

THE EFFECT OF SHORT COURSE INTERVENTIONS TO IMPROVE KNOWLEDGE OF POSYANDU (INTEGRATED SERVICE POST) CADRES IN EARLY DETECTION OF STUNTING

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ABSTRACT

Introduction: Stunting is a cumulative growth and development disorder caused by inadequate nutritional intake, recurrent infectious diseases, or both. RISKESDAS data for 2018 recorded a national stunting prevalence of 30.8%, and Dilem Village, Malang Regency, is one of the loci for stunting in Indonesia in 2020. Anthropometry is a growth monitoring method for assessing children's nutritional status and one of the activities at Posyandu, is organized and led by cadres. Hence, it is important to increase the knowledge of Posyandu cadres to achieve the accuracy of children's nutritional status. **Aim:** The goal of this study was to determine the effect of short course intervention in the knowledge levels of Posyandu cadres in Dilem Village on early detection of stunting and anthropometric measurements of child. **Method:** The purpose of this study was to determine the effect of short course intervention in the knowledge levels of Posyandu cadres in Dilem Village on early detection of stunting before and after course This study was a pre-experimental study using one group of pre-posttest designs to assess the knowledge of 20 Dilem village cadres for early detection of stunting and correct anthropometric measurements before and after the intervention. **Result:** The results showed an increase of pre and posttest increase in score 16.5 points ($p < 0.001$). **Conclusion:** So, it can be concluded that short course intervention can improve cadre's knowledge on early detection of stunting.

Keywords: Stunting; Toddler Cadre; Anthropometry; Integrated Healthcare Center

INTRODUCTION

Stunting is a child development disorder, where the child's height is less than other children's heights at the same age in general. The diagnosis of stunting is determined based on length/height according to age which is less than -2 SD on the WHO growth curve (Ministry of Health 2020b; Ministry of Villages, Development of Disadvantaged Regions 2017). In 2017, more than half of the world's stunted toddler were from Asia (55%), while more than a third (39%) lived in Africa. Of the 83.6 million stunted children under five in Asia, South Asia had the highest proportion (58.7%) and Central Asia had the lowest proportion (0.9%) (Data and Information Center Indonesia, 2018).

Indonesia has the third-highest prevalence in the Southeast Asia/South East Asia Region (SEAR), according to the World Health Organization (WHO). Between 2005 and 2017, Indonesia's under-five population had a 36.4% average prevalence of stunting (Data and Information Center Indonesia, 2018). Stunting is nearly as common in Indonesia as it is in other Southeast Asian nations like Myanmar (35%), Vietnam (23%) and Thailand (16%). Meanwhile, according to statistics from the 2018 Basic Health Research, stunting was prevalent in 30.8 % of Indonesian children. This indicates that 8.9 million Indonesian children, or one in three Indonesian children, have suboptimal growth (Basic Health Research, 2018). Therefore, the 2019–2024 National Medium–Term Development Plan

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(RPJMN) establishes four health development targets, one of which is to reduce the prevalence of stunting in children under five from 30.8% in 2018 to 14% in 2024 (Basic Health Research, 2018; TNP2K, 2018).

Stunting develops over time as a result of insufficient nutrition intake, persistent infectious illness, or both. Stunting can take place even before birth as a result of very inadequate nutritional intake during pregnancy, very poor consume patterns, and low-quality food consistent with the frequency of infection, thus inhibiting growth. Stunting does not emerge until the child is 2 years old, despite the fact that malnutrition starts while the baby is still in the womb and in the first few days after birth (Ministry of Villages, Development of Disadvantaged Regions 2017). Stunting may lower the immune system, increase developing infection, obesity, hypertension, increase mortality, cognitive decline, delayed motor development, and imbalances in physical functioning (Febriana et al., 2020). The results of several studies also show that children born with LBW and at a less gestational age have lower IQ scores, worse speaking skills, lower reading ability, and worse school performance (Ministry of Villages, Development of Disadvantaged Regions, 2017).

One of the primary components of the nutrition improvement program, which emphasizes prevention and improvement of child nutrition, is growth monitoring. One of the monitoring of growth is the method of assessing nutritional status, in various ways one of which is anthropometry (Ministry of Health 2020a, 2012a). Anthropometry is one of the most popular methods for direct nutritional status assessment and can be applied to populations with large sample sizes. Anthropometry as an indicator of nutritional status can be carried out by measuring several parameters, while a parameter is a single measurement of the size of the human body. Anthropometry as

an indicator of nutritional status can be done by measuring several parameters, one of which is height or body length. Height is an important parameter of past and present conditions (Ministry of Health, 2012a, 2020b).

Height-for-age Z-Score (HAZ) is an indicator of whether a child is stunted or normal (Ministry of Health, 2020b). Height is an anthropometric measure that describes skeletal growth. Under normal circumstances, height increases with age. The height/age index describes past nutritional status and is closely related to socioeconomic status, but height growth is relatively less sensitive to short-term malnutrition. Children's height or body length can be measured using a height/ body length measuring device with 0.1 cm of accuracy (Supariasa, 2012). One of the primary components of the nutrition improvement program, which emphasizes prevention and improvement of child nutrition, is growth monitoring (Ministry of Health, 2020b).

Torlese (2016) states that one of the causes of cases of malnutrition in the community is due to inadequate access to healthcare and malfunctioning of social institutions in society such as posyandus (Integrated Health and Nutrition Service). There is association between infrastructure, childcare service, community vaccination programs and reduction in posyandu activity has resulted in neglected monitoring of the nutrition of children and pregnant women. In addition, anthropometric measurements at posyandus, which are usually carried out by cadres, show a high level of height and weight errors (Beal et al., 2018; Torlese, 2016). The results of previous research showed that the level of ability, precision and accuracy of data collected by cadres was still low, namely 90.3% of cadres were incorrect in weighing and measuring height (Beal et al., 2018)

Height measurement errors, especially in adjusting the position of the adjusting the child's position in

measurements using an infantometer/stature meter. Consequently, information on children's nutritional status has become inaccurate (Siswati et al., 2022). Posyandu (Integrated health and Nutrition service) is play important role in bridging the gap between healthcare providers and the community by providing information related to health, such as child growth and development (Utami et al., 2019). Posyandu is also a type of Community-Based Health Efforts (UKBM) that is run and organized from, by, for, and with the community in order to implement health development in order to empower the community and give the community ease in accessing essential social and medical services. Integrated Posyandu is a basic family social service activity in the aspect of keeping track on children's growth and development. In practice, it is done in a coordinative and integrative manner as well as mutually reinforcing between programs and activities for the continuity of services at Posyandu in accordance with local situations/needs which in their activities still pay attention to aspects of community empowerment (Utami et al., 2019)..

The tasks of the cadres is to recognize basic health care issues, such as nutrition, maternal and child health, family planning, immunization and prevent infectious disease. Cadres would be much easier to deliver health program because they are closer to the community (Adrian et al., 2016).

Even though a posyandu is a community-based basic health service unit located in the village/sub-district, their role is very decisive in describing the condition of mothers and children nationally. It is necessary to monitor activities in every region through Posyandu Revitalization. At the operational level (village/sub-district, district), monitoring is carried out on a monthly basis, by carrying out field visits or by studying reports submitted by posyandus in their working areas (Ministry of Health, 2012).

According to the number of primary activities carried out by the Posyandu with a 5-table service system or 5-activity steps, the minimum number of cadres for each posyandu is five individuals (Ministry of Health, 2012). Enhancing posyandu services' quality can be done from various aspects, such as improving facilities and infrastructure, human resources, and posyandu implementation activities (Ministry of Health, 2012). Increasing cadres' knowledge of various topics, such as stunting and anthropometry, is one strategy to boost the quality of human resources in order to achieve the accurate nutritional status of children.

Knowledge is one of the cadres' components to improve early detection of malnutrition or stunting in children (Siswati, 2022). Knowledge about stunting must be owned by cadres in carrying out their role at posyandus to prevent and overcome stunting in the community. Health promotion is a step the government is intensifying to prevent stunting and is accomplished through the implementation strategies of empowering, building an atmosphere and advocacy. Community empowerment is a very important part and becomes the spearhead in health promotion. In this case increasing the degree of health is by conducting counseling on increasing the knowledge of cadres on stunting prevention for children (Friska et al., 2022).

The posyandu at Dilem village is designated by the central government as one of the stunting loci in Indonesia in 2020. Dilem Village is recorded as having five posyandus, and these are situated in Kepanjen Health Center' operational region, in Malang Regency.

Based on Decree number HK.01.07/MENKES/319/2020. of the Republic of Indonesia's Minister of Health, regarding the Locus of Activities for Reducing Maternal and Infant Mortality Rates in 2021 and Decree number Kep 42/MPPN/HK/04/2020 of the Minister of National Development Planning Regarding Determination of Regency/City Expansion

of Focus Areas for Integrated Stunting Reduction Intervention in 2021.

Posyandus in Dilem Village are active and crowded. From the data obtained at the Kepanjen Health Center, the five posyandus have a high number of visits, 153 under five in 2020 and 117 under five in 2021. According to the results of a report based on the Basic Health Research (2020), the stunting rate at the Kepanjen Dilem is 21% while for 2021 it decreased to 13.8%. The goal of this study was to determine the effect of short course intervention in the knowledge levels of posyandu cadres in Dilem Village on early detection of stunting and anthropometric measurements of children.

METHODS

A pre-experimental research design with a single group pre-post-test, this study included an intervention method to assess the level of knowledge of respondents about early detection of stunting. The method of intervention is carried out in the form of explanation presentations and skill training in the form of interactive meetings. The inclusion criteria for respondents was posyandu cadres in Dilem Village. The exclusion criteria was other staff in Posyandu Dilem Village who are not in charge of children's healthcare. Interactive skills given to cadres are in the form of teaching about stunting and the correct way to measure height, weight, head circumference, chest circumference, and upper arm circumference. Assessment of the level of knowledge is measured through pre-test and post-test scores, which are carried out by providing 10 questions related to early detection of stunting and anthropometric measurements in Indonesian language. This research was conducted on May 31, 2022, and the subjects of the research were the posyandu's health cadre community in Dilem Village. Questionnaire used in this research was assisted by two public health graduates, two doctors and one nutritionist. The knowledge

questionnaire on stunting prevention cadre contained ten multiple choice questions. The intervention lasted 120 minutes.

Therefore, the intervention method used a short course including health promotion method employing a didactic approach and using PowerPoint and booklets, as well as simulations through miniclass workshops by carrying out measurement simulations with the children who came. The pre-test and post-test results are compared to evaluate the program. Data from the questionnaires were stored in Microsoft Excel Worksheet format and analyzed through the IBM Statistical Package for the Social Sciences/SPSS version 23. The Wilcoxon test was used in this study's comparative analysis.

Material delivered in this short course can increase the knowledge of cadres about stunting, signs and symptoms of stunting, prevention and management of stunting as well as correct and appropriate anthropometric measurements. Materials are provided through the lecture method and using educational videos and booklets as the media. The material in this presentation was obtained from the Ministry of Health's stunting guidelines. The process of delivering the material was followed by a joint discussion which took place in two directions with a duration of 1 hour per session, so that the discussion section participants could ask questions related to stunting. After the process of delivering material and discussion, it then continued with a demonstration/simulation of efforts to prevent stunting, namely by taking anthropometric measurements. The post-test approach is used to evaluate community service activities in order to assess the program's success (questions and answers and filling out questionnaires) to extension participants (cadres). In addition, evaluating the success of the program uses post-test questionnaire. Ethical clearance number 800/214/35.07.103.104/2022.

RESULT

It was found that there was an increase in cadres' knowledge about stunting as a result of the success of the short course. The post-test findings revealed that cadres' knowledge levels were better than they had been before receiving the course. This difference means that through extension activities the participants' knowledge of stunting can be increased. The knowledge level of cadres frequently affects how well they perform.

A total of 20 respondents participated in a series of interventions to completion. Respondents had an average score of 58 before the intervention, which increased to 74.5 (16.15) after the intervention ($p < 0.001$). From a total of 20 respondents, it was found that three respondents received the same score after the intervention. As many as 17 respondents improved their scores on the post-test, and none experienced a decrease in scores.

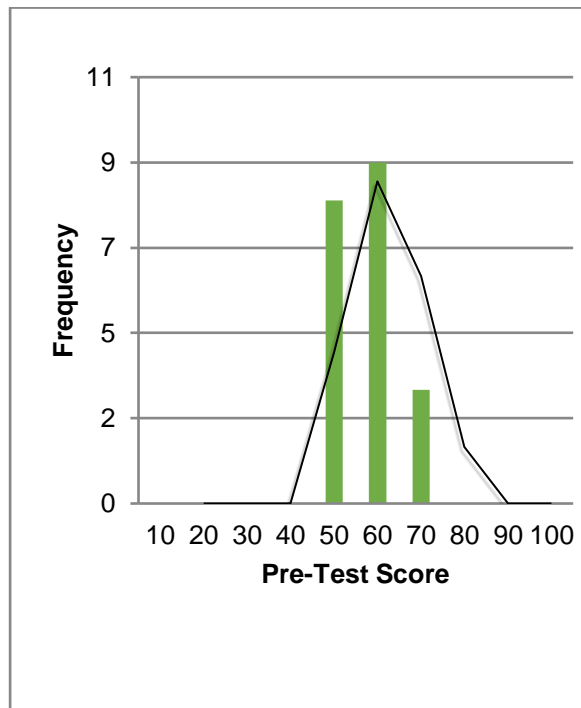


Figure 1. Distribution of Pre-Test Scores at Posyandu in Dilem Village.

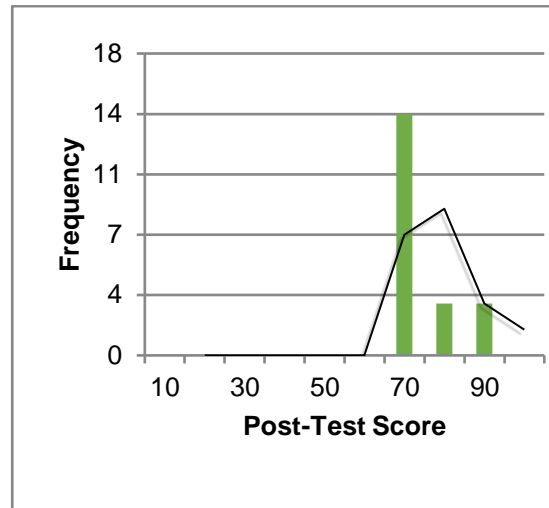


Figure 2. Distribution of Post-Test Scores at the Dilem Village Posyandu.

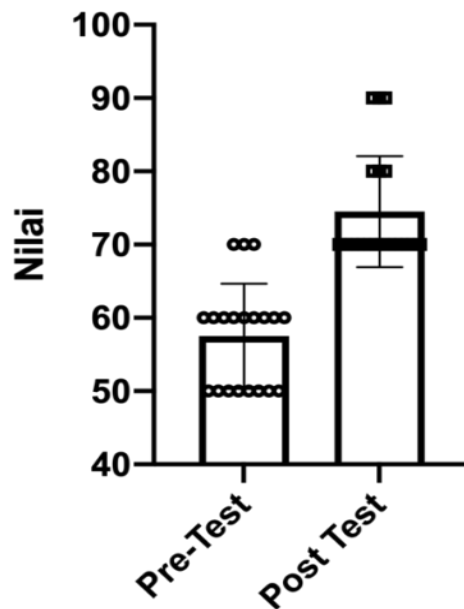


Figure 3. Graph of Intervention Results

Figure 3 shows the boxplot of the respondents' pre-test and post-test scores. The boxplot represents the data distribution, where the data distribution is skewed to the right in both the pre-test and post-test data. The median, 25th, and 75th percentiles of the pre-test data are 58.00, 50.00, and 75.00, respectively. The median, 25th percentile, and 75th percentile values for the post-test data are 74.50, 75.00, and 100.00, respectively.

DISCUSSION

Stunting is responsible for 1.5 million (15%) deaths among children under the age of five worldwide, as well as 55 million Disability-Adjusted Life Years (DALYs). Stunting causes failure to thrive, disrupts brain development resulting in barriers to cognitive and motor growth, as well as suboptimal body sizes and lowered immune systems that make them more susceptible to illness. They also have a higher risk of developing diabetes, heart and blood vessel disease, cancer, stroke, and other disabilities as they age (Ministry of Villages, Development of Disadvantaged Regions, 2017; Stewart, Iannotti, & Dewey 2013).

Stunting may result from a number of issues, such as poor parenting techniques, a lack of ANC (Antenatal Care) or health services for mothers during pregnancy, Post-Natal Care, and high-quality early learning, as well as ongoing access issues for households and families to nutritious food, clean water, and sanitary facilities (Ministry of Villages, Development of Disadvantaged Regions, 2017).

Stunting has been defined as a national priority in planning documents and the Sustainable Development Goals. Some of the planned acceleration strategies entail increasing nutrition surveillance including growth monitoring, increasing access and quality of community services and increasing the role of the community through community-based health efforts such as posyandu and Pos PAUD (TNP2K, 2018). The assessment of nutritional status can basically be carried out using four assessment methods: anthropometric, clinical, biochemical and biophysical (Ministry of Health, 2020b).

Anthropometry is a way of assessing nutritional status related to body size that is adjusted to a person's age and nutritional level. Anthropometry is derived from the Greek words *antrophos*, meaning body, and *metros*, meaning size (Ministry of Health, 2020a). In general, anthropometry

measures the dimensions and composition of a person's body, namely weight, height/length, circumference (measurement of body width, measurement of head circumference, chest circumference, waist circumference, hip circumference, upper arm circumference), and body thickness (measurement thickness of body fat) (Ministry of Health, 2020a).

The nutritional status of a child is evaluated or determined using the Children's Anthropometric Standards. By comparing the findings of measurements of body weight, and length or height with the Child Anthropometric Standards, the nutritional status of children is evaluated. The WHO Child Growth Standards for children aged 0–5 years and The WHO Reference 2007 for children aged five–18 years are referenced in the Anthropometric Standards for Children in Indonesia. Children's anthropometric measures must be taken with standardized equipment and methods (Ministry of Health, 2020a). Through the Decree of the Minister of Health Number 1995/Menkes/SK/XII/2010 about Anthropometric Standards for Assessment of Children's Nutritional Status, Indonesia decided to adopt the WHO standard as an official standard for use as an anthropometric standard for evaluating the nutritional status of children after considering various studies and expert discussions (Ministry of Health, 2020b).

Community members who volunteer to operate the public healthcare center are known as health cadres. They serve as the main pillar for enhancing public health status, particularly in the fight against stunting. Anthropometric measurement skills are one of the necessary skills for cadres to monitor the growth and nutritional status of toddlers. Cadres should also be able to invite families to bring toddlers to Posyandu to widen participation in healthcare services (Ministry of Health, 2012b; Nuari S& Nur Aini, 2020). The performance of the cadres was closely correlated with their characteristics.

In this study, the majority of participants were adults who were married, had completed high school, were housewives, had more than 10 years of experience, had previously undergone a variety of training, and had all taken the whole short course. These results are in line with earlier study, which suggests that factors influencing cadres' performance include age, marital status, knowledge, skills, education, role as housewives connected to free time in community health promotion programs, and working duration (Friska et al., 2022).

This research was same with other research that reported the highest educational level of cadres in posyandus is high school education, and most of them were married and being a housewife (Mediani et al., 2022).

This study observed the effects of providing short course were summarized in booklets distributed on knowledge about early detection of stunting and correct anthropometric measurements in the posyandu cadre community in Dilem village, Kepanjen. Based on the results of the knowledge test through the pre-test and post-test, it was found that there was an increase in scores of 16.5 points ($p < 0.001$) after giving counseling interventions and mini workshops. From a total of 20 respondents who took part in the research to the end, it was found that 17 respondents experienced an increase in value after giving the intervention video. The effectiveness of the short course use of PowerPoint and workshops as well as the booklets that are distributed in increasing the knowledge of an individual is well-known. Another research showed that the offline course consistently increased the cadre's knowledge (Siswati et al., 2022).

The existence of different learning media, namely through the presentation of educational presentations, will be able to help individuals understand the material or information more easily. After the presentation, the presenters provide feedback by asking counseling participants

about the contents of the presentation, and most of them can answer quickly and precisely. This is in accordance with the findings of Hariani's (2020) research, which stated that the ability to utilize media can help clarify the information that has been provided because it is packaged in an interesting, interactive way, has no limitations of space, time and human senses. Submission of information needs to be adjusted to the characteristics of each media used so that the purpose of providing the information can be conveyed more effectively and easily understood.

There are three components that can be considered when creating educational media so that the media becomes effective in conveying information, namely cognitive load, participant engagement, and active learning. Cognitive load consists of intrinsic load, which is determined by the degree of connectivity in learning, germane load, which is the cognitive activity needed so that learning goals are met, extraneous load, cognitive activity that does not help a person achieve learning goals, such as stereotyped learning, unclear instructions, and too much information (Brame, 2016). The recommendation for the cognitive load component to be effective is to use highlights on important keywords in the media and combine auditory and visual modalities. The second component is participant engagement, which can be improved by limiting the duration of video educational media, using regular language, and speaking quickly in an enthusiastic tone. The third component is active learning, which can be generated by adding interactive questions to the video (Brame, 2016).

The concept of health promotion includes efforts to bridge behavior change as well as processes for increasing public awareness of conveying and accessing information in the health sector. Health promotion is a revival of health education from the past. By using empowerment tactics, creating a positive environment, and engaging in advocacy, health can be

promoted. Community empowerment is an important component and driving force behind health promotion. Empowerment is the process of continuously informing people, families, or groups to help clients change from knowing to being aware (knowledge component), from knowing to wanting (attitude component), and from wanting to be able to complete what the behavior teaches (client), and evaluate the client's progress (exercise component). It serves to assist clients in shifting from knowledge to awareness (knowledge aspect), from knowledge to willingness (attitude component), and from wishing to be able to perform the taught behavior.

PowerPoint presentations and workshops can effectively increase short-term knowledge and instill attitudes and will influence the behavior of these individuals to apply what is seen in the workshop, this is because workshop media and booklets can be made into repetitious refreshing media and are able to display information which is accompanied by the application (Latif et al., 2016). One way to improve the knowledge, abilities, and attitudes of cadres is through training (Dahodwala et al., 2018). These results are in accordance with research that conducts training using the BBM method (Learning Based on Problems). Lecture-based training, combined with discussions, simulations and exercises, can increase the knowledge of cadres to carry out anthropometric activities for toddlers in posyandus. This finding is also consistent with the statement by Notoatmojo (2012), that health education in the short term can make a difference and increase the knowledge of individuals, groups and communities (Notoatmodjo, 2012).

Stunting can be prevented in at-risk groups. This prevention can be done by modifying risk factors, especially knowledge about achieving good nutrition, and how to measure correct anthropometric measurements for obtaining the accurate data. Using short course, workshops and distributing materials to cadres in the form

of booklets can improve compliance in justifying anthropometric measurements. Cadres are the spearhead of successful stunting prevention efforts. Cadres can provide information and education about the causes and effects and what efforts can be made to prevent stunting. With this knowledge, it is hoped that parents of toddlers want to bring their toddlers to the posyandu for growth and development monitoring.

There are limitations to the study we conducted, namely the limitation of the sample size. The sample only covers 10% of the population. One factor contributing to this limitation is the limited time available to conduct the research. The limitations of our study mean that the results of the intervention in this study are relatively unrepresentative of the impact of the intervention on the wider population. The lack of a control group and the absence of various other variables connected to cadre knowledge, such as motivation, remuneration, support system, environment, and local government concern, are further limitations of this study. Since this study concentrated on a region with a high prevalence of stunting, outcomes may vary if the study is carried out in regions with a lower prevalence of stunting.

CONCLUSIONS

The results showed that providing intervention using PowerPoint presentations and mini skills could improve cadre's knowledge on early detection of stunting. Short course using power point, mini skill class workshops, and distribution of material booklets as educational tools could increase the knowledge level of posyandu toddler cadres in Dilem Village, Kepanjen, regarding early detection of stunting and correct anthropometric measurements.

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