

Adolescent Nutrition in Indonesia – What Have We Learned?

VOICE FOR CHANGE PARTNERSHIP INDONESIA: POLICY BRIEF ON THE CHALLENGES OF ADOLESCENT NUTRITION IN INDONESIA

Ara GO and Deanna OLNEY

PROGRAM BRIEF 1 | March 2020

INTRODUCTION

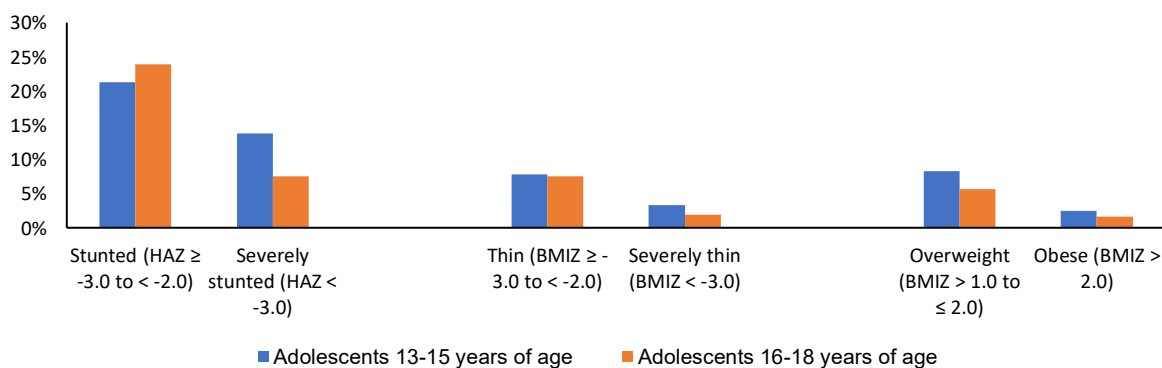
Investments in adolescent health have the potential to influence the future course of global health by improving the health and nutritional status of adolescents themselves, their life trajectories in adulthood, and the lives of their future children (1,2). Despite the growing recognition of the importance of adolescent health and nutrition (1–6), very few policies and programs have been designed and implemented to improve adolescent nutrition especially in low- and middle-income countries. There is also little evidence on how to effectively address the health and nutrition needs of adolescents from well-designed program effectiveness studies. Having a clear understanding of the nutritional problems of adolescents, and the drivers of those problems are prerequisites to developing appropriate policies and programs to improve adolescent nutrition, health and well-being. This brief offers a concise overview of the key nutritional challenges among Indonesian adolescents and current policies and programs to address these challenges. It also highlights other programs and policies to consider based on regional and international experiences.

MAJOR NUTRITIONAL ISSUES FOR ADOLESCENTS IN INDONESIA

Indonesia has a double burden of malnutrition with problems related to undernutrition, and overweight and obesity (7). The anemia prevalence among Indonesian adolescent girls decreased between 2001 and 2013 from 30% to about 23% (8). Among boys, the anemia prevalence in 2013 was about 12% (8). Although the anemia prevalence decreased, it remains a public health problem with wide regional variance (9). The consequences of anemia vary based on timing, severity and duration ranging from frequent tiredness to an increased risk of mortality and for girls, pregnancy complications. The latter can be further complicated due to the high prevalence of early marriage (14%) and pregnancy (48 out of 1,000 women aged 15-19 y) in Indonesia (10,11). The adolescent pregnancy rate is more than twice the East Asia and Pacific average of 22 out of 1000 (12). There is an urgent need to understand the context-specific causes of anemia and the regional variance. With this data, programs can be effectively designed and implemented where they are needed most.

Stunting and thinness prevalence remain high in Indonesia (Figure 1). While at least 25% of Indonesian adolescents suffer from undernutrition, the overweight and obesity prevalence is rapidly increasing (8) and is as common as thinness among Indonesian adolescents (Figure 1). The consequences of undernutrition are well documented. A child who is severely underweight is more prone to health issues and delayed development. Among pregnant adolescents, underweight leads to an increased risk of poor birth outcomes (13,14). On the other hand, obese adolescents are at increased risk of chronic diseases (e.g. type II diabetes, cardiovascular diseases, and certain cancers), pregnancy complications (e.g. gestational diabetes, pre-eclampsia), and having high birth weight babies and children with obesity later in life (15). They may also suffer from psychological and social problems (e.g. low self-esteem and depression) (16).

Figure 1. Prevalence of stunting, thinness, and overweight and obesity among Indonesian adolescents



Source: National Basic Health Survey (*Riskesdas*) 2013

REVIEW OF EXISTING POLICIES AND PROGRAMS IN INDONESIA

The Government of Indonesia (GoI) has made reducing anemia among adolescent girls a high priority. In 1997, the GoI mandated Weekly Iron Folic Acid Supplementation (WIFAS) for adolescent girls. This was updated in 2016 to align more closely with the updated 2011 WHO recommendations for iron folic acid (IFA) supplementation (17). Despite the high-level commitment to improving adolescent nutrition, a recent review found that only two out of 104 nutrition-specific national policies reviewed are designed to improve adolescent health and nutrition. These two policies focus on reducing anemia among adolescent girls and women of reproductive age and managing overweight and obesity among school children 6-19 y of age (18).

Between 2015-2018, the Ministry of Health together with Nutrition International conducted a pilot project in two districts in West Java with anemia prevalence >50% to demonstrate how the revised WIFAS policy could be implemented through the existing school health unit, Usaha Kesehatan Sekolah. The WIFAS was coupled with nutrition education on anemia and healthy eating behaviors and reached 52,000 school-going adolescent girls 12-19 y of age in 244 schools (17). Despite promising results, the project may have been more effective if adolescent boys and out-of-school girls could have also been reached.

In 2017, a new scale-up project (MITRA Youth, 2017-2020) designed to build on this previous experience was initiated to reduce anemia by an additional 15% among adolescent girls 15-18 y of age through improving the WIFAS strategy. The program aims to reach around 289,000 adolescent girls in 1,670 senior high schools in 20 districts of East Java and East Nusa Tenggara provinces. Although it is mainly school-based, the project also advocates with district health centers to provide IFA tablets through existing community health platforms to reach out-of-school girls (19).

EVIDENCE FOR PROMISING PRACTICES

IFA supplementation is a key strategy to reduce anemia and has a strong, global evidence-base for effectiveness (3,5,20–24), with the potential to be scaled up for greater impact. This is being tested in Indonesia. There is also some evidence that multiple micronutrient supplementation (MMS) can effectively reduce anemia among adolescents (20). In Indonesia, weekly and twice-weekly MMS improved hemoglobin concentrations among adolescent girls in East Jakarta and Tangerang, respectively (27,28). Pairing IFA supplementation with other interventions such as deworming and nutrition education has also been effective in other South Asian countries (15). For example in India, WIFAS with biannual deworming and nutrition education reduced anemia by 43% in a one-year pilot study conducted in five states (7).

There is some evidence related to successful strategies to reduce the risk of overweight. A systematic review found that BMI decreased with school-based promotion of health dietary habits and physical activities among adolescents 11-19 y old (3). Reaching adolescent who are not in school can be challenging. However, one study demonstrated that a community-based behavior change communication intervention revolving around nutrition improved adolescent girls' knowledge and increased their consumption of healthy foods in several South Asian countries (15). Some studies have also indicated that information and communication technologies platforms such as social media could be another feasible and effective way to reach adolescent girls and boys in Indonesia to promote healthy diets and lifestyles, although these have yet to be evaluated (6,27). Other studies have highlighted the need to promote a healthy body image and provide adolescent counseling support (28,29). Context-specific evidence on the effectiveness of interventions to prevent overweight, obesity, or body image dissatisfaction among adolescents in Indonesia and/or Southeast Asia is scant and warrants prompt attention and action.

CONCLUSION

Indonesia is experiencing a double burden of malnutrition where overweight and obesity are rising while undernutrition remains a concern. Adolescent nutrition has received insufficient attention in research as well as programming in Indonesia. There is an urgent need for more comprehensive nutrition-related data for adolescents including the prevalence of micronutrient deficiencies, dietary and physical activity patterns, and how this varies across regions and other factors within Indonesia. In addition to the current WIFAS programming, new programming focusing on promoting healthy diets, energy balance, and health body image are likely needed (20,30). Given the array of challenges facing adolescents in Indonesia, evidence-based, multisectoral responses, combining nutrition-specific and nutrition-sensitive interventions (in sectors such as education, social protection, and agriculture), should be considered. At the same time, it is crucial to invest in rigorous research into the context specific causes of the identified nutrition problems and evaluations of interventions and programs designed to address these issues among Indonesian adolescents to identify the optimal forms of interventions for this population.

REFERENCES

1. Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Nicholas B, Arora M, Azzopardi P, Baldwin W, Bonell C, et al. Lancet Commission on Child health. *Lancet*. 2016;387:2423–78.
2. Bhutta ZA, Lassi ZS, Bergeron G, Koletzko B, Salam R, Diaz A, McLean M, Black RE, de Rigit LM, Christian P, et al. Delivering an action agenda for nutrition interventions addressing adolescent girls and young women: priorities for implementation and research. *Ann N Y Acad Sci*. 2017;1393:61–71.
3. Salam RA, Sc M, Hooda M, D M, Das JK, A MB, Arshad A, S MBB, Lassi ZS, Ph D, et al. Interventions to Improve Adolescent Nutrition : A Systematic Review and Meta-Analysis. 2016;59.
4. Das JK, Salam RA, Thornburg KL, Prentice AM, Campisi S, Lassi ZS, Koletzko B, Bhutta ZA. Nutrition in adolescents : physiology , metabolism , and nutritional needs. 2017;21–33.
5. Lassi ZS, Moin A, Das JK, Salam RA, Bhutta ZA. Systematic review on evidence-based adolescent nutrition interventions. *Ann N Y Acad Sci*. 2017;1393:34–50.
6. Savage A, Februhartanty J, Worsley A. Adolescent women as a key target population for community nutrition education programs in Indonesia. 2017;26:484–93.
7. WHO. Guideline: implementing effective actions for improving adolescent nutrition. 2018.
8. Health Research and Development Agency. Basic Health Research. *Natl Rep* 2013. 2013;1–384.
9. MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA. IFA Supplementation for girls and WCBA Guideline Indonesia. 2018.
10. UNICEF. Child-marriage-database_Mar-2018. 2018.
11. The DHS Program. Demographic and Health Survey of Indonesia 2012. 2012;
12. UNICEF. The State of the World’s Children 2016. UNICEF. 2016.
13. Han Z, Lutsiv O, Mulla S, McDonald SD. Maternal Height and the Risk of Preterm Birth and Low Birth Weight: A Systematic Review and Meta-Analyses. *J Obstet Gynaecol Canada*. 2012;34:721–46.
14. World Health Organization. Adolescent Nutrition: A Review of the Situation in Selected South-East Asian Countries. 2006.
15. Aguayo VM, Paintal K. Nutrition in adolescent girls in South Asia. *BMJ*. 2017;357:1–4.
16. Jean Rankin, Lynsay Matthews, Stephen Cobley, Ahreum Han, Ross Sanders, Huw D Wiltshire JSB. Psychological consequences of childhood obesity: psychiatric comorbidity and prevention. *Adolesc Health Med Ther*. 2016;125–46.
17. Roche M. Adolescent girls’ nutrition and prevention of anaemia: a school based multisectoral collaboration in Indonesia. 2018;1–6.
18. Soekarjo D, Roshita A. Strengthening Nutrition-Specific Policies for Adolescents in Indonesia: A Qualitative Policy Analysis. 2018
19. Nutrition International. MITRA Youth: Weekly Iron Folic Acid Supplementation for prevention and reduction of anaemia among school-going adolescent girls in select districts of two provinces-East Java & East Nusa Tenggara, Indonesia. 2017.
20. Oddo VM, Roshita A, Rah JH. Review Article Potential interventions targeting adolescent nutrition in Indonesia : a literature review. 2018;22:15–27.
21. Soekarjo DD, Pee S De, Kusin JA, Schreurs WHP, Schultink W, Bloem MW. Effectiveness of weekly vitamin A and iron supplementation for adolescent boys and girls through schools in rural and urban East Java , Indonesia. 2004;927–37.
22. Vir SC, Singh N, Nigam AK, Jain R. Weekly iron and folic acid supplementation with counseling reduces anemia in adolescent girls : A large-scale effectiveness study in Uttar Pradesh , India. 2008;29:186–94.
23. WHO. Guideline: Intermittent iron and folic acid supplementation in menstruating women. *Bull World Heal Organ*. 2011;1–30.
24. WHO. Guideline: daily iron and folic acid supplementation in pregnant women. Geneva WHO [Internet]. 2012;46:323–9.
25. Angeles-agdeppa I, Indonesian KD, Sastroamidjojo S, Gross R, Darwin W. Weekly micronutrient in female Indonesian supplementation to build iron stores. *Am J Clin Nutr*. 1997;66:177–83.
26. Landscape Report on Adolescent and Maternal Nutrition in Indonesia. Global Alliance for Improved Nutrition. 2014. p. 1–54.
27. Guthrie E, Nugroho D. Indonesian Youth Online An Exploratory Study of the Indonesian Digital Landscape. Unicef. 2012;1–43.
28. Harriger JA, Thompson JK. Psychological consequences of obesity: Weight bias and body image in overweight and obese youth. *Int Rev Psychiatry*. 2012;24:247–53.
29. Voelker D, Reel J, Greenleaf C. Weight status and body image perceptions in adolescents: current perspectives. *Adolesc Health Med Ther*. 2015;6:149–58.
30. Rah JH, Roshita A, Sugihantono A, Izwardy D. New Horizons for the Forgotten Generation: Improving adolescent nutrition in Indonesia. *SIGHT LIFE*. 2017;31:84–90.

About the Authors

Ara Go is a Program Manager and **Deanna Olney** is a Senior Research Fellow and Theme Leader for Nutrition-Sensitive Programs at the International Food Policy Research Institute (IFPRI). This brief was produced as part of the Voice for Change Partnership (V4CP) program in partnership between SNV and IFPRI. The authors wish to thank Dan Gilligan, Nicholas Minot, Mei J.O. Tatengkeng, and Husnul Maad for their valuable inputs and feedback provided on this brief.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

A world free of hunger and malnutrition

1201 Eye Street, NW, Washington, DC 20005 USA | T. +1-202-862-5600 | F. +1-202-862-5606 | Email: ifpri@cgiar.org | www.ifpri.org | www.ifpri.info

This publication has been prepared as an output of the Voice for Change Partnership (V4CP) program and has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and are not necessarily representative of or endorsed by IFPRI.

© 2020 International Food Policy Research Institute (IFPRI). This publication is licensed for use under a Creative Commons Attribution 4.0 International License (CC BY 4.0). To view this license, visit <https://creativecommons.org/licenses/by/4.0>.