

Variable	Wasting (n=50)	Not wasting (n= 50)	p-value	OR (95% CI)
Feeding practices (%)				
Inappropriate	30/60.0	15/30.0	0.003	3.500 (1.529–8.012)
Appropriate	20/40.0	35/70.0		
History of infection				
Yes	24/48.0	29/58.0	0.316	0.668 (0.304–1.472)
No	26/52.0	21/42.0		
Maternal education (n/%)				
Low	16/32.0	13/26.0	0.509	1.339 (0.563–3.189)
High	34/68.0	37/74.0		
Parenting practices (n/%)				

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Poor	18/36.0	8/16.0	0.023	2.953 (1.141–7.646)
Good	32/64.0	42/84.0		
Family economic status (n/%)				
Low	38/76.0	24/48.0	0.004	3.431 (1.461–8.057)
High	12/24.0	26/52.0		

Significant relationships with wasting were found for feeding practices ($p = 0.003$; $OR = 3.500$), parenting practices ($p = 0.023$; $OR = 2.953$), and family economic status ($p = 0.004$; $OR = 3.431$), while history of infection and maternal education were not significantly associated with wasting ($p > 0.05$).

DISCUSSION

The findings showed a significant relationship between feeding practices and the incidence of wasting ($p = 0.003$; $OR = 3.500$; 95% $CI = 1.529$ – 8.012). Under-five children with inappropriate feeding practices had 3.5 times higher odds of experiencing wasting than those with appropriate feeding practices. This finding indicates that feeding practices play an important role in meeting the nutritional requirements of children during the period of rapid growth (Harding, Aguayo, & Webb, 2018). Inappropriate feeding practices, including inadequate frequency, portion size, food variety, and insufficient sources of animal- and plant-based protein, may result in inadequate energy and nutrient intake (Hossain, Huq, Islam, Mahfuz, Sari, Khan, Ahmed, Bulbul, Rahman, Mustaphi, Naila, & Ahmed, 2024). Persistent nutritional inadequacy can negatively affect weight gain and increase children's vulnerability to acute malnutrition (Wali, Agho, & Renzaho, 2021). Therefore, strengthening nutrition education for mothers and caregivers regarding age-appropriate feeding frequency, portion size, dietary diversity, and adequate protein intake is important for wasting prevention (Isnaini, Mariza, & Putri, 2022).

No significant relationship was found between a history of infectious diseases and wasting ($p = 0.316$; $OR = 0.668$; 95% $CI = 0.304$ – 1.472). Among children with a history of infectious diseases, 24 (48.0%) experienced wasting, whereas 29 (58.0%) did not. In children without a history of infectious diseases, 26 (52.0%) experienced wasting and 21 (42.0%) did not. Although infectious diseases may contribute to malnutrition by reducing appetite, impairing nutrient absorption, and increasing metabolic requirements,

their effects may vary according to the type, severity, duration, and recurrence of infection (Gudu, Obonyo, Omballa, Oyugi, Kiilu, Githuku, Gura, & Ransom, 2020). The absence of a significant association in this study may also indicate that wasting was influenced by other factors, particularly dietary practices, caregiving conditions, socioeconomic status, and the child's overall health status (Asebe, Asmare, Mare, Kase, Tebeje, Asgedom, & Seifu, 2024). Thus, the occurrence of infection alone may not sufficiently explain differences in wasting among the children included in this study.

Maternal educational level was also not significantly associated with wasting ($p = 0.509$; $OR = 1.339$; 95% $CI = 0.563$ – 3.189). This finding suggests that formal education does not necessarily reflect the mother's nutritional knowledge or the quality of feeding and childcare practices (Blankenship, Cashin, Nguyen, & Ip, 2020). Mothers may obtain information regarding child nutrition and health from various sources, including health workers, community health post cadres, mass media, and social networks. The ability to apply nutritional knowledge in daily childcare may therefore be influenced by factors beyond formal educational attainment (Jalaludin, Fauzi, Sidiartha, John, Aviella, Noverly, Permatasari, & Muhandi, 2025). Consequently, wasting prevention programs should emphasize accessible and practical nutrition education and counseling for caregivers rather than relying solely on formal educational background (Isnaini, Mariza, & Putri, 2022).

A significant relationship was found between parenting practices and wasting ($p = 0.023$; $OR = 2.953$; 95% $CI = 1.141$ – 7.646). Children whose mothers had poor parenting practices had higher odds of experiencing wasting than those whose mothers demonstrated good parenting practices. Parenting practices encompass feeding, childcare, health monitoring, hygiene, and parental responsiveness to children's needs, which are important components of the broader caregiving environment affecting child nutritional status (Blankenship, Cashin, Nguyen, & Ip,

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2020). Poor parenting practices may reduce children's access to adequate nutrition and appropriate health care and may delay the recognition and management of nutritional or health problems (Jalaludin, Fauzi, Sidiartha, John, Aviella, Noverly, Permatasari, & Muhardi, 2025). Appropriate parenting practices, including responsive feeding, routine growth monitoring, utilization of community health post services, and timely health-seeking behavior when children become ill, may therefore contribute to the prevention of wasting (United Nations Children's Fund (UNICEF), 2024).

Family economic status was significantly associated with wasting ($p = 0.004$; $OR = 3.431$; 95% $CI = 1.461-8.057$). Children from families with low economic status had 3.431 times higher odds of experiencing wasting than those from families with high economic status. Economic conditions may affect the family's ability to provide adequate and diverse nutritious foods, access health services, maintain sanitation, and establish a healthy home environment (Asebe, Asmare, Mare, Kase, Tebeje, Asgedom, & Seifu, 2024; Pham, Silas, Okely, & Pomat, 2021). Limited financial resources may lead families to prioritize inexpensive foods with lower nutritional quality, potentially resulting in inadequate intake of essential nutrients (Hossain, Huq, Islam, Mahfuz, Sari, Khan, Ahmed, Bulbul, Rahman, Mustaphi, Naila, & Ahmed, 2024). These findings indicate that interventions to prevent wasting should consider the socioeconomic circumstances of families (Wali, Agho, & Renzaho, 2021). Nutrition education should include practical guidance on selecting affordable nutrient-dense foods, while vulnerable families may require additional social and health support (United Nations Children's Fund (UNICEF), 2024).

Overall, the findings demonstrate that wasting is a multifactorial nutritional problem influenced by feeding practices, parenting practices, and family economic conditions (Sadler, James, Bhutta, Briend, Isanaka, Mertens, Myatt, O'Brien, Webb, Khara, & Wells, 2022). The significant associations identified in this study highlight the importance of interventions that address both individual caregiving practices and broader household conditions (World Health Organization, 2023). Strengthening caregiver capacity through nutrition education, responsive feeding, growth monitoring, and appropriate childcare, combined with support for economically vulnerable

families, may provide a more comprehensive approach to wasting prevention among under-five children (United Nations Children's Fund (UNICEF), 2024). In contrast, the absence of significant associations with infectious disease history and maternal educational level indicates that these factors should be considered within the broader context of the child's nutritional, caregiving, health, and socioeconomic environment (Sadler, James, Bhutta, Briend, Isanaka, Mertens, Myatt, O'Brien, Webb, Khara, & Wells, 2022).

CONCLUSION

Feeding practices, parenting practices, and family economic status were significantly associated with the incidence of wasting among under-five children in the working area of Yosomulyo Community Health Center, Metro City. Inappropriate feeding practices, poor parenting practices, and low family economic status were associated with higher odds of wasting. In contrast, history of infectious diseases and maternal educational level were not significantly associated with wasting. These findings highlight the importance of strengthening appropriate feeding and parenting practices while addressing socioeconomic factors as part of comprehensive wasting prevention among under-five children.

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