

REVIEW ARTICLE

Research trends in increasing cadre capacity in efforts to reduce stunting in Indonesia: A review

DOI: 10.29063/ajrh2024/v28i10s.39

Lisbet O. Manalu¹, Soenarnatalina Melaniani^{2*} and Ferry Efendi³

Doctorate Degree Program in Public Health, Faculty of Public Health, Airlangga University, Surabaya, 60115, Indonesia¹; Department of Epidemiology, Biostatistics, Population Studies, and Health Promotion, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia, Surabaya, 60115, Indonesia²; Department of Community Health Nursing, Faculty of Nursing, Airlangga University, Surabaya, 60115, Indonesia³

*For Correspondence: Email: soenarnatalina.m@fkm.unair.ac.id; Phone: +628165402532

Abstract

Stunting is a significant public health issue in Indonesia, characterized by a very high prevalence. The Indonesian government places utmost importance on prevention. Preventive measures and timely identification are crucial, particularly by trained personnel. The research aims to uncover patterns in the enhancement of cadre ability to mitigate the prevalence of stunting. A review was conducted using data from content analysis, which focuses on results from several studies published in health journals listed on Scopus. The search is conducted using Scopus, with the terms "cadre," "stunting," and "Indonesia" within 2018 to 2023. The research shows that increasing the capacity of cadres can be done by increasing knowledge, attitudes, motivation, skills, perceptions of effectiveness, self-efficacy, with training intervention methods, short courses and collaborative interventions with all parties for the entire community through cadres as the front line in reducing stunting as well. (*Afr J Reprod Health 2024; 28 [10s]: 368-375*).

Keywords: Cadre; capacity; stunting

Résumé

Le retard de croissance est un problème de santé publique majeur en Indonésie, caractérisé par une prévalence très élevée. Le gouvernement indonésien accorde la plus grande importance à la prévention. Les mesures préventives et l'identification rapide sont cruciales, en particulier par un personnel formé. La recherche vise à découvrir des modèles dans l'amélioration de la capacité des cadres à atténuer la prévalence du retard de croissance. Une revue a été réalisée à l'aide de données issues d'une analyse de contenu, qui se concentre sur les résultats de plusieurs études publiées dans des revues de santé répertoriées sur Scopus. La recherche est effectuée à l'aide de Scopus, avec les termes « cadre », « retard de croissance » et « Indonésie » entre 2018 et 2023. La recherche montre que l'augmentation des capacités des cadres peut se faire en augmentant les connaissances, les attitudes, la motivation, les compétences, les perceptions d'efficacité, l'auto-efficacité, avec des méthodes d'intervention de formation, des cours de courte durée et des interventions collaboratives avec toutes les parties pour l'ensemble de la communauté par le biais des cadres comme première ligne pour réduire le retard de croissance également. (*Afr J Reprod Health 2024; 28 [10s]: 368-375*).

Mots-clés: Cadre ; capacité; retard de croissance

Introduction

Stunting is a prevalent issue of persistent malnutrition that underdeveloped nations are confronted with. Indonesia has established a target of decreasing the prevalence of stunting and underdevelopment to 14%¹. According to the findings of the 2021 Indonesian Nutrition Status Survey, the nationwide prevalence of stunting has declined from 27.7% in 2019 to 24.4% in 2021, representing an annual reduction of 1.6%. Nowadays, the incidence of stunting in Indonesia is

somewhat superior in comparison to other nations. Myanmar has a greater percentage (35%) compared to Vietnam (23%), Malaysia (17%), Thailand (16%), and Singapore (4%)².

Rural Guatemala exhibits one of the most elevated rates of chronic child malnutrition (stunting) globally. Despite substantial endeavors to expand evidence-based nutritional treatments, no advancements have been achieved. The existing body of research indicates that a significant issue hindering the effectiveness of the program is the insufficient assistance provided by supervisors to

frontline field workers. Community-based quality improvement programs in regions with high rates of stunting include offering audit and feedback assistance, along with giving computerized task lists, performance dashboards, and direct feedback sessions to frontline health nutrition practitioners³. The dual occurrence of malnutrition is a public health phenomenon that is linked to a range of socio-ecological conditions. A comprehensive strategy is essential to overcome the underlying factors of malnutrition in all its manifestations and across all phases of life³. This may be implemented not just by one position, but also by cadres, who have a significant impact. In 2021, the Indonesian government has devised a plan to expedite the decrease of stunting by engaging health professionals. This will be done via a family approach program that aims to assist families that are at risk of stunting. The Family Support Team is a comprehensive program that encompasses counseling, enabling referral services, and facilitating the provision of social support. Its primary objective is to enhance the accessibility of information and services for families and/or families at risk of stunting¹.

Although child nutrition in Thailand has significantly increased, stunting remains prevalent among children from the northern hill tribes. Thailand has implemented a primary health care plan since 1979, which incorporates both a community-driven approach ("bottom-up") and a central government approach ("top-down"). Village health volunteers (VHVs) assist community health workers (CHWs) in their efforts to reach out to the population. Evidence from Thailand indicates that there is a restricted level of contact between local people and community health workers. The conspicuous absence of communication within the community highlights the delicate nature of the interaction between the village community and the health system⁴. The research by Alarape *et al*⁵ sheds light on the significant prevalence of stunting among under-five children in Nigeria, emphasizing the regional disparities and advocating for tailored interventions to address the public health implications of stunting in the country.

In 2021, the Indonesian government has devised a plan to expedite the decrease of stunting by engaging health professionals via a family-oriented initiative that specifically assists

families at risk of stunting. The Family Support Team comprises a range of interventions, such as counseling, allowing access to referral services, and enabling the provision of social support. One of its objectives is to enhance the accessibility of information and services for families, particularly those at risk of stunting¹. The government, in its role as a policy maker, must promptly and pragmatically make choices to foster an environment that empowers the community in preventing stunting. Subsequent studies stemming from prior investigations⁴. The objective is to analyze the factors leading to stunting and its repercussions, as well as explore several approaches to community empowerment that may be implemented across different areas in Indonesia to mitigate the rise in stunting cases.

According to researchers, the Family Assistance Team's efforts to prevent stunting are very effective due to their diligent work and fervor in achieving the set goals⁶. This is seen by some participants consistently engaging in stunting prevention initiatives, including both general efforts and specific interventions aimed at potential brides, expectant moms, postpartum women, and 0-59 months children. The provided goals may serve as a source of inspiration and excitement for cadres to exert efforts in preventing stunting. Early intervention is crucial in preventing stunting in children, thus highlighting the importance of cadres in this preventive effort. Given this context, our team of researchers undertook a comprehensive analysis of scholarly literature about stunting in Indonesia. Our objective was to identify the prevailing patterns seen among community health workers in their endeavors to mitigate the prevalence of stunting.

Methods

This research follows the approach of content analysis, specifically focusing on results from many studies published in health journals listed on Scopus (<https://www.scopus.com>). The study methodology used was similar to that utilized by Susetyarini and Fauzi⁷.

Search strategy

The data were obtained by content analysis of health publications. The whole articles were sourced from

health journals included in the Scopus database. A search using Scopus with the keywords "cadre" "stunting" and "Indonesia" found 18 documents, but there were 12 related articles with 8 articles that could be openly accessed and 4 articles that could not be accessed.

Study selection criteria

To meet the requirements for inclusion in this journal, articles selected must be in English and published between 2019 and 2023. The screening process, encompassing title screening, abstract screening, full-text screening, and data abstraction, was conducted to ensure an unbiased selection.

Data extraction and quality assessment

The author and reviewer team were involved in data extraction, including the author, year, where the research was conducted, and type of research, including increasing the capacity of cadres as family support team cadres in efforts to reduce stunting.

Results

Data collection for all research involving the administration of the number of article publications that describes how often research was conducted in a certain period. Referring to Table 1, the review article on increasing cadre capacity was taken from 2018, all articles were taken from health journals registered with Scopus.

Discussion

Central and regional governments must enhance their knowledge and ability to effectively address stunting. To address this issue effectively, it is crucial to articulate the specific obstacles and shortcomings in nutrition expertise and education, and thereafter devise approaches to enhance the proficiency of nutritional therapists in many public sectors⁸. Proper surveillance and accurate data are crucial for enhancing the overall efficacy of initiatives aimed at addressing stunting⁹. Cadres are individuals who volunteer in the field of public health, selected by locals based on their expertise, honesty, dedication, and strong commitment to enhancing public health. They also play a crucial part in formulating measures to reduce stunting. Cadres often get training to discern individual and

communal health concerns. Thus, they have the ability to enhance well-being, provide guidance, and direct medical issues to healthcare establishments. Continuous training is provided to cadres to ensure the maintenance and enhancement of their knowledge and skills in serving society. This is strongly supported by research⁹ namely, training to increase knowledge significantly and consistently can help increase cadres' knowledge.

The Research¹⁰ this study examines the role of communication in interprofessional cooperation as a means to address stunting in children under the age of five. The study found a significant relationship between communication and self-efficacy, with a p-value of 0.027. In figure 1 we can see about an effective health worker has extensive knowledge, self-efficacy attitudes, and effective collaborative communication skills, which contribute to the prevention of stunting and promote inter-professional teamwork. This study demonstrates that the acquisition of information, the development of positive attitudes, the enhancement of self-efficacy, and the improvement of collaborative communication all contribute to the promotion of interprofessional cooperation in addressing stunting in children under the age of five. Enhanced understanding, positive attitudes, and strong convictions about interprofessional cooperation directly correlate with improved execution of interprofessional collaboration¹¹.

Meanwhile, around 47.66% of the respondents showed moderate drive, whereas 39.12% exhibited strong motivation. The amount of education, marital status, and age have a significant impact on this motivation, with a significance level of 0.0514. The study findings indicate that in order to prevent and identify early-stage stunting in West Java, it is necessary to enhance the role and actions of health professionals. Nevertheless, the motivation of cadre personnel has a significant impact on their performance in both domains¹². The role of communicator and motivator for cadres in the field influences specific nutritional interventions as a strategy to reduce stunting¹². The government has established a family aid team including midwives, family planning cadres, and PKK cadres. Several elements impact the performance of the family assistance team, particularly the cadres, as they carry out their tasks. These factors include age, education, experience, training, knowledge, skills, motivation, compensation, support system,

Table 1: Distribution of research results in Indonesia on increasing the capacity of cadres in reducing stunting

Author, year)	Location of the Study/Object	Methodology	Research theme	Type of Intervention	Cadre Capacity	P-value/effect/result
Farid Agushybana, et al, 2018.	Central Java, Semarang, Indonesia	The study used a qualitative method and focus group discussions for data collection.	Describing the causes and effects of stunting and exploring community empowerment models for stunting prevention.	The interventions included stunting prevention training, health promotion programs.	Training for cadres of childbearing age and health promotion programs for prospective brides at least three months before marriage.	Strong and systemic multi-sectoral collaboration is required to reduce stunting quickly and effectively.
Devi Savitri Effendy, et al, 2020.	Southeast Sulawesi Province, Indonesia	The study used mixed effects models to analyse the data, adjusting for clustering within sub-villages and baseline characteristics of the participants.	Maternal and child nutrition, nutrition education	Nutrition education intervention	Increasing cadre knowledge	The nutrition education intervention had a positive impact on improving dietary diversity score and children's anthropometry
Rina Tampake, et al, 2021	Tomini Community Health Center, Palu, Indonesia	Quasi-experimental non-randomized pre-and post-test only control design	Public Health Education and Training	Cadre Training on Early Detection of Stunting in Toddlers	Knowledge, attitudes, and skills in detecting stunting and risk factors for stunting in children under-five	Pre-post-test p-values for knowledge, attitudes, and skills were all 0.000, indicating statistical significance ($p < 0.05$)
Ahmad Darajat, et al, 2020.	Banten, Province Central Government Area, Serang, Indonesia	Cluster randomized trial	Infant and young child feeding	Intensive intervention package of interpersonal counselling.	culturally training for all community trough cadre	This study provided an approach for prevention of stunting that can be basic evidence for health-care policy to improve prevention programs on stunting with the local community and widely provide culturally training for all community trough cadre as a first line of the health-care system.

Athanasia Budi Astuti, et al, 2021.	Klaten, Central Java, Indonesia.	The study utilized a quasi-experimental pre-test post-test design involving 90 mothers with children under two years and 30 health cadres. Data analysis was done using t-tests	The research focused on the effectiveness of the IPC Program on improving attitudes towards stunting among mothers and health cadres.	The study implemented an Interprofessional Collaboration (IPC) Program involving doctors, nurses, midwives, nutritionists, and sanitarians providing health education and counseling on stunting short course	Attitude health cadres towards stunting	The IPC Program significantly improved the attitudes of mothers and health cadres towards stunting
Tri Siswati, et al, 2022.	Yogyakarta, Indonesia	Pre-test post-test design with one group	Increasing cadres' knowledge in reducing stunting	capacity building program which aims to increase the knowledge of health cadres	attitudes, perceived effectiveness, and self-efficacy	The short course significantly increased cadres' understanding of CGM, CDM, and IYCF, as well as increasing their effective attitudes, perceived effectiveness, and self-efficacy
Wenang S., et al, 2022	Bali, Indonesia	This research methodology is a quantitative study with a pre-test and post-test design	increasing cadres' knowledge to reduce stunting in rural areas.	capacity building program which aims to increase the knowledge of health cadres	knowledge	The results showed that the participants improved their knowledge in webinars I and III (p-value 0.001). There was no significant improvement in the participants' knowledge in webinar II (p-value 0.251)
Hasriani, et al, 2023.	Soppeng Regency, South Sulawesi, Indonesia	univariate and bivariate tests to assess the effectiveness of the treatment and compare knowledge and skills between groups.	Early detection of stunting toddler development and the role of cadres in addressing this issue.	The intervention likely involved training and education programs for cadres and mothers of toddlers.	Knowledge and skills of cadres in early detection of stunting toddler development.	There was a difference in the skills of the cadres (p=0.000)

environment, and government concern. This is also a constraint of research conducted by Basrowi, RW, et al⁹.

This study provides an approach to stunting prevention by increasing cadre capacity which can become basic evidence for health service policies to improve stunting prevention programs with local communities through cadres as the front guard of the health service system^{11,13}. From Figure 1 we can find that the types of intervention for cadres are training, short courses, cadre counseling training, and interpersonal collaboration. This intervention can increase cadre capacities such as attitudes, skills, motivation, perceived effectiveness, self-efficacy, knowledge, communication, culture at work, ability to handle tasks in the field. Health professionals should educate cadres, who are an extension of health workers in the community, about stunting prevention¹⁴.

According to Gusti Ayu Ketut, et al¹⁵ it was stated that increasing the capacity of the family assistance team to reduce stunting rates was also implemented in Bali, and the targets given could also be useful for the family assistance team as motivation and enthusiasm in implementing stunting prevention efforts. Early initiation is crucial for the prevention of childhood stunting. Therefore, the involvement of the family support team, particularly cadres, is crucial in mitigating stunting since cadres are community-based volunteer health professionals. Additionally, it can increase their proficiency in providing counseling services¹⁶.

Research on cadres in Indonesia aims to reduce stunting by focusing on enhancing their knowledge, skills, and capacity. This includes coordinating with government policies, providing awards to cadres, and implementing various activities to promote behavioral changes among cadres, who serve as volunteer health workers. Addressing the specific danger of stunting in Indonesia, as shown by a study conducted in Parigi Regency. Enhancing the training of health cadres at the Tomini Health Center, Parigi Moutong Regency, improves their knowledge, attitudes, and abilities in identifying early signs of stunting and understanding its risk factors¹⁶. In Bangladesh, a similar initiative is underway to combat stunting. This involves using volunteer field health workers as frontline providers of health services. The digital health intervention equips Bangladesh field workers

with netbook computers including eLearning courses and e-Toolkits¹⁷. These resources cover many themes such as family planning, maternity, infant, and child health, aiming to enhance the knowledge and abilities of field workers¹⁷.

Interprofessional cooperation is a very effective approach for enhancing the attitudes of mothers and health cadres towards stunting. By focusing on strengthening cadre capacity, efforts to decrease stunting may be strengthened, leading to more successful stunting reduction initiatives¹⁰. Enhancing the knowledge of cadres in Palu involves several educational approaches such as lectures, question and answer sessions, brainstorming, and the use of booklets/training modules and demonstrations, similar to the techniques used in Klaten¹⁸. Technological advancements enhance initiatives to enhance the knowledge and expertise of personnel in South Sulawesi. This is facilitated through the utilization of Android, which serves as an effective educational and alternative platform for both personnel and parents to monitor and detect early signs of children's growth and development¹⁹.

The efforts made towards cadres are not only about knowledge but also research²⁰. In Southeast Sulawesi, cadres were trained in counseling skills for 6 months by cadres training their counseling communication skills in homes targeted at stunting risk, this was conveyed and had the potential to be adapted to increase the capabilities of cadres. Communication is a force that can ensure a program is implemented well. Interventions related to communication, especially effective communication with cadres, especially changes in social communication and behavior using various platforms, can be implemented effectively²⁰. It emphasizes the importance of providing comprehensive cultural training to the entire community through cadres, who act at the forefront of the health service system, particularly those involved in reducing stunting in Indonesia¹³.

Several research results in Indonesia on increasing cadre capacity as mentioned in Figure 1 show that the government in its efforts to reduce stunting is not only moving through health workers but also through volunteer workers who are more mobile and in contact with the community, using a comprehensive approach, which harmonizes political and policy commitment, government and cross-sectoral involvement, and human resource competence. Based on these approaches and several

challenges faced in implementing interventions such as the ineffectiveness of educational activities, the need for counseling/assistance programs by cadres, and the limited availability of data that supports stunting reduction interventions²¹.

The strength in this research shows the extent of research related to interventions to increase cadre capacity to reduce stunting rates. Increasing cadre capacity can be done by increasing knowledge, attitudes, motivation, skills, perceptions of effectiveness, self-efficacy, with training intervention methods, short courses and also interventions collaborative with all parties for the whole community through cadres as the front guard in reducing stunting. The limitations of this research are that the focus is on Indonesia, so further research is needed that is more advanced and compares the approaches taken to increase cadre capacity. The limitations from the methodology side are that the review study uses secondary data, further study may apply intervention based on study to get primary data.

Conclusion

This research shows the extent of research related to interventions to increase cadre capacity to reduce stunting rates. Increasing cadre capacity can be done by increasing knowledge, attitudes, motivation, skills, perceptions of effectiveness, self-efficacy, with training intervention methods, short courses and also interventions collaborative with all parties for the whole community through cadres as the front guard in reducing stunting.

Authors contribution

Lisbet Octovia Manalu : conceptualized the study, collected and analysed the data
 Soenarnatalina Melani: designed the study, designed the methodology
 Ferry Efendi: wrote the introduction, discussion and edited the paper.

Acknowledgement

The primary author expresses gratitude to the BPI scholarship (Indonesian Education Scholarship) for financially supporting their research endeavors in pursuing a PhD in Public Health at Airlangga University.

References

1. Wardoyo H. Panduan pelaksanaan pendampingan keluarga dalam upaya percepatan penurunan stunting di tingkat desa/kelurahan. Vol 1. 1st ed. Direktorat bina penggerakan lini lapangan badan kependudukan dan keluarga berencana nasional; 2021.
2. Kementerian kesehatan republik Indonesia. Buku saku hasil studi status gizi Indonesia (SSGI) Tahun 2022. *Kemendes RI*. Published online 2022:1-14. <https://www.litbang.kemkes.go.id/buku-saku-hasil-studi-status-gizi-indonesia-ssgi-tahun-2021/>
3. Juarez M, Dionicio C, Sacuj N, Lopez W, Miller AC, and Rohloff P. Community-based interventions to reduce child stunting in Rural Guatemala: A quality improvement model. *Int J Environ Res Public Health*. Published online 2021. doi:10.3390/ijerph
4. Roesler A, Smithers LG, Winichagoon P, Wangpakapattanawong P, and Moore V. Health workers' and villagers' perceptions of young child health, growth monitoring, and the role of the health system in Remote Thailand. *Food Nutr Bull*. 2018;39(4):536-548. doi:10.1177/0379572118808632
5. Alarape K, Yusuf OB, Akinyemi JO, Samuel FO, Morhason-Bello IO, Salami KK, Obisesan O, Ilori T, Aderinto AA, Alada A, Jegede AS, Fawole O, Kana I, Solanke O, Suleiman J, Okara D, Adebisi A, Abdullahi AM, Ejiade OO, and Adewole IF. Prevalence and patterns of anthropometric failure among under-five children in Nigeria: Evidence from the National nutrition and health survey, 2018. *Afr J Reprod Health*. 2022;26(11 Special Issue):54-61. doi:10.29063/ajrh2022/v26i11s.5
6. Agushyana F, Pratiwi A, Kurnia PL, Nandini N, Santoso J, and Setyo A. Reducing stunting prevalence: causes, impacts, and strategies. *BIO Web Conf*. 2022;54:1-6. doi:10.1051/bioconf/20225400009
7. Susetyarini E, and Fauzi A. Trend of critical thinking skill researches in biology education journals across Indonesia : From research design to data analysis across Indonesia : from Research Design to Data Analysis. *International Journal of Instruction*. 2020;(January). doi:10.29333/iji.2020.13135a
8. Wenang S, Rismawati I, Febrianti L, Susyanto BE, Puspita G, Wahyuni A, Dewi A, Sugiyo W, Sutantri, Nahdiyati D, and Nirwansyah AW. Strengthening community roles to reduce stunting in COVID-19 pandemic in Indonesia rural areas: Capacity building program for cadres and local government. *Bali Medical Journal*. 2022;11(3):1730-1734. doi:10.15562/bmj.v11i3.3753
9. Basrowi RW, Dilantika C, Sitorus NL, and Yosia M. Impact of Indonesian Healthcare Worker in Stunting Eradication. *IJCOM*. 2022;2(2):107-113. doi:<https://doi.org/10.53773/ijcom.V2i2.66.107-13>
10. Astuti AB, Mulyanti S, and Diyono. The effectiveness of the interprofessional collaboration (IPC) program on the attitude of mothers and health cadres on stunting at Puskesmas Karanganyom Klaten Central Java Republic of Indonesia. *Electronic Journal of General Medicine*. 2021;18(6). doi:10.29333/ejgm/11315

11. Siswati T, Iskandar S, Pramestuti N, and Raharjo J. Effect of a short course on improving the cadres knowledge in the context of reducing stunting through home visits in Yogyakarta, Indonesia. *Int J Environ Res Public Health*. Published online 2022:1-10. doi:10.3390/ijerph19169843
12. Afifa I. Kinerja kader dalam pencegahan stunting : Peran lama kerja sebagai kader, pengetahuan dan motivasi (The cadre performa in stunting prevention : Rule of working duration as cadre, knowledge, and motivation. *Jurnal Kedokteran Brawijaya*. 2019;30(4):336-341. doi:http://dx.doi.org/10.21776/ub.jkb.2019.030.04.19
13. Darajat A, Sansuwito T, Amir MD, Hadiyanto H, Abdullah Dessy, Dewi NP, and Umar E. Social behavior changes communication intervention for stunting prevention: A Systematic Review. *Open Access Maced J Med Sci*. 2022;10(G):209-217. doi:10.3889/oamjms.2022.7875
14. Nuzula F, Oktaviana MN, and Yunita RDY. Pendidikan kesehatan terhadap kader tentang intervensi gizi spesifik dalam pencegahan stunting. *The Indonesian Journal of Health Science*. 2020;12(2):209-215. Accessed April 30, 2024. <https://jurnal.unmuhjember.ac.id/jurnal.unmuhjember.ac.id/index.php/TIJHS/article/view/4877/3061>
15. Widnyani GAKP, Oktaviani NPW, Adiputra IMS, and Trisnadewi NW. The role of the family assistance team (TPK) in preventing stunting in toddler in the community. *Indonesian Journal of Global Health Research*. 2023;5(2):373-380. doi:https://doi.org/10.ijghr.v5i2.1632
16. Muslihah N, Habibie IY, Maulidana AR, Kurniasari ND, Farida B, and Harini R. Evaluasi model pelatihan perubahan perilaku pada tim pendamping keluarga untuk meningkatkan pengetahuan gizi dan ketrampilan konseling di Propinsi Jawa Timur. *Media Gizi Indonesia (National Nutrition Journal)* 2022SP(1): 108–185. 2022;3(1):180-185. doi:https://doi.org/10.20473/mgi.v17i1SP.180-185
17. Limaye RJ, Sara AB, Ahmed N, Ohkbuo S, Deka S, Gross CM, and Arnold R. Enhancing the knowledge and behaviors of fieldworkers to promote family planning and maternal, newborn, and child health in Bangladesh through a digital health training package: Results from a pilot study. *Int Q Community Health Educ*. 2020;40(2):143-149. doi:10.1177/0272684X19861866
18. Tampake R, Arianty R, Mangundap SA, Emy B, and Sasmita H. The effectiveness of training on improving the ability of health cadres in early detection of stunting in toddlers. *Open Access Maced J Med Sci*. 2021;9(E):373-377. doi:10.3889/oamjms.2021.6067
19. Hasriani, Salmah AU, Masni, Moedjiono AI, Hidayanty H, Wahiduddin, and Mallongi A. Analysis of knowledge and skills of cadres in early detection of stunting toddler development in Soppeng Regency, Indonesia. *Pharmacognosy Journal*. 2023;15(5):833-838. doi:10.5530/pj.2023.15.159
20. Effendy DS, Prangthip P, Soonthornworasiri N, Winichagoon P, and Kwanbunjan K. Nutrition education in Southeast Sulawesi Province, Indonesia: A cluster randomized controlled study. *Matern Child Nutr*. 2020;16(4):1-14. doi:10.1111/mcn.13030
21. Agushyana F, Pratiwi A, Kurnia PL, Nandini N, Santoso J, and Setyo A. Reducing stunting prevalence: Causes, impacts, and strategies. In: *BIO Web of Conferences*. Vol 54. EDP Sciences; 2022. doi:10.1051/bioconf/20225400009.