



Primary healthcare physicians' readiness in addressing child stunting: a review of knowledge, attitudes, and practices in Aceh Province

Kesiapan dokter puskesmas dalam menangani stunting anak: tinjauan pengetahuan, sikap, dan tindakan di Provinsi Aceh

Tita Menawati Liansyah^{1*}, Abiarso Widoseno², Iflan Naufal³, Zahratulaini⁴, Ika Waraztuty⁵, Tilaili Ibrahim⁶, Vera Dewi Mulia⁷, Winda Yulia⁸, Visa Yunanda⁹, Derevie Hendryan Moulina¹⁰, Fitra Fitra¹¹, Ari Bandana Tasrif¹², Ariza Farizca¹³

¹ Departemen Family Medicine Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: titamenawati@usk.ac.id

² Fakultas Kedokteran Universitas Syiah Kuala. E-mail: abiarsowido25@gmail.com

³ Departemen Ilmu Gizi, Fakultas Kedokteran Universitas Syiah Kuala.

E-mail: iflandr@usk.ac.id

⁴ Departemen Family Medicine Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: zahratulaini@usk.ac.id

⁵ Bagian Anatomi - Histologi Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: ikawaraztuty@usk.ac.id

⁶ Departemen Ilmu Kesehatan Masyarakat, Fakultas Kedokteran, Universitas Syiah Kuala. E-mail: ibrahimtilaili@usk.ac.id

⁷ Departemen Patologi Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: vera_dm@usk.ac.id

⁸ Departemen Mikrobiologi, Kedokteran Tropis, Fakultas Kedokteran, Universitas Syiah Kuala. E-mail: winda@usk.ac.id

⁹ Departemen Obstetri dan Ginekologi, Fakultas Kedokteran, Universitas Syiah Kuala. E-mail: visayunanda@usk.ac.id

¹⁰ Departemen Obstetri dan Ginekologi, Fakultas Kedokteran, Universitas Syiah Kuala. E-mail: deremou23@gmail.com

¹¹ Fakultas Kedokteran, Universitas Syiah Kuala/ RSUDZA Banda Aceh.

E-mail: fitra@usk.ac.id

¹² Departemen Neurologi, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: ari_tasrif@usk.ac.id

¹³ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

¹⁴ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

¹⁵ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

¹⁶ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

¹⁷ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

¹⁸ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

¹⁹ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

²⁰ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

²¹ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

²² Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

²³ Departemen Kedokteran Jiwa, Fakultas Kedokteran, Universitas Syiah Kuala.

E-mail: farizca@usk.ac.id

Abstract

Stunting remains a significant chronic nutritional problem in Indonesia, including the province of Aceh. The lack of data on the knowledge, attitudes, and practices (KAP) of primary healthcare physicians regarding stunting prevention represents a critical gap that warrants investigation. This study aimed to evaluate the levels of knowledge, attitudes, and practices of public health center (PHC) physicians in addressing childhood stunting in Aceh Province. A descriptive-quantitative design was employed involving 143 physicians from 39 PHC located in Banda Aceh and Aceh Besar. This study was conducted between April 2022 and January 2023. Data were collected using a validated and reliable questionnaire and analyzed using univariate statistics. The majority of the respondents were female (89,5%). A total of 67,8% of respondents demonstrated good knowledge, 86% exhibited positive attitudes, and 82% reported engaging in stunting prevention practices aligned with standard guidelines. In conclusion, PHC physicians in the study area displayed strong readiness to support stunting prevention efforts. Continued capacity-building interventions and sustainable support systems are essential for reinforcing their strategic role in primary healthcare services.

Keywords: KAP study, malnourished children, stunting, primary healthcare physicians, primary health

Abstrak

Stunting masih menjadi masalah gizi kronis yang signifikan di Indonesia, termasuk di Provinsi Aceh. Minimnya data mengenai pengetahuan, sikap, dan tindakan (KAP) dokter puskesmas dalam pencegahan stunting menjadi celah penting yang perlu diteliti. Penelitian bertujuan untuk untuk mengevaluasi tingkat pengetahuan, sikap, dan tindakan dokter puskesmas dalam menangani stunting pada anak di Provinsi Aceh. Penelitian deskriptif-kuantitatif ini melibatkan 143 dokter dari 39 puskesmas di Banda Aceh dan Aceh Besar, telah dilakukan pada April 2022 sampai Januari 2023. Data dikumpulkan melalui kuesioner yang tervalidasi dan reliabel, serta dianalisis secara univariat. Hasil, sebagian besar responden adalah perempuan (89,5%). Sebanyak 67,8% memiliki tingkat pengetahuan yang baik, 86% menunjukkan sikap positif, dan 82% melakukan tindakan pencegahan stunting sesuai standar. Kesimpulan, dokter puskesmas di wilayah studi menunjukkan kesiapan yang baik dalam mendukung upaya pencegahan stunting. Intervensi peningkatan kapasitas dan sistem pendukung yang berkelanjutan diperlukan untuk memperkuat peran strategis mereka di layanan kesehatan primer.

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Kata Kunci: Anak malnutrisi, dokter Puskesmas, KAP study, stunting, pelayanan kesehatan primer

Introduction

Stunting is a form of chronic malnutrition characterized by a child's height that is significantly below the age-standardized norm due to prolonged nutritional deficiencies, particularly during the critical window from conception to the first two years of life (Kalla, 2017). This condition has profound implications on cognitive development, immune function, and long-term productivity. Globally, it was estimated that in 2017, approximately 22,2%—or 150,8 million— of children under five were stunted. In Indonesia, although the prevalence has gradually declined, the stunting rate remains high and is prioritized within the national health development agenda (Ministry of Health, Republic of Indonesia, 2021).

Aceh Province ranks among the top three provinces with the highest stunting prevalence in Indonesia, reporting a rate of 33,2% based on the 2021 Indonesian Nutritional Status Survey (SSGI). Several districts and municipalities have shown particularly concerning figures, including Gayo Lues (42,9%), Subulussalam (41,8%), Aceh Besar (32,4%), and Banda Aceh (23,4%) (Carolina, 2021; Ministry of Health RI, 2021). These statistics highlight the urgent need for interventions that leverage human resources, particularly healthcare professionals working in primary care settings (Miranda et al., 2023).

Physicians at primary health centers (PHC) play a critical role in preventing stunting. They are responsible for the early detection of growth faltering, delivery of nutrition education, and monitoring child development. However, their effectiveness is strongly influenced by their levels of knowledge, attitudes, and practices (KAP) (Bukit et al., 2021; Muhdar et al., 2022). Knowledge serves as a fundamental basis that shapes attitudes and motivates professional action in both promotive and preventive healthcare. Adequate knowledge enhances healthcare providers' confidence and ability to effectively deliver nutrition education (Ahmed et al., 2023; Zamir et al., 2021). A positive attitude toward stunting prevention reflects professional

commitment, while actual practices translate knowledge and attitude into action. Therefore, assessing the KAP of primary health care (PHC) or *Puskesmas* physicians is essential for evaluating the readiness of the primary healthcare system to support the national agenda for accelerated stunting reduction (El-Rafie et al., 2018; Kodish et al., 2021).

Several studies have identified healthcare workers' limited knowledge as a key barrier to the implementation of nutrition programs and child growth monitoring (Kebede et al., 2022; Mangundap et al., 2022; Reñosa et al., 2020). Nevertheless, comprehensive assessments of the KAP profiles of PHC physicians in relation to stunting, particularly in the Aceh Province, remain scarce. To date, no studies have specifically examined physicians' KAP in Aceh despite the region's high stunting rates and unique sociocultural context. This indicates a critical gap in the literature that requires further exploration.

In light of this background, the present study aimed to evaluate the levels of knowledge, attitudes, and practices of PHC physicians in managing childhood stunting in Aceh Province. The findings of this study are expected to inform strategies for strengthening healthcare workforce capacity, enhancing the primary healthcare system, and guiding evidence-based policymaking to accelerate stunting reduction efforts, particularly in Aceh.

Methods

This study employed a descriptive quantitative approach using a survey method to evaluate the levels of knowledge, attitudes, and practices (KAP) among primary healthcare physicians regarding stunting prevention. Data were collected using a structured questionnaire that had undergone prior validation and reliability testing.

The study was conducted in 39 primary health centers (PHC) located across two regions: 11 in Banda Aceh City and 28 in the Aceh Besar

District. The data collection period spanned April 2022 to January 2023. These areas were selected because of their high prevalence of stunting, both exceeding the provincial average (Ministry of Health RI, 2021). Additionally, Banda Aceh and Aceh Besar represent distinct urban and peri-urban contexts, respectively, which are relevant for understanding variations in primary healthcare practices.

A total sampling method was applied because the total number of primary care physicians in the study area was relatively limited and accessible. The target population included all full-time physicians working at the selected PHC who met the following inclusion criteria: (1) actively serving as a primary care physician in Banda Aceh or Aceh Besar and (2) providing informed consent to participate in the study. The exclusion criteria were as follows: (1) physicians on leave during the data collection period and (2) medical interns who had not yet assumed full duties. A total of 143 physicians met the inclusion criteria and participated in the survey. The risk of nonresponse bias was minimized through direct engagement by trained enumerators, and all eligible physicians responded to the questionnaire.

The research instrument consisted of a questionnaire developed based on the KAP indicators and a review of the relevant literature. Construct validity and reliability tests were conducted on a pilot sample of 15 physicians from outside the study area (Pidie District) to avoid contamination. The validity was assessed using Pearson's product-moment correlation. All 30 items (13 for knowledge, 10 for attitude, and seven for practice) demonstrated correlation coefficients above the critical r -value (0,514), indicating satisfactory construct validity. Instrument reliability was evaluated using Cronbach's alpha, with all subscales exceeding 0,90, confirming excellent internal consistency and appropriateness.

This study was approved by the Ethics Committee of the Faculty of Medicine, Universitas Syiah Kuala (Approval No 098/EA/FK/2022). Data were analyzed univariately for each variable and are presented as frequency distributions and percentages.

Result and Discussion

Respondent Characteristics

The respondent characteristics in this study included age and sex, as presented in Table 1.

Table 1. Characteristics of study respondents

Characteristics	n	%
Age		
26 – 35 years	27	18,9
36 – 45 years	110	76,9
46 – 55 years	6	4,2
Sex		
Male	15	10,5
Female	128	89,5

As shown in Table 1, respondents were categorized into three age groups. The majority (76,9%) of the participants were aged 36–45 years. In terms of gender, most respondents were female (89,5%), while 10,5% were male.

Knowledge Related to Stunting

Table 2 presents the distribution of the respondents' knowledge levels regarding stunting in children.

Table 2. Knowledge of primary care physicians on childhood stunting

Knowledge	n	%
Poor	0	0,0
Fair	46	32,2
Good	97	67,8

Most of the respondents (67,8%) demonstrated good knowledge of stunting. This indicates that primary care physicians in Banda Aceh and Aceh Besar generally possess an adequate understanding of the definitions, causes, consequences, and preventive strategies related to stunting. These findings are consistent with those of El-Rafie et al. (2018) and Jannah & Diba (2022), who noted that health professionals with higher educational backgrounds tend to have stronger nutrition literacy. Locally, this level of knowledge is commendable given the strategic role of physicians as frontline providers in community nutrition interventions.

However, a high level of knowledge alone does not ensure effective clinical practice. Muhdar et al. (2022) identified a gap between knowledge and actual implementation, especially in settings where health system support—such as ongoing training, supervision, and educational materials—is lacking. Therefore, high knowledge levels should be viewed as foundational assets that require institutional capacity strengthening to be fully effective.

A high level of physician knowledge may also be linked to the relatively low prevalence of stunting in the study areas. According to data from the Aceh Provincial Health Office, stunting rates in Banda Aceh and Aceh Besar are below 20%, which is considered low compared with other districts in the province. Nonetheless, caution is warranted when interpreting this association, as the study employed a descriptive design and did not include inferential analysis to test the variable relationships.

Knowledge, as a component of the Knowledge, Attitude, and Practice (KAP) model, contributes to the formation of attitudes and behaviors. According to health behavior theories, knowledge influences behavior change only when accompanied by adequate motivation and external reinforcement (Erawati, 2020). In Aceh's primary care context, regular training, multi-sectoral collaboration, and community-based health promotion are key to translating knowledge into practical applications.

Attitudes Toward Stunting

The results showed that most physicians (86%) demonstrated positive attitudes toward addressing stunting, whereas 14% exhibited moderately favorable attitudes (Table 3).

Table 3. Attitudes of primary care physicians toward childhood stunting

Attitudes	n	%
Poor	0	0,0
Fair	20	14,0
Good	123	86,0

A high proportion of positive attitudes suggests a strong commitment among physicians to the importance of preventing and managing stunting. These findings align with Shakhshir & Alkaiyat (2023), who reported that the majority of healthcare workers in Ethiopia held favorable views on child nutrition interventions, including early detection and appropriate feeding practices, as key components of primary care.

However, the presence of 14% of respondents with only moderately favorable attitudes may indicate a subgroup that is less actively involved in stunting prevention. This could be attributed to factors such as a high workload, limited access to updated training, or insufficient institutional support. El-Rafie et al. (2018) emphasized that healthcare workers'

engagement in nutrition programs is strongly influenced by the intensity of capacity-building initiatives.

These results also underscore the importance of not only assessing knowledge levels, but also ensuring that attitudes align with community-oriented health service principles. A positive attitude reflects readiness to engage in effective interpersonal communication, provide nutritional counseling, and collaborate across sectors (Welter et al., 2022). However, this study did not analyze attitude differences by work location (e.g., Banda Aceh vs. Aceh Besar), age, or sex, leaving potential intergroup variations unexplored. Future studies with analytical designs are needed to identify specific determinants of attitudes. While the overall attitudes were favorable, targeted strengthening efforts, such as case-based training, regular supervision, and tailored risk communication tools, could help improve engagement among those with fair attitudes.

Practices Related to Stunting

The findings indicated that the majority of physicians (81,8%) demonstrated good practices in preventing and managing stunting, while 18,2% showed fair practices (Table 4).

Table 4. Practices of primary care physicians regarding childhood stunting

Practice Level	n	%
Poor	0	0,0
Fair	26	18,2
Good	117	81,8

This high proportion of good practices suggests that most physicians implemented standard procedures for growth monitoring and nutrition education. These findings are consistent with those of El-Rafie et al. (2018), who reported strong adherence to stunting management protocols among healthcare workers. Nevertheless, 18,2% of physicians who exhibit only fair practice warrant attention. This may reflect implementation barriers, such as inadequate facilities, limited access to hands-on training, and workload pressures. These insights highlight the need for practice-based capacity-building programs, field supervision, and health system adjustments that facilitate promotive and preventive services in health center.

In the health behavior theory, practices represent the tangible execution of knowledge and attitudes (Welter et al., 2022). However, as

noted by Ma et al. (2023), optimal practice does not automatically follow high knowledge and positive attitudes. Supportive environments including adequate infrastructure, technical training, and conducive work systems are essential. Thus, even well-informed and well-motivated physicians may struggle to perform optimally without systemic support.

This study contributes important contextual evidence from Banda Aceh and Aceh Besar, which are underrepresented in national literature. The finding that nearly one in five physicians did not demonstrate optimal practices underscores the need for operational reinforcement in primary care stunting interventions. This aligns with Sari (2021), who emphasized the importance of standardized child growth monitoring procedures for the early detection of malnutrition.

Although this study did not include inferential analysis, the descriptive findings suggest that system strengthening through routine case-based training, updated clinical guidelines, and performance-based monitoring could enhance physician practices in preventing and managing stunting.

Conclusion

The findings of this study indicate that the majority of primary care physicians in Banda Aceh and Aceh Besar possess favorable levels of knowledge, attitudes, and practices (KAP) in supporting stunting prevention efforts. These results highlight the potential strategic role of frontline physicians in delivering nutritional education, monitoring child growth, and conducting early interventions at the community level. However, it is important to note that this study employed a descriptive design and was geographically limited to two regions. Therefore, caution is warranted when generalizing these results to a broader population.

It is recommended that continuous training programs be implemented with a focus on enhancing the practical competencies of physicians in the early detection and management of stunting. The provision of standardized anthropometric equipment and development of integrated digital reporting systems are also critical. Future research should adopt analytical approaches, cover a broader geographic scope to identify specific determinants, and assess the influence of

physician characteristics on the effectiveness of stunting interventions. Furthermore, cross-sectoral collaboration and evidence-based policymaking rooted in local data are strategic steps to strengthen and sustain stunting reduction efforts.

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References

- Ahmed, N., Mohamed Sobhy Elsayed, D., & Mohamed Abdelrahman, B. (2023). Awareness of Maternal and Child Health Centers Nurses regarding Stunting among Children under Five Years. *Journal of Nursing Science Benha University*, 4(1), 577–590.
- Bukit, D. S., Keloko, A. B., & Ashar, T. (2021). Dukungan tenaga kesehatan dalam pencegahan stunting di Desa Tuntungan 2 Kabupaten Deli Serdang. *Tropical Public Health Journal*, 1(2), 67–71. <https://doi.org/10.32734/trophico.v1i2.7264>
- Carolina, O. (2021). Analisis pelayanan intervensi gizi spesifik integratif stunting di wilayah kerja puskesmas kecamatan pademangan jakarta utara. *Jurnal Medika Utama*, 3(1), 1372–1379.
- El-Rafie, M., Nesreen, M., & Shamaila, M. (2018). Knowledge, attitude and practice of health care providers at primary health care setting regarding stunting among Egyptian under five years. *The Medical Journal of Cairo University*, 86(March), 265–273. <https://doi.org/10.21608/mjcu.2018.55097>
- Erawati, N. K. (2020). Literatur review: Program mother smart grounding (MSG) dalam penanganan gizi stunting. *Jurnal Kesehatan Dr. Soebandi*, 8(1), 10–17. <https://doi.org/10.36858/jkds.v8i1.157>
- Jannah, M., & Diba, F. (2022). Hubungan

- pengetahuan, sikap dan tindakan pegawai dengan status gizi balita di Fakultas Kedokteran Universitas Islam Sumatera Utara. *Ibnu Sina: Jurnal Kedokteran Dan Kesehatan-Fakultas Kedokteran Universitas Islam Sumatera Utara*, 21(1), 1–8. <https://doi.org/10.30743/ibnusina.v21i1.139>
- Kalla, M. J. (2017). *100 Kabupaten/Kota Prioritas untuk Intervensi Anak Kerdil (Stunting)* (1st ed., pp. 5–7). Sekretariat Wakil Presiden Republik Indonesia.
- Kebede, G. G., Dawed, Y. A., & Seid, K. A. (2022). Child growth monitoring and promotion practice and associated factors among health care workers at public health facilities in south Wollo Zone, Northeast Ethiopia: a facility-based cross-sectional study. *BMC Nutrition*, 8(1), 99. <https://doi.org/10.1186/s40795-022-00597-6>
- Kemenkes RI. (2021). *Buku Saku: Hasil Studi Status Gizi Indonesia (SSGI) tahun 2021* (Edisi 1). Kementerian Kesehatan Republik Indonesia.
- Kodish, S. R., Farhikhtah, A., Mlambo, T., Hambayi, M. N., Jones, V., & Aburto, N. J. (2021). Leveraging the Scaling Up Nutrition Movement to Operationalize Stunting Prevention Activities: Implementation Lessons From Rural Malawi. *Food and Nutrition Bulletin*, 43(1), 104–120. <https://doi.org/10.1177/037957212111046140>
- Ma, L., Xu, H., Zhang, Z., Li, L., Lin, Z., & Qin, H. (2023). Nutrition knowledge, attitudes, and dietary practices among parents of children and adolescents in Weifang, China: A cross-sectional study. *Preventive Medicine Reports*, 35, 102396. <https://doi.org/https://doi.org/10.1016/j.pmedr.2023.102396>
- Mangundap, S. A., Amyadin, A., Tampake, R., Umar, N., & Iwan, I. (2022). Health Cadre Education on Providing Stunting Risk Family Assistance toward Children. *Open Access Macedonian Journal of Medical Sciences*, 10(G), 306–310. <https://doi.org/10.3889/oamjms.2022.8548>
- Miranda, A. V., Sirmareza, T., Nugraha, R. R., Rastuti, M., Syahidi, H., Asmara, R., & Petersen, Z. (2023). Towards stunting eradication in Indonesia: Time to invest in community health workers. *Public Health Challenges*, 2(3), e108. <https://doi.org/https://doi.org/10.1002/puh2.108>
- Muhdar, M., Rosmiati, R., Tulak, G. T., Saputri, E., & Susanti, R. W. (2022). Peran Petugas Kesehatan dalam Pencegahan dan Penanganan Stunting di Kabupaten Kolaka. *Jurnal Kesehatan Andalas*, 11(1), 32–38. <https://doi.org/10.25077/jka.v11i1.1930>
- Reñosa, M. D., Dalgligh, S., Bärnighausen, K., & McMahon, S. (2020). Key challenges of health care workers in implementing the integrated management of childhood illnesses (IMCI) program: a scoping review. *Global Health Action*, 13(1), 1732669. <https://doi.org/10.1080/16549716.2020.1732669>
- Sari, G. M. (2021). Early stunting detection education as an effort to increase mother's knowledge about stunting prevention. *Folia Medica Indonesiana*, 57(1), 70–75. <https://doi.org/10.20473/fmi.v57i1.23388>
- Shakhshir, M., & Alkaiyat, A. (2023). Healthcare providers' knowledge, attitude, and practice on quality of nutrition care in hospitals from a developing country: a multicenter experience. *Journal of Health, Population and Nutrition*, 42(1), 15. <https://doi.org/10.1186/s41043-023-00355-9>
- Welter, Christina, Jarpe-Ratner, Elizabeth, Bonney, Tessa, Pinsker, Eve, Fisher, Elizabeth, Deb, Nandini, Yankelev, Anna, Kapadia, Devangna, Love, Marsha, & Zandoni, Joseph. (2022). Evaluation Results From the Healthy Work Collaborative: A Cross-Sectoral Capacity Building Partnership to Address Precarious Employment. *Health Promotion Practice*, 23(5), 793–803. <https://doi.org/10.1177/15248399211069099>
- Zamir, S., Sarwar, R., Ahmed, S., Ali, S., & Tariq, U. (2021). Stunting Amongst Pakistani Children Under Five: Status of Knowledge, Attitude and Practice of Health Care Workers at Basic Health Units and Rural Health Centers in Raiwind, Lahore. *Journal of Sheikh Zayed Medical College*, 12(3), 22–27.