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INCREASING KNOWLEDGE ABOUT STUNTING AND TRAINING CADRES IN MAKING ANTI-STUNTING PMT FROM SNAKEHEAD FISH

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ABSTRACT

Stunting not only affects a child's physical condition but also their cognitive development and long-term performance due to suboptimal brain development. The most crucial intervention in addressing stunting occurs during the first 1,000 days of life (HPK). Providing adequate food intake and good nutrition doesn't have to be expensive. One effort that can be made is by providing a PMT (Food Supplement) made from snakehead fish. Snakehead fish is good for consumption by anyone, including toddlers and pregnant women. 100 grams of snakehead fish contains 80 calories and various beneficial nutrients needed by the body. In addition to these nutrients, snakehead fish also contains carbohydrates, iron, copper, vitamin B2, and omega-3 fatty acids. The nutrient-rich content of snakehead fish can be an alternative to high-calorie PMT ingredients. Based on the results of an initial survey conducted by the proposal team, it turns out that many male and female students at Zainul Hasan Genggong Islamic Boarding School still lack a good understanding of stunting and how to prepare anti-stunting supplementary foods. Based on these findings, the proposal team plans to conduct community service activities. The methods used in this community service activity were counseling on stunting and training in making anti-stunting PMT from snakehead fish. The results of the activity showed an 85% increase in knowledge after the counseling. In addition, the training successfully improved the skills of male and female students in processing snakehead fish into various simple and nutritious PMT preparations. The enthusiasm of the participants was evident from their active participation in discussions and direct involvement in the PMT preparation practice. Conclusion: Education on stunting combined with training in making PMT from snakehead fish has proven

effective in increasing the knowledge and skills of students. The high nutritional content of snakehead fish makes it a potential alternative to support stunting prevention in the community.

Keywords: Health Cadre Training; Knowledge; Snakehead Fish; Stunting; Supplemental Feeding.

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INTRODUCTION

Indonesia still faces a serious nutritional problem, which is reflected in the high incidence of stunting. Stunting is a condition of failure to grow and develop in the body and brain due to prolonged malnutrition, resulting in children being shorter than normal children their age and experiencing delays in thinking. Stunting in children is caused by poor nutritional intake, infectious diseases, maternal poor nutrition during preconception, pregnancy, and lactation, genetic factors, exclusive breastfeeding, food availability, socioeconomic factors, maternal education level, maternal nutritional knowledge, and environmental factors.

Stunting not only affects a child's physical condition but also their cognitive development and long-term performance due to suboptimal brain development. The stunting rate in Indonesia remains far from the target of a 14 percent reduction by 2024. According to the 2023 Indonesian Health Survey (SKI), the national stunting prevalence was 21.5 percent, a decrease of approximately 0.8 percentage points compared to the previous year. The WHO standard for stunting prevalence is less than 20%. The Ministry of Health carries out specific interventions through two main approaches: nutritional interventions for mothers before and during pregnancy, and interventions for children aged 6 to 2 years. Stunting in toddlers can impact their growth

and intellectual development. This impact can indirectly lead to decreased productivity, an increased risk of degenerative diseases, and an increase in the birth of low-birth-weight babies in the future. These impacts can increase poverty in the future and indirectly affect family food security.

Stunting prevention and management involve a multisectoral approach, including the provision of nutritious food, nutrition education, improved sanitation and clean water, and access to adequate health services. Raising awareness and education about the importance of good nutrition is also crucial in reducing stunting rates. Stunting prevention is achieved by building community support and participation in efforts to improve nutrition understanding.

To address stunting, the Indonesian government has issued several regulations governing policies and strategies that can be tatted to address the problem of stunting in Indonesia. One example is Presidential Regulation of the Republic of Indonesia Number 72 of 2021 concerning the Acceleration of Stunting Reduction (Indonesia 2021), which states that the national target for stunting prevalence in children under 5 years of age is a step towards achieving sustainable development goals. The National Strategy for the Acceleration of Stunting Reduction is a step towards achieving this target,

encompassing five pillars containing activities to accelerate stunting reduction.

The most crucial intervention in addressing stunting is during the first 1,000 days of life (HPK). If toddlers consume insufficient nutrients during this period, it can lead to nutritional problems that impact growth and developmental disorders. Providing adequate food intake and good nutrition does not have to be expensive. With the right knowledge, existing resources can be optimally utilized to achieve good nutrition and prevent stunting in children. One such effort is the use of PMT (food supplementation) made from snakehead fish. Snakehead fish is good for everyone, including toddlers and pregnant women. 100 grams of snakehead fish contains 80 calories and a variety of beneficial nutrients needed by the body. In addition to these nutrients, snakehead fish also contains carbohydrates, iron, copper, vitamin B2, and omega-3 fatty acids. The nutrient-rich content of snakehead fish could be an alternative ingredient for high-calorie supplementary foods (PMT).

Based on the results of an initial survey conducted by the proposal team, many male and female students at Zainul Hasan Genggong Islamic Boarding School (PPZ) still lack a good understanding of stunting and how to prepare anti-stunting supplementary foods. Based on these findings, the proposal team plans to conduct a community service activity at PPZ Zainul Hasan Genggong to increase knowledge about stunting and train cadres in preparing anti-stunting supplementary foods (PMT) from snakehead fish. The purpose of this community service activity is to increase cadres' knowledge about stunting and the importance of PMT in preventing stunting, as well as to improve

their skills in preparing supplementary foods (PMT) from snakehead fish.

OBJECTIVES

General Purpose

To enhance the capacity and active role of health cadres in community-level efforts to prevent stunting.

Special Purpose

To increase cadres' knowledge regarding:

1. The definition and impact of stunting on child growth and development.
2. The importance of Supplementary Feeding (PMT - Pemberian Makanan Tambahan) as a key strategy for stunting prevention.

To improve cadres' practical skills in:

1. Processing and preparing nutritious supplementary food (PMT), particularly those utilizing snakehead fish (ikan gabus) (as a good source of protein and albumin), for toddlers.
2. Conducting education and socialization to mothers and families in the community concerning the importance of nutrition and PMT to prevent stunting.

PLAN OF ACTION

Strategy Plan

It contains things that are planned by the authors before the implementation of the activity, so that the activity can be carried out properly.

An initial survey was conducted which found that many santri (male students) and santriwati (female students) at PP Zainul Hasan Genggong did not have a good understanding of stunting and how to prepare anti-stunting supplementary food.

The proposing team planned a community service (PKM) activity based on the initial survey findings.

The method for the activity was determined as:

1. Outreach on stunting and the importance of Supplementary Feeding (PMT) to prevent stunting.
2. Training on making anti-stunting PMT using snakehead fish (ikan gabus).

The outreach activity series was planned to include:

1. Providing information to caregivers and residents.
2. Preparing an attendance list for 40 participants.
3. Distributing pre-test questionnaires before the outreach.
4. Material presentation by Speakers from the UNUSA Faculty of Medicine.
5. A discussion and question-and-answer session (2 sessions, 3 questioners each).
6. Distributing door prizes to active participants.
7. Filling out the post-test via questionnaire.

The objective was set: to increase cadres' knowledge about stunting and the importance of PMT, and to improve cadres' skills in making PMT from snakehead fish.

Implementation

It contains everything that is done by the author until the activities planned by the writer are carried out. This implementation can be in the form of an implementation of a strategy plan consist of:

1. The community service activity was carried out at PP Zainul Hasan Genggong.
2. The outreach on stunting and PMT was conducted offline in a meeting room.
3. The outreach and training were attended by santri and santriwati at PP Zainul Hasan Genggong.
4. Evaluation was conducted by

administering pre-test and post-test questionnaires.

5. The Training on making Supplementary Food (PMT) based on snakehead fish was held to teach health cadres how to process and make simple and nutritious supplementary food.
6. The training successfully improved the skills of the santri and santriwati in processing snakehead fish into various PMT products.
7. Participants demonstrated enthusiasm and active involvement in discussions, as well as direct participation in the PMT preparation practice.
8. The activity results showed a knowledge increase of 85% after the outreach.

Setting

In the setting, the authors are expected to explain where the activities will be carried out.

Target

Contains the population of the activities of the authors consist of:

1. The primary participants are the health cadres at Pondok Pesantren Zainul Hasan Genggong.
2. The total number of participants in the activity was 40 participants.
3. The participants who followed the outreach and training were the santri and santriwati at PP Zainul Hasan Genggong.

RESULTS AND DISCUSSION

The community service activity, which focused on stunting education and cadre training in making anti-stunting Supplementary Food (PMT) from snakehead fish (ikan gabus), was

successfully implemented at PP Zainul Hasan Genggong. The activity was attended by 40 santri (students) and santriwati (female students).

Achievement of Activities (Results Evaluation)

The activity demonstrated a highly significant increase in the participants' knowledge and skills.

Increased Knowledge

The evaluation conducted using pre-test and post-test questionnaires showed a significant improvement in knowledge among the respondents.

Prior to the intervention (pre-test), only 2.5% of respondents had a good knowledge score, while 50.0% had a poor score.

After the intervention (post-test), the number of respondents with good knowledge increased significantly to 85.0%.

The statistical analysis using the non-parametric Wilcoxon test showed a p-value of 0.000, which is less than 0.05, indicating a significant positive change in the students' knowledge after the counseling.

Increased Skills

The training successfully improved the skills of the santri and santriwati in processing snakehead fish into various simple and nutritious PMT preparations.

Implementation and Process Evaluation

The success of the activities was supported by the process implementation:

Enthusiasm and Participation: The participants showed great enthusiasm and active involvement in following the counseling and training activities. This enthusiasm was evident through their active

participation in discussions and direct involvement in the practical PMT preparation sessions.

Perceived Benefit: Post-activity interviews revealed that the santri and santriwati were very happy with the activity because they gained new insights and experiences that they could use and apply in daily life.

Effectiveness of Materials: The combination of education on stunting with practical PMT training using locally available, highly nutritious snakehead fish proved to be effective in simultaneously enhancing both knowledge and skills.

CONCLUSION

The community service activity, which combined education on stunting with training on making Supplementary Food (PMT) from snakehead fish, was proven to be effective. The key achievements and final conclusions are:

Effectiveness in Knowledge: The activity successfully increased the participants' knowledge by 85%.

Effectiveness in Skills: The training successfully enhanced the participants' skills in preparing nutritious PMT.

Potential of Local Ingredient: The high nutritional content of snakehead fish makes it a potential alternative to support stunting prevention in the community.

Recommendation: It is suggested that this type of educational program, which is based on local potential, be integrated into the pesantren (Islamic boarding school) curriculum and carried out sustainably with active community involvement.

REFERENCES

Dian M. A., Sri N., Immawati (2024). Penerapan pendidikan kesehatan terhadap pengetahuan ibu tentang

- stunting pada balita di wilayah kerja UPTD puskesmas rawat inap banjarsari metro utara. *Jurnal Cendikia Muda*. Vol 4 (2):
- Kemenkes RI (2024). Peringatan HAN 2024 jadi momentum lindungi anak dari stunting dan polio. Diakses 20 februari 2025 pada <https://sehatnegeriku.kemkes.go.id/baca/umum/20240723/4346087/peringatan-han-2024-jadi-momentum-lindungi-anak-dari-stunting-dan-polio/>.
- Ertien E. N., Zafiratul I., Ananda S., Firda F. S., Brlianda K. I. (2023). Implementasi pemberian makanan tambahan (PMT) dan kegiatan penyuluhan gizi sebagai penunjang pencegahan stunting desa pabean. *JPKMN*. Vol 4 (3): 1865-1872. <http://doi.org/10.55338/jpkmn.v4i3.1218>.
- Indonesia, Presiden Republik. (2021). Peraturan presiden republik Indonesia no. 72 tahun 2021 tentang percepatan penurunan stunting. Diakses 20 februari 2025 pada <https://peraturan.bpk.go.id/Details/174964/perpres-no-72-tahun-2021>.
- Nadirawati, Susilowati, Suharjiman, Argi V. N., Chatarina Suryaningsih, Sri W. N. (2023). Pelatihan pengolahan makanan tambahan dan pendamping ASI untuk mengatasi stunting di desa kertawangi kabupaten bandung barat.” *Jurnal Pengabdian Pada Masyarakat* 8(1):76–86. <https://doi.org/10.30653/jppm.v8i1.231>
- Kemenkes RI. (2023). Ikan gabus, inilah 9 manfaat dan hal-hal yang perlu diketahui sebelum mengkonsumsinya. Diakses 20 februari 2025 pada <https://www.alodokter.com/ikan-gabus-inilah-9-manfaat-dan-hal-hal-yang-perlu-diketahui-sebelum-mengonsumsinya>.
- Trias M, Belinda Putri A., Muhammad Fifin K., Kus Aisya A., Diah Indriani. (2020). Nutritional education intervention by giving snakehead fish meatball to increasing nutritional status of childhood stunting and improvement of mother’s care patterns in lamongan district. *Systematic Reviews in Pharmacy*. Vol 11 (8): 400-405. <https://doi.org/10.31838/srp.2020.8.5>.
- Kesehatan, K. (2018). Buku KIE Kader Kesehatan Remaja (L. S. R. S. C. Shafiyah (ed.)). Kementerian Kesehatan RI.
- Kusumawati, E., Rahardjo, S., & Sari, H. P. (2015). Model pengendalian faktor risiko stunting pada anak bawah tiga tahun. *Kesmas: National Public Health Journal*, 9 (3), 249–256.
- WHO, 2014. (2014). World Health Statistics. World Health Organization. <https://doi.org/10.33221/jiki.v10i01.423>.
- Hidayah, N., & Marwan, M. (2020). Upaya pemberdayaan masyarakat dalam menciptakan generasi milenial sadar gizi yang bebas stunting melalui kegiatan 1000 HPK. *Journal of Community Engagement in Health*, 3(1): 86-93. <https://doi.org/10.30994/jceh.v3i1.41>.
- Muthia, G., Edison, E., & Yantri, E. (2020). Evaluasi pelaksanaan program pencegahan stunting ditinjau dari intervensi gizi spesifik Gerakan 1000

- HPK di puskesmas pegang baru kabupaten pasaman. *Jurnal Kesehatan Andalas*, 8(4): 100-108. <https://doi.org/10.25077/jka.v8i4.1125>.
- Kemendes RI (2024). Panduan hari gizi nasional ke 64 tahun 2024. Di akses 22 februari 2025 pada <https://ayosehat.kemkes.go.id/panduan-hari-gizi-nasional-ke-64-tahun-2024>.
- Kemendes RI. (2022). Hasil survei status gizi Indonesia (SSGI) 2022. Kemendes, 1-150.
- Dhiya S. R. Anggreni, Aditia S., Nida H. (2023). Tumbuh sehat bersama gizi: edukasi pencegahan stunting melalui kesehatan gizi keluarga di desa kuripan ciseeng. *Prosiding Semnaskat LPPM UMJ* 2023. <https://jurnal.umj.ac.id/index.php/semnaskat/article/view/20913>.
- Widhi, A. P. K. N. (2023, March). Edukasi gizi sebagai pencegahan stunting pada kader posyandu dan ibu balita/anak di kecamatan kalibagor banyumas. *Prosiding Seminar Nasional LPPM Unsoed*. Vol. 12: 703-708. <https://sinelitabmas.unsoed.ac.id/google-doc/6822989/edukasi-gizi-sebagai-pencegahan-stunting-pada-kader-posyandu-dan-ibu-balita-anak-di-kecamatan-kalibagor-banyumas>.
- Erna K, Setiyowati Raharjo, Hesti J. S. (2015). Model pengendalian faktor risiko stunting pada anak usia di bawah tiga tahun. *Jurnal Kesehatan Masyarakat Nasional*. Vol 9 (3). <https://scholarhub.ui.ac.id/kesmas/vol9/iss3/8/>.
- Wiwik W., M. F. Kombih. (2022). Pencegahan stunting di kabupaten pasuruan dengan pelatihan pengolahan ikan gabus. *Journal of Dedicator Community*. Vo 6 (1): 59-66. <https://doi.org/10.34001/jdc.v6i1.285>.
- Suryana. (2020). Peran Pondok Pesantren dalam Pencegahan Stunting: Tinjauan dari Perspektif Edukasi Gizi dan Kesehatan Reproduksi. *Jurnal Kesehatan Masyarakat*. <https://doi.org/10.15294/kemas.v15i2.19255>
- Atasasih, H., Mulyani, S. (2022). Sosialisasi “isi piringku” pada remaja putri sebagai upaya pencegahan stunting. *DINAMISIA: Jurnal Pengabdian Kepada Masyarakat*, 6(1), 116–121. <https://doi.org/10.31849/dinamisia.v6i1.4685>
- Widiany. (2022). Skrining gizi remaja putri di pondok pesantren sebagai upayaantisipasi stunting. *UNUSA Conference*. <https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://conferences.unusa.ac.id/index.php/snpm/article/download/999/574/1582&ved=2ahUKEwiAq-mA5ZOPAxVPzzgGHYySLdcQFnoECBcQAQ&usg=AOvVaw1JFAKQ5soNUdkPizNzftfL>
- Herlina, Virgia, V. (2020). Hubungan stres dengan pola siklus menstruasi pada remaja putri di lembaga kesejahteraan sosial anak. *Journals of Ners Community*, 11(2), 195–201. <https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://journal.unigres.ac.id/index.php/JNC/article/download/1119/890&ve>

- d=2ahUKEwinmLy15pOPAxXxTWwGHfnsEGkQFnoECBkQAQ&usg=A
OvVaw2roGHZ3RcfdI9NohwdN2Aw
- Nurhayati, Asmawati, Ihromi, S., Marianah, Saputrayadi, A. (2020). Penyuluhan gizi dan pelatihan pengolahan produk berbasis jagung sebagai upaya meminimalisir stunting di Desa Labuapi Kabupaten Lombok Barat. *JMM (Jurnal Masyarakat Mandiri)*, 4(5), 806–817. [10.31764/jmm.v4i5.2973](https://doi.org/10.31764/jmm.v4i5.2973)
- Widaryanti, R., Yuliani, I. and Rahmuniyati, M.E., (2021). Kesiapan penerapan program 8000 hari pertama kehidupan (HPK) di Kota Yogyakarta. *Jurnal Jarlit*, 17(1), 86–106. <https://doi.org/10.70154/jid.v17i1.11>
- Hastarahma, Vidiyasa., Adi. S., Paramita, F., Ulfah, N, H. (2024). Implementasi Intervensi Gizi Sensitif Stunting Di Wilayah Indonesia – Literature Review. *Sport Science and Health*, 6(10), 2024, 1162–1185. [10.17977/um062v6i102024p1162-1185](https://doi.org/10.17977/um062v6i102024p1162-1185)
- Martony, O. (2023). Stunting di Indonesia: Tantangan dan Solusi di Era Modern. *Journal of Telenursing (JOTING)*, 5(2), 1734–1745. <https://doi.org/10.31539/joting.v5i2.6930>
- Muhamad, Z., Mahmudiono, T., Abihail, C. T., Sahila, N., Wangi, M. P., Suyanto, B., &
- Nutrients, 15(19). <https://doi.org/10.3390/nu15194305>
- Picauly, I., Mirah Adi, A. A. A., Meiyetriani, E., Mading, M., Weraman, P., Nashriyah, S. F., Hidayat, A. T., Adeline Boeky, D. L., Lobo, V., Saleh, A., & Peni, J. A. (2023). Path analysis model for preventing stunting in dryland area island East Nusa Tenggara Province, Indonesia. *PLoS ONE*, 18(11 November). <https://doi.org/10.1371/journal.pone.0293797>.
- Rustam, E., Rahayu, A., Merdekawati Surasno, D., Norma Toduhu, dan B., Artikel, I., Penelitian, A., Pengabdian, A., & Artikel, R. (2023). Analisis Intervensi Sensitif dan Tingkat Pengetahuan Terhadap Kejadian Stunting Pada Balita di Wilayah Kerja Puskesmas Soasio Kota Tidore Kepulauan Tahun 2022. *Jurnal BIOSAINSTEK*, 5(2), 71–77. <https://doi.org/10.52046/biosainstek.v5i2.71-77>.
- Sari, D., Achadi Nugraheni, S., Zen Rahfiludin, M., Studi Magister Kesehatan Masyarakat, P., Kesehatan Masyarakat, F., Diponegoro, U., & Gizi Kesehatan Masyarakat, D. (2023). The Indonesian Journal of Health Promotion MPPKI Media Publikasi Promosi Kesehatan Indonesia. 6(5). <https://doi.org/10.31934/mppki.v2i3>.
- Binti Abdullah, N. A. (2023). Preliminary Study: The Effectiveness of Nutrition Education Intervention Targeting Short-Stature. Pregnant Women to Prevent Gestational Stunting.