Jurnal Keperawatan Suaka Insan (JKSI)
Volume 10, No 2, Juli-Desember 2025
P-ISSN : 2527-5798, E-ISSN : 2580-7633

HEALTH LITERACY AND MOTHERS' KNOWLEDGE OF ACUTE RESPIRATORY INFECTIONS IN TODDLERS: A CORRELATIONAL STUDY

Linda Herbayanti[1], Mohammad Basit[2], Latifah[3]
[1,2,3]Faculty of Nursing Sciences, Universitas Sari Mulia

Article Info

Article history:

Received June 06, 2025
Accepted August 13, 2025

Keywords:

Community Health Center
Health
Knowledge
Level
Literacy
Mothers of Toddlers

ABSTRACT

Infeksi Saluran Pernapasan Akut (ISPA) merupakan masalah kesehatan utama pada balita di Indonesia, dengan prevalensi tinggi pada kelompok usia di bawah lima tahun. Upaya pencegahan seringkali terhambat oleh rendahnya literasi kesehatan ibu, yang membatasi kemampuan mereka untuk memahami dan menerapkan informasi kesehatan secara efektif. Penelitian ini bertujuan untuk menganalisis hubungan antara literasi kesehatan dengan tingkat pengetahuan ibu tentang ISPA pada balita di wilayah kerja UPTD Puskesmas Lampihong. Studi ini menggunakan desain kuantitatif korelasional dengan sampel sebanyak 47 ibu yang memiliki anak balita. Analisis data dilakukan menggunakan Uji Korelasi Rank Spearman. Hasil utama menunjukkan mayoritas ibu (85,1%) memiliki literasi kesehatan pada kategori 'kurang', sementara tingkat pengetahuan mereka tentang ISPA mayoritas berada pada kategori 'cukup' (42,6%). Analisis statistik menemukan adanya hubungan positif yang signifikan antara literasi kesehatan dan tingkat pengetahuan ibu (nilai p < 0,001). Kesimpulannya, terdapat hubungan yang signifikan antara literasi kesehatan dan pengetahuan ibu tentang ISPA. Peningkatan literasi kesehatan merupakan strategi potensial yang krusial untuk meningkatkan pengetahuan ibu dalam upaya pencegahan ISPA pada balita.

Acute Respiratory Infection (ARI) constitutes a major health problem among toddlers in Indonesia, with a high prevalence in the under-five age group. Preventive efforts are often hindered by low maternal health literacy, which limits the ability of mothers to effectively comprehend and apply health information. This study aimed to analyze the relationship between health literacy and the level of mothers' knowledge regarding ARI in toddlers within the working area of the Lampihong Community Health Center (Puskesmas). This study employed a quantitative, correlational design with a sample of 47 mothers of toddlers. Data were analyzed using the Spearman Rank Correlation test. The main results indicate that a majority of the mothers (85.1%) had 'poor' health literacy, while their knowledge level of ARI was predominantly categorized as 'sufficient' (42.6%). Statistical analysis revealed a significant positive correlation between health literacy and maternal knowledge level (p<.001). In conclusion, a significant relationship exists between health literacy and mothers' knowledge of ARI. Enhancing health literacy is a crucial potential strategy for improving maternal knowledge in the prevention of ARI in toddlers.

Corresponding Author:

Linda Herbayanti
Faculty of Nursing Sciences, Universitas Sari Mulia
Email: *lindaherbayanti@gmail.com*

Introduction

Acute Respiratory Infection (ARI) is a global health problem and a leading cause of morbidity and mortality from infectious diseases worldwide (World Health Organization, 2007). Annually, ARIs contribute to approximately 4.25 million deaths globally and impose a significant economic burden on healthcare systems (Niederman & Torres, 2022; WHO, 2020). The disease burden disproportionately affects children, with lower respiratory infections being a primary cause of death in children under five (Claassen-Weitz et al., 2021). In Indonesia, data from the 2018 Basic Health Research (RISKESDAS) revealed a high prevalence of ARI, particularly in the 1-4 year age group (8.0%) and infants under one year (7.4%), highlighting the urgency of this issue at the national level (Ministry of Health, 2019).

The prevention of ARI is complex, influenced by the interplay of pathogenic agents (e.g., viruses, bacteria), host factors (i.e., toddlers), and environmental conditions such as household crowding and air pollution (Wahyudi & Zaman, 2022). In this context, parents, particularly mothers, play a central role as the primary caregivers responsible for their children's health (Cahyaningsih et al., 2021). Adequate parental knowledge concerning transmission, symptoms, and preventive measures for ARI is a critical foundation for protecting toddlers. Therefore, health promotion and prevention efforts must focus on enhancing the family's capacity to make informed health decisions (Vitaliati, 2021).

Despite ongoing control measures, data from the Lampihong Public Health Center (Puskesmas) reveal an alarming upward trend in ARI cases among toddlers. After a temporary decrease from 382 cases in 2020 to 268 in 2021, the number of cases rose sharply to 631 in 2022 and further increased to 657 in 2023. This drastic escalation suggests significant challenges in local community-level prevention, even though various educational programs, including those on social media, have been implemented by the Puskesmas since 2019.

A preliminary study conducted at the Lampihong Puskesmas indicated a potential underlying issue beyond the mere provision of information. Discussions with several mothers of toddlers revealed that they did not actively seek health information regarding ARI, citing unfamiliarity with the practice or time constraints. This phenomenon points to potentially low health literacy—an individual's capacity to find, understand, and apply health information to make appropriate decisions (Ditiaharman et al., 2022). Strong health literacy empowers individuals to take an active role in their health management, a crucial aspect that is often overlooked in rural settings (Miftahuddin et al., 2024; Purwanti & Suminar, 2016).

While the importance of parental knowledge in ARI prevention is widely acknowledged, the specific contribution of health literacy, the ability to find, understand, and apply health information, to this knowledge gap in a rural setting like Lampihong remains underexplored. This research gap is the central focus of our investigation. Therefore, this study aims to analyze the relationship between health literacy and the knowledge level of mothers of toddlers regarding ARI in the working area of the Lampihong Public Health Center.

Methods

Research Design, Setting, and Period

This study employed a quantitative design with a correlational approach to analyze the relationship between health literacy and mothers' knowledge of Acute Respiratory Infections (ARIs) in children under five. The research was conducted in South Lampihong Village, which is within the operational area of the Lampihong Community Health Center (Puskesmas). Data collection was carried out over a specific period, from November 1, 2024, to November 30, 2024.

Population and Sample

The target population comprised all mothers of children under five residing in South Lampihong Village, totaling 87 individuals according to the health center's medical records from January to October 2024. The sample size was determined using Slovin's formula with a 10% margin of error, yielding a required sample of 47 respondents. A probability sampling technique, specifically Simple Random Sampling, was utilized through the following procedure : a sampling frame was created by listing the names of all 87 mothers ; each mother was assigned a unique number from 1 to 87, which was written on identical slips of paper, rolled, and placed into a container ; after mixing, 47 slips were drawn without replacement to form the research sample.

Instruments and Data Collection Techniques

Data were collected using two instruments: a health literacy questionnaire and an ARI knowledge questionnaire. The health literacy questionnaire was an adaptation of the HLS-EU-SQ10-IDN, a short-form version of the European Health Literacy Survey Questionnaire validated for the Indonesian context. The instrument has established validity and reliability, with a reported Cronbach's Alpha of 0.85 in previous studies. It utilizes a 4-point Likert scale (1=Very Difficult, 2=Difficult, 3=Easy, 4=Very Easy), with scores categorized as Good (>30), Sufficient (20–30), and Poor (<20). The ARI knowledge questionnaire was adapted from a prior study by Evelin Firlia Setiawan (2024). It consists of 10 items covering the definition, causes, symptoms, transmission, prevention, and first aid for ARIs. A pilot test of this instrument yielded a Cronbach's Alpha of 0.82. Scoring assigned 1 point for a correct answer and 0 for an incorrect answer, with knowledge levels defined as Good (8–10), Sufficient (6–7), and Poor (≤5).

Data Analysis

To examine the relationship between the health literacy and knowledge variables, the data were analyzed using the Spearman's Rank Correlation test, facilitated by statistical software.

Ethical Considerations

The research protocol was submitted for ethical review and approval to the Health Research Ethics Committee (KEPK) at Sari Mulia University, Banjarmasin, prior to the commencement of data collection.

Results

Characteristic of Respondent

A total of 47 mothers with children under five years of age participated in this study. The demographic characteristics of the respondents are presented in Tables 4.1, 4.2, and 4.3. The majority of respondents, 30 individuals (63.8%), were in the early adulthood age group (26–35 years). The predominant educational level among respondents was Junior High School, with 22 individuals (46.8%). Based on occupation, the majority were homemakers, accounting for 28 respondents (59.6%).

Tabel 1. Frequency Distribution of Respondent Characteristics (N=47)

Kategori		Frekuensi	%
Age	Late Adolescence (17–25 Years)	2	4.3
	Early Adulthood (26–35 Years)	30	63.8
	Late Adulthood (36–45 Years)	15	31.9
Highest Level of Education	Elementary School	19	40.4
	Junior High School	22	46.8
	Senior High School	3	6.4
	Higher Education	3	6.4
Occupation	Homemaker	28	59.6
	Farmer	14	29.8
	Non-permanent Employee	3	6.4
	Civil Servant	2	4.3

Health Literacy and Knowledge of ARI

An overview of the respondents' health literacy and level of knowledge is presented in Tables 4.4 and 4.5. The research findings show that the majority of respondents, 40 individuals (85.1%), had a health literacy level within the 'poor' category. Meanwhile, the distribution for the level of knowledge regarding Acute Respiratory Infection (ARI) was more varied, with the 'sufficient' category being the most frequent at 20 respondents (42.6%), followed by the 'poor' category with 17 respondents (36.2%).

Tabel 2. Health Literacy and Knowledge Level of ARI (N=47)

Characteristic		Frekuensi	%
Health Literacy	Good	7	14.9
	Poor	40	85.1
Knowledge Level	Good	10	21.3
	Sufficient	20	42.6
	Poor	17	36.2

Relationship between Health Literacy and Knowledge Level

A correlation analysis was conducted to examine the relationship between mothers' health literacy and their level of knowledge about ARI. The Spearman Rank correlation test results indicated a significant and strong positive correlation between health literacy and knowledge level ($r_s = 0.613$, $p < 0.001$, $N = 47$). This suggests that the higher a mother's health literacy, the higher her level of knowledge regarding ARI.

Discussions

The findings of this study paint an alarming picture: the majority of mothers with toddlers in the UPTD Puskesmas Lampihong operational area, specifically 85.1%, possess a poor level of health literacy. This figure is not merely a statistic but a potent signal that existing health messages have likely failed to reach their target audience or to be understood by those most in need. This condition corroborates previous findings that consistently identify low health literacy as an independent risk factor that leads not only to poorer health

outcomes but also to increased frequency of inpatient service utilization (Boyle et al., 2017; Fajardo et al., 2019). Furthermore, the analysis reveals that health literacy serves as the foundation for knowledge. This is evidenced by the strong, significant positive correlation between health literacy and mothers' knowledge of ARIs ($r_s = .613$, $p < .001$). This implies that without the cognitive and social skills to access, understand, and apply health information, it is nearly impossible for a mother to build adequate knowledge. Ultimately, this foundational deficit leaves them powerless to protect their children from the threat of diseases such as ARIs, which continues to represent a significant global health burden (WHO, 2020).

A critical analysis of the local context reveals a significant disparity between existing health promotion strategies and the reality on the ground. Although the Lampihong Community Health Center has attempted to disseminate information via digital media like Instagram since 2019, this approach has proven unsuccessful. This failure can be attributed to several interconnected factors. First, the predominance of respondents with low educational attainment (the majority being junior high and elementary school graduates) and their occupation as housewives (IRT) creates challenges related to limited digital access and skills. Relying on social media as a primary channel means overlooking the fact that the target audience may not actively use these platforms or may lack the "digital literacy" required to digest the information presented. Second, this issue is compounded by the structural information access gap between rural and urban areas in Indonesia, where limited internet infrastructure and the daily activities of housewives, confined to their immediate surroundings, reduce their opportunities for exposure to modern information sources (Purwanti & Suminar, 2016). Finally, communication via social media is inherently passive, requiring users to proactively seek information—an approach that is ineffective for individuals with low health literacy and formal education, who instead require more active and personal engagement.

Based on this analysis, a strategic shift in nursing and health promotion interventions at the Lampihong Community Health Center is required. Health promotion efforts must pivot from passive digital media to active, structured, face-to-face educational sessions, utilizing existing community forums such as the Posyandu (integrated health post). Concurrent with this methodological change, educational materials must also be completely redesigned. Text-based digital content should be replaced with the use of simple language, free of medical jargon, supported by strong visual aids like illustrated posters and physical models, and supplemented with interactive demonstrations, such as proper handwashing techniques or recognizing the danger signs of ARIs.

To ensure the success of these interventions, the role of community human resources is crucial. Posyandu cadres must be intensively trained to become competent educational facilitators, as they possess a level of trust and an understanding of the local context that external health professionals may not. This training must emphasize participatory communication techniques. Furthermore, to reach housewives who may be unable to attend community activities, a program of home visits by community nurses or village midwives needs to be intensified. These visits allow for the delivery of more personalized and effective information. By adopting these human-centered, interactive, and socio-culturally appropriate interventions, the Lampihong Community Health Center can significantly improve mothers' health literacy and knowledge, which will ultimately contribute to a reduction in ARI-related morbidity and mortality among toddlers in its operational area.

Study Limitations

This study has several limitations that should be considered when interpreting the findings. First, the generalizability of the results is limited. The research was conducted with a sample of mothers from a single village, South Lampihong Village. This specific geographic and cultural context means the findings may not be applicable to mothers in other regions of Indonesia or in different countries, where factors like educational systems, access to healthcare, and cultural beliefs may vary significantly. Second, the cross-sectional design of the study, which is correlational in nature, establishes an association between health literacy and knowledge but cannot determine causality. While the results show that lower health literacy is related to lower knowledge about

Acute Respiratory Infections (ARIs), it is not possible to conclude that low literacy is the direct cause of this knowledge gap. Other unmeasured variables could be influencing both factors. Third, the reliance on self-report questionnaires for data collection introduces the possibility of social desirability bias. Respondents might have provided answers they perceived as more favorable or socially acceptable, rather than responses that accurately reflected their true literacy skills or knowledge levels. This could lead to an overestimation or underestimation of their actual abilities. Finally, while the sample size of 47 mothers was calculated using Slovin's formula, it is relatively small. A larger sample would increase the statistical power of the study, providing greater confidence in the strength and significance of the relationship found between health literacy and knowledge.

Conclusion

This study provides strong evidence that health literacy is a significant correlate of maternal knowledge regarding Acute Respiratory Infections (ARIs) in toddlers. This finding has direct implications for nursing practice at the primary care level. Health promotion interventions must, therefore, shift beyond mere information dissemination to actively building the health literacy skills of mothers. Consequently, the approach should pivot from passive media to more personalized and interactive strategies, such as structured, face-to-face education within community forums like the *Posyandu* (integrated health post), using simplified and visually supported materials. Future research should focus on developing and testing the effectiveness of targeted health literacy interventions for this population to validate the most effective approaches for improving knowledge and preventive behaviors.

Conflict of Interest

The authors declare that there is no conflict of interest associated with the research, authorship, and/or publication of this article. The entire research process, from design to the preparation of the manuscript, was conducted independently without any financial or non-financial influence from any party that could have affected the results or their interpretation.

Credit Author Statement

Linda Herbayanti was responsible for the conceptualization of the research, the development of the methodology, and the subsequent investigation. She also undertook the processes of data curation and formal analysis. Furthermore, she was the principal author of the original draft and was also involved in the review and editing of the final manuscript. Mohammad Basit and Latifah shared the roles of supervision and validation of the research. Both also contributed to the critical review and editing of the manuscript.

References

Abdullah, K., Jannah, M., Aiman, U., Hasda, S., Fadilla, Z., Taqwin, Masita, Ardiawan, K. N., & Sari, M. E. (2022). *METODOLOGI PENELITIAN KUANTITATIF*. Yayasan Penerbit Muhammad Zaini.

Anggeriyane, E., Yunike, Mariani, Susanto, W. H. A., Halijah, Sari, I. N., Handian, F. I., Elviani, Y., Suriya, M., Iswati, N., & Yulianti, N. R. (2022). *TUMBUH KEMBANG ANAK*. PT GLOBAL EKSEKUTIF TEKNOLOGI.

Batubara, S. O., Wang, H.-H., & Chou, F.-H. (2020). LITERASI KESEHATAN: KONSEP ANALISIS. *Jurnal Keperawatan Muhammadiyah*, *5*(2), 88–98.

Cahyaningsih, H., Hamzah, A., & Suheti, T. (2021). Pemberdayaan Ibu Balita dalam Penanganan ISPA pada Anak Pemberdayaan Ibu Balita dalam Penanganan ISPA pada Anak di Wilayah Kerja Puskesmas. *Media Karya Kesehatan*, *4*(2), 218–226.

Claassen-Weitz, S., Lim, K. Y. L., Mullally, C., Zar, H. J., & Nicol, M. P. (2021). The association between bacteria colonizing the upper respiratory tract and lower respiratory tract infection in young children: a systematic review and meta-analysis. *Clinical Microbiology and Infection*, *27*(9), 1262–1270. https://doi.org/10.1016/j.cmi.2021.05.034

Darsini, Fahrurrozi, & Cahyono, E. A. (2019). PENGETAHUAN ; ARTIKEL REVIEW. *Jurnal Keperawatan*, *12*(1), 95–107.

Delta, L., Afriyanto, Febriawati, H., & Sari, F. K. (2022). INDEKS LITERASI KESEHATAN KELUARGA PENDERITA ISPA PADA BALITA DI WILAYAH KERJA PUSKESMAS BETUNGAN KOTA BENGKULU. *Jurnal Mitra Rafflesia*, *14*(2), 1–7.

Ditiaharman, F., Agsari, H., & Syakurah, R. A. (2022). LITERASI KESEHATAN DAN PERILAKU MENCARI INFORMASI KESEHATAN INTERNET PADA SISWA SEKOLAH MENENGAH ATAS. *PREPOTIF Jurnal Kesehatan Masyarakat*, *6*(1), 355–365.

Kementerian Kesehatan RI. (2019). *Laporan Nasional Riskesdas 2018*. Badan Penelitian dan Pengembangan Kesehatan. https://repository.badankebijakan.kemkes.go.id/3514/1/Laporan%20Riskesdas%202018%20Nasional.pdf

Miftahuddin, M. C., Budiyanto, J. H., & Dewanto, F. (2024). KOMUNIKASI KESEHATAN DAN LITERASI KESEHATAN. *Action Research Literate*, *8*(2), 150–155.

Niederman, M. S., & Torres, A. (2022). Respiratory infections. *European Respiratory Review*, *31*(166). https://doi.org/10.1183/16000617.0150-2022

Nura, I. D., Kholisa, I. L., & Lusmilasari, L. (2020). Hubungan Peran Tenaga Kesehatan dengan Literasi Kesehatan Ibu. *Jurnal Keperawatan Klinis Dan Komunitas*, *4*(2), 62–72.

Nurmala, I., Rahman, F., Nugroho, A., Erlyani, N., Laily, N., & Anhar, V. Y. (2018). *PROMOSI KESEHATAN*. Airlangga University Press.

Paramita, R. W. D., Rizal, N., & Sulistyan, R. B. (2021). *METODE PENELITIAN KUANTITATIF*. WIDYA GAMA PRESS.

Priadana, H. M. S., & Sunarsi, D. (2021). *Metode Penelitian Kuantitatif*. Pascal Books.

Prof.Dr.Sugiyono. (2013). *METODE PENELITIAN KUANTITATIF DAN R&D*. Penerbit Alfabeta.

Purwanti, H., & Suminar, J. R. (2016). LITERASI KESEHATAN MASYARAKAT DALAM MENOPANG PEMBANGUNAN KESEHATAN DI INDONESIA. *PROSIDING SEMINAR NASIONAL KOMUNIKASI*, 344–351.

Rachmawati, W. C. (2019). *Promosi Kesehatan dan Ilmu Perilaku*. Wineka Media.

Sero, L. R., & Fitria, P. N. (2024). TINGKAT PENGETAHUAN DAN PERILAKU IBU TENTANG PENCEGAHAN INFEKSI SALURAN NAPAS ATAS (ISPA) PADA BALITA DI DESA DORUME. *Jurnal Keperawatan Suaka Insan (JKSI)*, *9*(1), 85–91.

Soesana, A., Subakti, H., Karwanto, Fitri, A., Kuswandi, S., Sastri, L., Falani, I., Aswan, N., Hasibuan, F. A., & Lestari, H. (2023). *Metodologi Penelitian Kuantitatif*. Yayasan Kita Menulis.

Suarnianti, & Kadrianti, E. (2019). Upaya Menekan Penularan Penyakit ISPA dengan Pelatihan Deteksi Dini. *Indonesian Journal of Community Dedication (IJCD)*, *1*(1), 10–13.

Vitaliati, T. (2021). FAMILY HEALTH CARE TASKS IMPLEMENTATION IN THE PREVENTION OF COVID-19. *Seminar Nasional Keperawatan "Strategi Optimalisasi Status Kesehatan Mental Masyarakat Dengan Perawatan Paliatif Di Era Pandemi Covid-19"*, 6–10.

Wahyudi, A., & Zaman, C. (2022). ANALISIS KEJADIAN ISPA PADA ANAK DALAM LINGKUNGAN KELUARGA PEROKOK DI WILAYAH KERJA UPTD PUSKESMAS X KOTA PALEMBANG. *E-Indonesian Journal of Health and Medical*, *2*(3), 475–482.

World Health Organization. (2007). *Pencegahan dan Pengendalian Infeksi Saluran Pernafasan Akut (ISPA) yang Cenderung Menjadi Epidemi dan Pandemi di Fasilitas Pelayanan Kesehatan*.

World Health Organization. (2008). *Pencegahan dan Pengendalian Infeksi Saluran Pernafasan Akut (ISPA) yang Cenderung Manjadi Epidemi dan Pandemi di Fasilitas Pelayanan Kesehatan*.

Yulizawati, & Afrah, R. (2022). *Pertumbuhan dan Perkembangan Bayi dan Balita*. Indomedia Pustaka.

Zainuri, H., Subakti, H., Suttrisno, Saftari, M., Sari, A. C., Simarmata, J., Silaban, P. S. M. J., Yuniwati, I., Riana, L. W., & Lotulung, C. V. (2024). *Desain Penelitian Kuantitatif*. Yayasan Kita Menulis. https://doi.org/978-623-113-248-2

Zakaria. (2022). LITERASI KESEHATAN: PELUANG PEMBELAJARAN SEKOLAH DASAR DALAM MITIGASI COVID-19. *Dirasah*, *5*(1), 1–11.