# DEVELOPING A MODEL OF AN INTEGRATED INTERVENTION TO ACCELERATE STUNTING REDUCTION

## Hariani<sup>1</sup>, Abd Hady J<sup>2</sup>, Muh Nur<sup>3</sup>

<sup>1,2,3</sup> Nursing Department, Health Polytechnic of Makassar, Indonesia

\*Correspondence Author: hariani@poltekkes-mks.ac.id

## Abstract

Background: Today, Stunting have been a global/ international, regional, national and local problem include in Indonesia. It is the multidimensional problem includes health and nutrition social, culture, historic-heredity, biology, behavior pattern, environment, food/ agriculture, economy, policy, and so on. Therefore, they need an integrated intervention model that involved nutrition-health and socio-culture approach to prevent, diminish and combatting it. Objective: This research aims to explore about developing a model for integrated intervention methods of nutrition. social, and faith healing (health and culture) to prevent and reducing stunting. Method: A Qualitative descriptive as research type. Design by analytical, exploratory, explanatory, phenomenological, and comparative and evaluative. The location at South Bontonompo District, Gowa Regency. The purposive sampling used to take 100 sample of 100 head families (household). Primary and secondary data sources. Data collected by literature study, observation, questionnaires, interviews, FGD, documentation. Likert scale research instrument. A Qualitative used to analysis it. Result, found a development model for integrated intervention to prevent and reducing stunting include five layers, include the social, faith healing, and nutrition intervention method and also kind of them component (Layer 1); parameters indicator and instruments (Layer 2); Involving amount parties as like Government/ institution and related-minister, Local government/ related-instance, private, university, non-government organization (NGO), professional, community have capacity and capability, and other stakeholders (Layer 3); Apply SWOT analyses (Layer 4); Evaluation (Layer 5).

Keywords: Model, development, intervention, stunting.

## Background

Stunting represents a multidimensional problem in children, including malnutrition in the first 1000 days of life (HPK), nutritional status of pregnant women, low birth weight of babies (BBLR), parenting patterns, biology, health problems and disease infections, food insecurity, access to food sources and nutritious are limited, sanitation and water, heredity (biology), parenting patterns, culture, environment, socio-economic, poverty, political policies, and others as causal factors (Beal T *et al.*, 2018; Gebru KF *et al.*, 2019; Wicaksono *et al.*, 2020; Hariani *et al.*, 2022), and give multidimensional impacts on both health and non-health (socioeconomic) (Bappenas, 2018; Kemenkes RI, 2019; Liem *et al.*, 2019; Wilson-Jones *et al.*, 2019; WHO, 2020).

Stunting be one of the triple burdens of maternal and child health problems at universal or global level (Global Nutrition Report, WHO, 2020; Ministry of Health 2021). A child stunted if his height not the same with the height standard in the normal population at the same age and gender (WHO, 2020). According to the Global Nutrition Report (2018) and the World Health Organization (WHO, 2019, 2020), globally children-stunted (under five years) throughout the world estimated have prevalence reaches 149.2-150.8 million (or 22.2%). Highest prevalence in South Asia (38.9%). Although have a decline from Year 2000 to 2017 in many regions in the world, but the average annual reduction rate (AARR) was only 2.3%, still below the required 3.9% (Nurliyana *et al.*, 2020). Specifically in Indonesia, based on the study results at Year 2021 by the Nutritional Status of Indonesian Toddlers (SSGI) of Ministry of Health, the national stunting prevalence shows improvement with a decreasing trend of 3.3% from 27.7% in 2019 to 24.4% in 2021. Almost the majority of 34 provinces showed a decrease, except 5 provinces showed an increase (Kemenkes, 2021). However, the reduction not met a target expected. On that basis, the application of intervention methods becomes a necessity, urgent, vital and strategic in overcoming global, national and local problems.

Base on the crucial problem above mentioned it, WHO and various state governments including Indonesia have taken several strategic steps. First, establishing stunting as one of the Sustainable Development Goals (SDGs) targets or its goals to eliminating all forms of malnutrition by 2030 and to achieving food security. The target is to reduce stunting rates by 40% by 2025 (Kemenkes RI, 2018). Second, implementing two large frameworks of stunting intervention program. namely Specific Nutrition Intervention (contributing 30%) and Sensitive Nutrition Intervention (contributing 70%). (Kementerian BPPN/Bappenas, 2018; Hariani et al., 2022). At Indonesia, the Government together with its institutional established 5 (five) pillars of stunting prevention, namely: commitment and vision of the country's highest leadership; national campaign; convergence and coordination and consolidation of national-regional and community programs; encourage "Nutritional Food Security" policies; and monitoring and evaluation. And also includes 4 agendas: (1) Advocacy, campaigns, socialization and IEC behavior change; (2) Strengthening cross-sector coordination; (3) Development of specific and sensitive nutrition programs that are proven to be effective; (4) Building a database to accelerate nutrition improvement. Handling stunting is based on policies and programs as well as strategies for determining district/city priority locations in stages (Izwardi, 2019; Widianto, 2019).

Its problematic phenomenon, even though the Government/relevant ministries have implemented cross-sectoral nutrition intervention methods in the National Strategy for the acceleration of stunting prevention for the 2018-2024 period which involves 23 related ministries (Izwardi, 2019; Widianto, 2019; Kemenkes, 2020, 2021), but the stunting prevalence rate is still high and has not achieve a reduction target yet. This means that the intervention method has not been effective to preventing, controlling and significantly reducing it. Likewise, the general objectives set out in the National Strategy have not fully maximized both the stunting prevention priorities of the government and society at all levels, awareness and behavior change of

community to prevent, and to strengthen convergence, coordination and consolidation any programs and activities at central, regional and national, and village level.

In South Sulawesi Province, have 35.6% that indicate fourth position of highest prevalence rate at whole Indonesia. There are 11 from all 23 regency/ town declared as areas with the highest incidence of malnutrition and stunting include Enrekang, Bone, Selayar Islands, Pinrang, Gowa, Pangkep, Tanah Toraja, Sinjai, Jeneponto, North Toraja and Takalar. They be focal points for accelerating stunting reduction. In Gowa Regency specifically, based on Riskesdas (basic health research) study results has 44,5%. This statistic put it at fourth highest stunting prevalence rate in South Sulawesi, and even above the national average prevalence rate in Indonesia, namely 30.8% (Balitbang Kemenkes Republik Indonesia, 2019, 2021). Even though have a decline in 2019 but it is still high. This reality is in contrast against with 70.14 Human Development Index (HDI) of the growth rate owned Gowa, so that be one of the priorities for the stunting reduction acceleration program (Halim, 2022; Lukman and Awaru, 2023).

Today, the reality indicated that even though the Gowa Government has been implemented specific and sensitive nutritional interventions over the last few years, but the policy-program application is not be effective. This suitable with finding at Year 2021 by Hariani et al., that the implementation of the two broad frameworks of nutrition intervention methods still faces various challenges, implementation of policies and programs are still very less, seasonal and inconsistent, many conflicts of interest. The next study in further at 2022 found three types of intervention methods that need to optimize the prevention and reduction of stunting, namely the faith healing method combined cultural and health, and social (micro, mezzo and macro) intervention, and the synergy of specific and sensitive nutritional intervention methods (Hariani et al., 2022). All these findings provide a strongly direction about its important to developing an integrated intervention model in further.

#### Method

A descriptive qualitative as research type (Sugiyono, 2020). Design by analytical, exploratory, explanatory, phenomenological, and comparative and evaluative (Cresswell, 2016 in Hariani et al, 2022). Location at South Bontonompo District, Gowa Regency. Sample amount 100 head families based on the purposive sampling. Quantitative and qualitative as kind of data, primary and secondary as sources. All data need collected by literature study, observation, questionnaires, interviews, focus group discussion (FGD), documentation. Likert scale instrument. A qualitative to analysis (Miles & Huberman, Creswell in Hariani et al, 2022).

## **Result and Discussion**

Based on the results: First, application of nutritional intervention methods (specific and sensitive): 16.5% high, 30.5% medium, and 53.0% low category. Second, Aapplication of social intervention (micro, mezzo, macro): 10.0% high, 25.0% medium, 65.0% low. Third, the faith healing (culture of health) intervention: 2.0% high, 15.0% medium, 83.0% low. Fourth, integrated intervention methods: 9.5% high, 23.5% medium, 67.0% low category. This formulation results shows that the average achievement for all is 33.0% (high + medium categories), so that they classified as lower. Based on these facts, an integrated intervention model for preventing and reducing stunting can be developed as shown in Figure 1.



Source: Research result and analysis, 2023 Figure 1. A Model Integrative Intervention to Prevent and Reduction of *Stunting*,

Figure 1 shows three important strategic steps: 1. Formulating health cultural values into the intervention policies and programs implementation; 2. Formulate a social intervention model (micro, mezzo, macro); 3. Internalize and synergize policies and programs on nutrition (specific and sensitive) intervention methods with social and faith healing methods. For these purposes and objectives, the model contains the substance of 5 (five) layers (Layers), namely: Layer (L) I shown: The inverted pyramid triangular shape at the core represents an integrated intervention method that ties together three cycles and stages of intervention continuously and becomes one unity that is integral to each other. Layer 2: Determining indicators as measurement parameters for each type of intervention. The indicators used must be adjusted to individual, family, group,

community need, include any instruments used such as socialization, advocacy, coaching, education, training, therapy, and others. Layer 3: Involvement of the Central and Local Government/related agencies, include private sector, universities, NGOs, professional institutions and other stakeholders. Layer 4: Application of SWOT Analysis. Layer 5: regularly, integrate, comprehensive, and sustainable in monitoring and evaluation.

The findings are in accordance with the concept and theory of development put forward by Seels & Richey (Maydiantoro, 2021) and Setyosari (Rayanto and Sugiharti, 2020) about the using a scientific knowledge in learning process and systematic to develop, validate, produce a products or designs, useful strategies, methods or models. Likewise, the concept and theory on development model developed by Dick and Carry is called ADDIE (Analysis, Design, Development, Implementation, and Evaluations) (Maydiantoro, 2021; Rayanto and Sugiharti, 2020; Mulyatingsih. 2021). Development contains activities to realize product designs that have previously been created. At the previous stage in this study, have been prepares a conceptual framework, then realized into a product that is ready to be implemented as shown in Figure 1 about development an integrated intervention model for stunting prevention and reduction. This stage requires instruments to measure model performance.

The development an integrated intervention model for stunting prevention and reduction as in Figure 1 is in accordance with proposed by Sugyono (2020) about the using a process to develop and validate a product model, translate or explain design specifications, produce learning materials, deepen, expand and perfect existing knowledge, theories, actions, so that they become more effective and efficient, and updating existing products so that become more practical, or creating new products (which did not previously exist). This is suite with the development nature as a conscious, planned, directed, organized and responsible effort in developing a model of integrated intervention for stunting.

The design as shown in Figure 1 is a model that have been developed previously study. This is in accordance with stated by Seals and Richey (Okpatrioka, 2023) about development research as a systematic study of the design, development and evaluation of learning programs, which processes and products must satisfy the criteria of validity, practicality and effectiveness. So that this development become a process of learning and the using systematically scientific knowledge to develop a model design. It also represents a process or steps of Research and Development (R&D) to develop and produce a new product or improve an existing product to test the effectiveness of the product so that the product can be accounted for. Therefore, this development research type can be a link or breaker of gaps between basic and research application (Okpatrioka, 2023), and also a method to developing and testing previous methods (Amali et al, 2019).

This model a stunting integrated intervention have been developed accordance with the research and development steps proposed by Thiagarajan which consist of define (definition stage), design (planning stage), development stage, and dissemination (distribution stage) (Sugiyono. 2020; Okpatrioka, 2023). All these steps or development process include studying product findings in the form of models being developed, developing it based on these findings, conducting field trials according to the setting a product will be used, and revising the field test results (Sugiyono. 2020). Besides that, the process accordance with the two activities in the development stages proposed by Thiagarajan, namely expert appraisal and developmental testing. The expert appraisal stage is a technique for validating or assessing the feasibility of a product design, getting suggestions for material improvements. Meanwhile, developmental testing is the activity of testing product designs on actual target subjects to obtain direct input in the form of responses, reactions, comments, which during this trial get from the target users of

the model were sought. The test results are used to improve the product after repaired, and tested again until obtained effective results (Mulyatingsih. 2021).

The development on stunting integrated intervention model in Figure 1 accordance with Sugiyono's (2020) about four research and development levels, namely: at Level 1 (the lowest) is research to produce designs, but not followed up by making products or test it; at Level 2, researchers do not conduct research but directly test existing products; at Level 3, researchers conduct research to develop (revise) existing products, create revised products and test their effectiveness the product; at Level 4, research to create new products and test the effectiveness it. This means that the results of the assessment carried out in the integrated intervention model developed to preventing and reducing stunting are satisfy or meet 3 and 4 levels.

All the process stages in accordance with the development model by Borg and Gall (Maydiantoro, 2021) which includes 10 implementation steps: (1) Research and data/ information collection, (2) Planning, (3) Developing a product draft (develop preliminary form of product), (4) field trials (preliminary testing), (5) refine the initial product (main product revision), (6) field trials (main testing), (7) Perfect the resulting product field test (operational product revision), (8) Field implementation test (operational), (9) Final product revision, and (10) Dissemination and implementation. Furthermore, the development of an integrated intervention model for preventing and reducing stunting through a combination of social, faith healing (culture and health), and nutritional (specific and sensitive) intervention methods is in accordance with Sukmadinata's opinion about the meaning of development as a process or steps to develop a new product or improve an existing product, which can be accounted for (Junaidah. 2022).

Finally, the combination of intervention methods is basic to develop a model an integrated intervention in stunting preventing and reducing, in accordance with stated Sugiyono about some development method stages, including: potential and problems, data collection, product design, design validation, use trials and product/design revisions, and mass production. Therefore, studies on the development of integrated intervention models are useful in producing new models, and this, as stated by Sukmadinata (Junaidah, 2022), needs to be adjusted or based on the needs of the community being studied. And as stated by Rangkuti (2019), it is necessary to use a SWOT analysis approach which takes into account internal factors (strengths and weaknesses) and external factors (opportunities and threats), develops long-term goals, produces alternative strategies, and chooses the right strategy to implement it.

## Conclusion

The development of an integrated intervention model includes a combination of social (micro, mezzo, macro), faith healing (culture and health) and nutritional (specific and sensitive) interventions methods in the stunting prevention and reduction consists of five layers: social - faith healing - nutrition and also their components (Layer 1); parameter indicators and instruments (Layer 2); Involvement of the Government/related institutions and ministries, Regional Government/related agencies, the private sector, universities, NGOs, professional institutions, community capacities, and other stakeholders (Layer 3); SWOT analysis application (Layer 4); Monitoring and evaluation (Layer 5). Recommendation: A model an integrated intervention in preventing and reducing stunting have been developed can be considered as a guide in both scientific studies and further practice.

## Reference

- Amali, K., Kurniawati, Y., & Zulhiddah, Z. (2019). Pengembangan Lembar Kerja Peserta Didik Berbasis Sains Teknologi Masyarakat pada Mata Pelajaran IPA di Sekolah Dasar. *Journal* of Natural Science Integration, 2(2), 191-202.
- Beal T, Tumilowicz A, Sutrisna A, Izwardy D, Neufeld L. A review of child stunting determinants in Indonesia. Matern Child Nutr. 2018;14:e12617. <u>https://doi.org/10.1111/mcn.12617</u>.
- Gebru KF, Haileselassie WM, Tomesgen AH, Seid AO, Mulugeta BA. Determinants of stunting among under-five children in Ethiopia: a multilevel mixed-effects analysis of 2016 Ethiopian demographic and health survey data. BMC Paediatrics. 2019; 19: 176
- Halim, A. Y. (2022). Efektivitas Program Percepatan Penurunan Stunting Melalui Aksi Konvergensi Di Kabupaten Gowa. Universitas Hasanuddin.
- Hariani, Ramlah D, Rahmatiah, 2022. *Pelaksanaan Metode Intervensi Penurunan Stunting Berbasis Masyarakat dan Budaya Lokal*. Poltekkes Kemenkes Makassar, 2022.
- Hariani, Abd. Hady J, Firdaus W. Suhaeb, Rahmatia, 2022. Study Of Development Of Faith Healing Medicalization Model In Stunting Reduction Intervention Method Based On Local Community And Culture. *NeuroQuantology* | June 2022 | Volume 20 | Issue 6 | Page 4841-4854 | doi: 10.14704/nq.2022.20.6. NQ22485.
- Humphrey, J. H., Mbuya, M. N. N., Ntozini, R., Moulton, L. H., Stoltzfus, R. J., Tavengwa, N. V.,
  ... Makoni, T. (2019). Independent and combined effects of improved water, sanitation, and hygiene, and improved complementary feeding, on child stunting and anaemia in rural Zimbabwe: a cluster-randomised trial. The Lancet Global Health, 7(1), e132–e147. https://doi.org/10.1016/S2214-109X(18)30374-7
- Izwardy, Doddy., 2019. Kebijakan Dan Strategi Penanggulangan Stunting Di Indonesia. Kementerian Kesehatan Republik Indonesia
- Junaidah. 2022. Implementasi Manajemen Strategis Dalam Pendidikan Tinggi Islam. Penerbit AURA CV. Anugrah Utama Raharja Cetakan, Maret 2022. ISBN: 978-623-211-303-9
- Kementerian Kesehatan Republik Indonesia. (2018). Hasil Utama Riset Kesehatan Dasar (RISKESDAS). Journal of Physics A: Mathematical and Theoretical, 44(8), 1–200. https://doi.org/10.1088/1751-8113/44/8/085201
  - \_\_\_\_, (2019). Hasil Riset Kesehatan Dasar Tahun 2018. Kementrian Kesehat RI. 2019;53(9):1689–99.
- \_\_\_\_\_, (2019). Intervensi anak kerdil (stunting). Jakarta; 2018. [diakses pada tanggal 23 September 2019]. Available from: http://www.tap2k.go.id/imagos/uploads/downloads/Bindor. Volumo1.pdf
  - http://www.tnp2k.go.id/images/uploads/downloads/Binder\_ Volume1.pdf.
- \_\_\_\_\_, (2018). Situasi Balita Pendek (Stunting) di Indonesia. Jakarta: Buletin Jendela Pusat Data dan Informasi, Kementerian Kesehatan RI, ISSN 2088 270 X Semester I, 2018.
  - \_\_\_\_, (2019). Survei Status Gizi Balita Indonesia (SSGBI). Jakarta: Kemenkes RI

\_\_\_\_\_, (2021). Studi Status Gizi Indonesia 2021. Retrieved 12 Januari, 2022, from <u>https://www.b2p2toot.litbang.kemkes.go.id</u>.

- Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional (Bappenas). (2020). Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020-2024.
- \_\_\_\_\_, (2018). Siaran Pers Stunting Summit: 229. Komitmen Bersama Turunkan Prevalensi Stunting Di Indonesia.
- Liem, S., Marta, R F., & Panggabean, H. (2019). Sanitation Behaviour and Risk of Stunting: Understanding the Discourse of a Public Service Announcement. *Journal The Messenger*, Vol. 11, No. 2, July 2019, pp. 168-181, https://doi.org/10.26623/themessenger.v11i2.1317.

- Lukman, A. Dwi Ramadhani Safitri., Awaru, A. Octamaya Tenri., (2023). Edukasi Stunting Di Dinas Kesehatan Kabupaten Gowa. Program Studi pendidikan Sosiologi Fakultas Ilmu Sosial dan Hukum Universitas Negeri Makassar. *Phinisi Journal of Sociology Education Review*; Vol. 3; No.1; Maret 2023. p.1-11 1.
- Maehara M, Rah JH, Roshita A, et al. (2019). Patterns and risk factors of double burden of malnutrition among adolescent girls and boys in Indonesia. PLoS ONE 14(8): e0221273. https://doi.org/10.1371/journal.pone.0221273
- Maydiantoro, Albet., 2021. Model-Model Penelitian Pengembangan (*Research and Development*). <u>http://repository.lppm.unila.ac.id/</u>. akses 11 Mei 2021.
- Mulyatingsih, Endang., 2021. Pengembangan Model Pembelajaran. <u>https://</u>staffnew<u>.uny.ac.id/upload/131808329/pengabdian/pengembangan-model-</u> pembelajaran.pdf. akses 26 Juni 2021.
- Nurliyana, A. R. *et al.*, (2020) 'Early growth and home environment are associated with cognitive development in the first year of life of Malaysian infants', Early Human Development, 140 (September 2019), pp. 20– 25. doi: 10.1016/j.earlhumdev.2019.104890.
- Okpatrioka, Research and Development (R&D) Penelitian Yang Inovatif Dalam Pendidikan. Dharma Acariya Nusantara: *Jurnal Pendidikan, Bahasa dan Budaya* Vol.1, No.1 Maret 2023 e-ISSN: 2985-962X; p-ISSN: 2986-0393. h. 86-100
- Partap, U., Young, E. H., Allotey, P., Sandhu, M. S., & Reidpath, D. D. (2019). Characterisation and correlates of stunting among Malaysian children and adolescents aged 6- 19 years. Global Health, Epidemiology and Genomics, 4. <u>https://doi.org/10.1017/gheg.2019.1</u>
- Rangkuti, Freddy. 2019. Analisis SWOT Teknik Membedah Kasus Bisnis. Jakarta: Gramedia
- Rayanto, Yudi Hari., dan Sugiharti, 2020. Penelitian Pengembangan Model ADDIE (*Analysis, Design, Development, Implementation & Evaluation*) dan R2D2 (*Reflective, Recursive, Design and Development*). https://books.google.co.id/ teori+pengembangan+model.
- Rosiyati E, Pratiwi EAD, Poristinawati I, Rahmawati E, Nurbayani R, Lestari S, *et al.*, Determinants of stunting children (0-59 months) in some countries in Southeast Asia. Journal of Community Health. 2018; 4 (3): 88-94.
- Saputri, R. A., Anggraeni, D., Sujadmi, & Sopamena, N. (2020). Environmental Sanitation and Stunting (Study of the Role of Women in Stunting Intervention). Journal of Physics: Conference Series, 1655(1). <u>https://doi.org/10.1088/1742-6596/1655/1/012083</u>
- Seyoum, D., Tsegaye, R. and Tesfaye, A. (2019) 'Under nutrition as a predictor of poor academic performance; The case of Nekemte primary schools' students, Western Ethiopia', BMC Research Notes. doi: 10.1186/s13104-019-4771-5.
- Sugiyono. 2020. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta
- Wicaksono, Febri., Harsanti, Titik., (2020). Determinants of Stunted Children in Indonesia: A Multilevel Analysis at the Individual, Household, and Community Levels. Kesmas: National Public Health Journal. 2020; 15 (1): 48-53 DOI:10.21109/kesmas.v15i1.2771
- Widianto, Bambang. 2019. Upaya Konvergensi Program/Kegiatan Pencegahan Anak Kerdil (Stunting). Deputi Bidang Dukungan Kebijakan Pembangunan Manusia dan Pemerataan Pembangunan/ Sekretariat Wakil Presiden RI Workshop Kampanye Nasional dan Komunikasi Perubahan Perilaku Percepatan Pencegahan Anak Kerdil (Stunting). TNP2K.
- Wilson-Jones, M., Smith, K., Jones, D., Hamilton, H., Richardson, L., MacIntyre, A., ... Northover, H. (2019). Response to "The implications of three major new trials for the effect of water, sanitation and hygiene on childhood diarrhoea and stunting: A consensus statement" by Cumming et al. BMC Medicine, 17(1), 1–10. <u>https://doi.org/10.1186/s12916-019-1414-6.</u>
- World Health Organization. (2020). Childhood Stunting: Context, Causes and Consequences. Diakses dari: <u>https://www.who.int/nutrition/healthygrowthproj/en/index1.html</u>

\_\_\_\_\_. Child Stunting. World Health Statistics Data Visualizations Dashboard. (2019). Diakses dari : <u>https://apps.who.int/gho/data/node.sdg.2-2-viz-1?lang=en#content</u>.

Yunitasari, E., Pradanie, R., Arifin, H., Fajrianti, D., & Lee, B.O. 2021. Determinants of Stunting Prevention among Mothers with Children Aged 6–24 Months. Open Access Macedonian Journal of Medical Sciences, 9(B), 378–384.