

Improving Competency of Posyandu Cadres on Early Detection of Stunting in Lengkong Village, Mumbulsari District, Jember Regency

Kalista Riski Sulistyaningsih^a, Ahmad Najja Maulana^b, Saron Gayuh Wilujeng^b

e-mail: kalista.riski.sulistyaningsih-2021@fk.unair.ac.id

^aMidwifery Study Program, Faculty of Medicine, Airlangga University, Surabaya 60115, Indonesia

^bMedical Study Program, Faculty of Medicine, Airlangga University, Surabaya 60115, Indonesia

Abstract

Based on data from the Ministry of Health of the Republic of Indonesia and the Central Statistics Agency in 2019, Jember is the city with the second highest percentage of stunting cases in East Java, so reducing the stunting rate is one of the main programs of the Jember regional government as the second indicator of the SDGs. Stunting data in Lengkong experienced a very drastic decline, in February 2022 as many as 329 children were stunted, but in June 2022 the number was only 4 children. The cadres had not been able to calculate age, conduct anthropometric measurements, and interpret the measurement results on the graph correctly. The problem-solving plan was to conduct cadre training on stunting and anthropometric measurements. On the first day, the training was by the presentation. The pre-test and post-test methods were used to determine the effect of giving presentations on the cadre's knowledge, then the Shapiro-Wilk and Wilcoxon Signed Ranks Test test was performed. On the second day, the anthropometric measurement demonstration was conducted. The first day was attended by 29 cadres. The descriptive analysis result of the pre-test was (Mean = 76.55; SD = 11,109; Median = 80; IQR = 20) and the post-test was (Mean = 92.07; SD = 11,142; Median = 100; IQR = 10). Wilcoxon Signed Ranks Test results, Z score = -4.237; p-value = 0.000 (<0.05) it means that between the pre-test and post-test groups there is a significant difference, so the presentation about stunting and anthropometry positively and significantly increased the cadre's knowledge. The second day was attended by 19 cadres. After the demonstration, the cadres can perform anthropometric measurements and interpret the data using growth charts correctly.

Keywords: stunting; SDGs; cadres; anthropometry

1. Introduction

The problem of malnutrition globally is still getting the main attention, especially in several developing countries (Sasmita, 2021) and is one of the development targets as stated in the Sustainable Development Goals (SDGs) document in the second indicator, namely eliminating hunger, achieving food security and good nutrition, and promoting sustainable agriculture. The national indicator used to measure the SDGs targets is the prevalence of stunting in toddlers according to the Report on the Implementation of the National Socioeconomic Survey (Susenas) and the Nutritional Status of Indonesian Toddlers (SSGBI) (Kementerian Kesehatan RI and BPS, 2019). These nutritional problems include being underweight, wasting, stunting, and micronutrient deficiencies.

Stunting or also called too short according to age, is defined as height or body length that is less than or below -2 SD (Standard Deviation) child growth chart (WHO, 2015) becomes the most significant obstacle to human development. Stunting is the result of irreversible inadequate nutrition and recurrent infections in the first 1,000 days of a child's life. The long-term effects of stunting on individuals and communities vary, namely decreased cognitive and physical development,

decreased productive capacity and poor health, and increased risk of degenerative diseases such as diabetes according to the Ministry of Health of the Republic of Indonesia.

Globally, around 149.2 million toddlers in the world are stunted (United Nations, 2022). The current nutritional problems in Indonesia include the incidence of Low Birth Weight of 10.2%, toddlers who have an inappropriate weight of 19.6%, and as many as 32.2% of toddlers whose height is not by age (short/ stunting), around 8 million Indonesian children experience non-optimal growth (Kementerian Kesehatan RI and BPS, 2019). In 2019, the prevalence of stunting in Indonesia was 27.67% and Jember Regency has ranked 2nd most stunting cases in Java Your team with a prevalence of 37.94% (Kementerian Kesehatan RI and BPS, 2019). The latest data based on calculations in 2021 shows that the prevalence of stunting in East Java has decreased to 23.5% or at least 653 thousand toddlers who are estimated to experience stunting, but East Java is still ranked the 2nd largest number of children stunted in Indonesia (Dinas Kesehatan Provinsi Jawa Timur, 2022). Further action and investigation are needed to achieve the WHO target by 2025 to raise the figure to 100 million (WHO, 2014). In the 2020-2024 RPJMN, the Indonesian government targets to reduce the prevalence of stunting in 2024 to 14% through Presidential Regulation No. 72 of 2021 (Kementerian Kesehatan Republik Indonesia, 2021).

Judging from how it is defined and measured, stunting is often unrecognized in societies where short stature is rated as normal because linear growth is not assessed routinely in primary health care and it is difficult to recognize invisibly. In Jember Regency, especially in Lengkong Village, there is a discrepancy between the data provided by the village and reports from posyandu cadres and the Rumah Desa Sehat (RDS). Furthermore, it was explained that the stunting data according to the Rumah Desa Sehat (RDS) in the February 2022 calculation was 329 children, then in June 2022, the number became only 4 people. In fact, according to the cadres, the measurement of height and length in posyandu activities only took place 2 times in February and August along with the activities of the National Child Immunization Month (BIAN).

Various data collection processes are carried out to find the root of the problem, including counseling on stunting material to various targets. Penulis tried to make field observations, especially to posyandu cadres who were considered to have a crucial role in the root of the problem of handling stunting. From the question and answer process during the counseling, it was found that posyandu cadres as the spearhead of collecting stunting data in Lengkong Village were unable to calculate the right age, had not been able to make anthropometric measurements correctly, and they were unable to interpret the measurement results on the existing graph, so they were not able to interpret the measurement results on the existing graph, so they were the results of the stunting data obtained are incorrect. This is because the posyandu cadres have never received training to determine and classify stunting. The available equipment facilities and infrastructure are also not by the standards set, there are microta but in its implementation, it is more often used metlin to measure the height and length of children's bodies.

This shows that the obstacles experienced by posyandu cadres are the root of a fairly large problem and are considered more important to be resolved because the success of activities can be monitored in a short time. Thus, the author further narrows the research target to become posyandu cadres and solves problems within the scope of cadres. The dismantling of research targets is also carried out because a posyandu cadre needs to have adequate knowledge and skills to support their role in carrying out their duties. Cadres are considered to have an important role in stunting prevention because posyandu is the closest health service facility and the easiest to reach the community (Has, 2021).

The problem-solving plan offered by the group is to hold anthropometric measurement training with the target of posyandu cadres. The training was carried out with the aim of equalizing the perceptions of all cadres regarding stunting, how to calculate age, how to measure anthropometry correctly, be able to include measurement results on the z-scores chart contained in the back sheet of the Kesehatan Ibu dan Anak (KIA) book, and it is hoped that posyandu cadres can read the graph or interpret the appropriate measurement results.

2. Methods

Participants of counseling and training on anthropometric measurement with the target of posyandu cadres consisting of Kemuning Posts 61 to 68 Lengkong Village, Mumbulsari District, Jember Regency which was held at Lengkong Village Hall. To find out the indicators of the success of the implementation of activities, pre-test and post-test are carried out. The pre-test and post-test results that have been collected are then entered into Microsoft Excel and analyzed using the Statistical Product and Service Solutions (SPSS) application. The Shapiro-Wilk normality test is done first to find out whether the distributed data is normal or not. Furthermore, the Wilcoxon Signed Ranks Test was carried out to investigate whether or not there was an effect of providing stunting material on the difference in pre-test and post-test values.

Then training was carried out, as well as direct practice on how to calculate the age of children, measuring the weight using dacin scales and baby scales, measuring body length using infantometers and height using the correct microtoise and entering the results of age calculations and PB / TB measurements on the PB / TB chart per age or z-scores graph.

The equipment identification sp used is (1) the scales have a maximum capacity of 25 kg, are equipped with a drill cloth used to place babies during weighing, the length of the scale rod is 90 cm, and the main material of the scales is made of brass with a weight of 5 kg, (2) The GEA brand Baby Scale has weight specifications reaching 3-4 kg, equipped with a pointing needle that serves to weigh the baby's body weight with a maximum load capacity of up to 20 kg, (3) The infantometer used is made of oven wood material with a thickness of ± 2 cm, and a weight of up to 3-4 kg. When folded the length is 60 cm, the outer width is 30 cm and the width is within 28 cm, while when not folded the length is 116 cm, and the height of the right and left sides is 9 cm, (4) The microtoise used is a GEA brand with specifications made of plastic with a flexible meter and the writing of the height scale is clear and easy to read. These microtoise are pasted on the wall with a height of 2 meters from the ground level. How to use it by pulling the head measuring brick until it touches the user's head.

3. Result and Discussions

The stunting early detection training was attended by 29 posyandu cadres. With a series of activities, namely (1) pre-test filling, (2) presentation of material on stunting accompanied by anthropometrics, (3) the use of growth charts from the World Health Organization (WHO) which is divided into two classifications, namely female and male graphs, (4) screening of learning videos, and (5) post-tests to see the increase in knowledge of posyandu cadres. The presentation of the material was carried out with interactive communication through question and answer so that two-way communication was formed.

The results of the pre-test and post-test descriptive analysis of 29 posyandu cadres were processed using SPSS. The pre-test results obtained mean values = 76.55, SD = 11.109, median = 80, and IQR = 20, while the post-test results obtained mean values = 92.07, SD = 11.142, median = 100, and IQR = 10, which can be seen in Table 1.

Table 1. Descriptive Analysis

	N	Mean	Sd	Median	IQR
Total Pre-test	29	76.55	11.109	80	20
Total Post-test	29	92.07	11.142	100	10

Then, to see the distribution of data, both Shapiro-Wilk normality tests were used. This test was chosen because the amount of data obtained was less than 50 data (Suyanto, 2018). The results of the Shapiro-Wilk normality test, it is known that the pre-test (p-value= 0.006) and post-test (p-value = 0.000) values are less than 0.05 so the two data are abnormally distributed (Muhson, 2019). The Shapiro-Wilk normality test can be seen in Table 2. Based on the results obtained, parametric statistical tests cannot be used. So that the next statistical test carried out is the non-parametric test

Wilcoxon Signed Ranks Test (Suyanto, 2018).

Table 2. Shapiro-Wilk Normality Test

	N	p-value
Total Pre-test	29	0.006
Total Post-test	29	0.000

Wilcoxon Signed Ranks Test results can be seen in Table 3. Based on the results of the Wilcoxon Signed Ranks Test, the Z value obtained is -4,237 with a p-value of 0.000, less than the critical research limit of 0.05 so that H1 is accepted or there is a meaningful difference between the pre-test and post-test groups (Gumilar, et al., 2019). So that it can be concluded that the development of stunting and anthropometric material is positively and significantly able to increase the knowledge and understanding of posyandu cadres.

Table 3. Wilcoxon Signed Ranks Test

	N	Negative Ranks			Positive Ranks			Ties	Test Statistics	
		n	Mean Rank	Sum of Ranks	n	Mean Rank	Sum of Ranks		Z	p-value
Total Pre-test - Total Post-test	29	2	5.5	11	24	14.17	340	3	-4,237 ^a	0.000

^a Based on Negative Ranks

Based on statistical results, it was found that there was an increase in the knowledge of posyandu cadres after being given treatment in the form of socialization of the presentation of stunting and anthropometric material with powerpoint learning media and learning videos which were seen through the comparison of pre-test and post-test scores. that was worked on. This finding is in line with the results of previous studies that prove that the socialization method is effective in educating and increasing the knowledge of posyandu cadres to overcome stunting problems (Sihite and Rotua, 2022; Has, 2021; Suwarni, et al., 2020). Research conducted by Has (2021) proves that the socialization of material presentation with power point learning media and learning videos results in increasing the capacity of posyandu cadres effectively and efficiently because posyandu cadres not only focus on lecture materials but also involve the existence of learning media in the form of videos and providing case examples so that they can be used as a trigger factor for the increasing knowledge of the cadres. Meanwhile, Sihite and Rotua, (2022) and Suwarni, et al., (2020), emphasized the lecture material delivered through socialization to cadres so that they were able to achieve improvement in terms of knowledge.

The results of these three reflect consistency with the findings of this study, where the selection of methods in delivering material is an important thing that can make activities more effective and efficient, such as the application of the use of powerpoint learning media, learning videos, and providing case examples held in this study so that posyandu cadres are expected to not only absorb the material by becoming active listeners but also seeks to resolve the case given in a plurality.

The importance of the influence of learning media on the level of understanding can be explained using the theory of the cone of experience (experience cone) (Lee and Reeves, 2017). The levels of learning media are (1) hands-on experiences, experiences that are made up, (2) fabricated experiences, (3) dramatic participation, (4) demonstrations, (5) field trips, (6) exhibitions, (7) Educational television / educational videos, (8) moving images, (9) radio recordings, still images (audio with visual images) (10) symbols visual, (11) verb symbols. The lowermost level shows the most concrete type of learning media and the top level is the most abstract. The more concrete the type of learning media, the easier it is to understand.

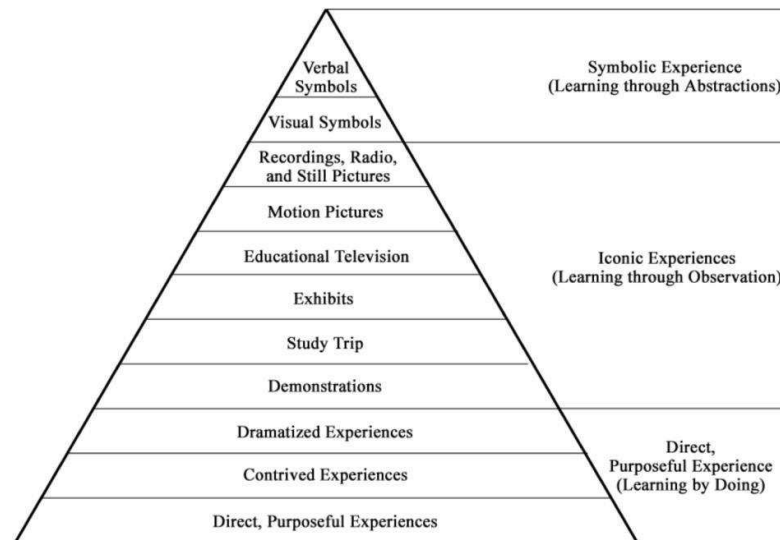


Figure 1. Cone of Experience (Lee and Reeves, 2017)

The implementation of counseling and training activities on stunting in Lengkong Village uses learning media in the form of power points and learning videos including levels 4, 7, 10, and 11 so that this can increase the post-test value of 29 posyandu cadres which is significant because posyandu cadres better understand the material presented.

Furthermore, the practice of anthropometric measurement was only followed by 19 posyandu cadres. The practice of anthropometric measurements based on the theory of cones of experience falls into the category of the 4th level. The purpose of anthropometric measurement practice activities is so that posyandu cadres can precisely and accurately carry out anthropometric measurements and in interpreting measurement data in the measurement graph. During the activity, high measuring equipment is provided namely an infantometer and microtoise) and weight namely dacin and baby scale, so that posyandu cadres are expected to be able to practice directly, according to the material that has been given.

Hands-on practical activities can be carried out smoothly. The speaker explained in advance the good and correct measurement mechanism by directly applying it to the measuring instruments used. The implementation of the two-way communication method between the speaker and the posyandu cadre is very helpful to improve the ability of posyandu cadres. Furthermore, posyandu cadres carry out direct practice using a child. The next activity is the hands-on practice of filling in the growth graph book as well as how interpreting it. This activity can run well and there is an increase in the ability to fill in the growth graph book as evidenced when the speaker gives questions about the interpretation of data on the growth chart, posyandu cadres can answer correctly. According to research conducted by Meinar Sari et al., (2021) that education about stunting detection can significantly increase knowledge about stunting prevention in children.

Apart from the knowledge, the optimization of the performance of posyandu cadres can be influenced by the high motivation of each posyandu cadre (Mediani, et al., 2020). Based on the results of cadre training activities that have been carried out such as practices, simulations, and group discussions in anthropometric materials, the level of enthusiasm of each posyandu cadre in stunting prevention is very high. This motivation shows that the willingness of cadres to prevent stunting has emerged and is based on self-awareness, and is supported by external factors such as positive support from the village-level government, puskesmas, and the community which will affect the activities of posyandu cadres in implementing stunting prevention programs in the community (Sardiman, 2011).

Although there is a limited n found in this study, the data collected are processed and analyzed using statistical science, so that the final results regarding the improvement of cadre knowledge can be measured and compared objectively without any bias in the interpretasi. This can be categorized as an advantage that this study has, compared to several previous studies that did not use statistical tests in the interpretation of their data, such as the research owned by Has, (2021) and Suwarni, et al., (2020).



Figure 2. Implementation of counseling and training

Conclusion and Suggestions

Stunting is a serious problem in Indonesia, especially in East Java when compared to other major provinces. The area in East Java that holds the second highest stunting cases is Jember Regency, one of which is in Lengkong Village, Mumbulsari District. To help solve the problem of stunting in Lengkong Village, Mumbulsari District, Jember Regency, socialization was carried out on stunting and anthropometric understanding with the target of participants from posyandu cadres in Lengkong Village, Mumbulsari District in Jember Regency. The results of the activity showed that there was a significant development in the understanding of stunting by posyandu cadres. In addition, para cadres are also successful in operating anthropometric measuring instruments and interpreting the data in the growth graph appropriately after getting exposure from the speaker which aims to achieve better accuracy when measuring and interpreting measurement results.

Acknowledgments

The authors would like to express their deepest gratitude to Lengkong Village, Mumbulsari District, Jember Regency and to other parties who have helped the authors in completing this article.

References

- Dinas Kesehatan Provinsi Jawa Timur. 2022. BKKBN Gelar Pemantapan dan Strategi Penurunan Stunting- Dinas Komunikasi dan Informatika Provinsi Jawa Timur. Available at: <https://kominfo.jatimprov.go.id/index.php/berita/bkkbn-gelar-pemantapan-dan-strategi-penurunan-stunting> (Accessed: 31 July 2022).
- Dinas Kominfo Provinsi Jawa Timur. 2022. BKKBN Jatim UNICEF Percepatan Penurunan Stunting. Available at : <https://kominfo.jatimprov.go.id/read/umum/bkkbn-jatim-unicef-percepat-penurunan-stuting> (Accessed: 31 July 2022).

- Gumilar, M.G., Istiqlaila, L., and Kharisma, V. A. 2019. Modul Praktikum Statistika Induktif (Uji Wilcoxon, Independent Test, dan Dependent/ Paired Test). Available at: https://www.researchgate.net/publication/333982110_Modul_Praktikum_Statistika_Induktif_Uji_WilcoxonIndependent_Test_dan_DependentPaired_Test (Accessed: 3 August 2022).
- Has, D.F.S. 2021. Pemberdayaan Kader Posyandu Dalam Program Pencegahan Stunting Pada Balita Di Masa Pandemi Covid-19. Indonesian Journal of Community Dedication in Health (IJCDH), 1(02), 7-14.
- Kementerian Kesehatan Republik Indonesia. 2021. Peraturan Presiden Republik Indonesia Nomor 72 Tahun 2021 tentang Percepatan Penurunan Stunting. Jakarta: Pemerintah Indonesia, (1), p. 23.
- Kementerian Kesehatan Republik Indonesia. 2018. Cegah Stunting, itu Penting. Pusat Data dan Informasi, Kementerian Kesehatan Republik Indonesia, pp. 1–27. Available at: <https://www.kemkes.go.id/download.php?file=download/pusdatin/buletin/Buletin-Stunting-2018.pdf>.
- Kementerian Kesehatan Republik Indonesia dan Badan Pusat Statistik. 2019. Laporan Pelaksanaan Integrasi Susenas Maret 2019 dan SSGBI Tahun 2019, p. 69.
- Lee, S.J., and Reeves, T.C. 2017. Edgar dale and the cone of experience. Foundations of Learning and Instructional Design Technology.
- Mediani, H.S., Nurhidayah, K., and Lukman, M. 2020. Pemberdayaan Kader Kesehatan tentang Pencegahan Stunting pada Balita. Media Karya Kesehatan, 3(1), pp. 82-90.
- Meinar Sari, G., Rosyada, A., Himawati, A., Rahmaniar, D., & Budi Purwono, P. (2021). Early *Stunting Detection Education as an Effort to Increase Mother's Knowledge about Stunting Prevention*. Folia Medica Indonesiana, 57(1), 70–75. <https://doi.org/10.20473/FMI.V57I1.23388>
- Muhson, A. 2019. Pedoman praktikum analisis statistik. Yogyakarta: Fakultas Ekonomi Universitas Negeri Yogyakarta.
- Sihite, N.W., and Rotua, M. 2022. Sosialisasi dan Edukasi Kader Tentang Pentingnya Pencegahan Stunting Pada Anak Usia Dini. Wahana Inovasi: Jurnal Penelitian dan Pengabdian Masyarakat UISU, 11(1), 51-56.
- Sasmita, L.C. 2021. Prevention of Childhood Stunting Problems With Mayang-Wati Program. Jurnal Layanan Masyarakat (Journal of Public Services), 5(1), 140–150.
- Sawitri, A.J. 2021. View of Birth Weight and Birth Length Affecting Stunting Incident in Toddler. Original Research Indonesian Midwifery and Health Sciences Journal. Available at: <https://e-journal.unair.ac.id/IMHSJ/article/view/28381/16249>.
- Suyanto, Amal, A., Noor, M., and Astutik, I. 2018. Analisis Data Penelitian Petunjuk Praktis Bagi Mahasiswa Kesehatan Menggunakan SPSS, 1st ed. Semarang: Unissula Press, pp.23-31 & 49-51.
- Suwarni, L., Selviana, S., Octrisyana, K., and Vidyastuti, V. 2020. Pendampingan dan Peningkatan Kapasitas Kader Relawan Stunting di Wilayah Kerja Puskesmas Rasau Jaya Kalimantan Barat. JMM (Jurnal Masyarakat Mandiri), 4(2), 249-255.
- United Nations. 2022. Goal 2 | Department of Economic and Social Affairs. Available at: <https://sdgs.un.org/goals/goal2> (Accessed: 31 July 2022).

- WHO. 2014. Global Nutrition Targets 2025: Stunting Policy Brief. Available at: <https://www.who.int/publications/i/item/WHO-NMH-NHD-14.3> (Accessed: 31 July 2022).
- WHO. 2015. Stunting in a Nutshell. Available at: <https://www.who.int/news/item/19-11-2015-stunting-in-a-nutshell> (Accessed: 31 July 2022).