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The Effectiveness of 'Cermati' Media (Intelligent Measuring Anthropometry) to Increase Knowledge and Skills of Cadres in Stunting Screening

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ABSTRACT

Stunting is still a problem in Indonesia. In 2022, the stunting rate will still be high, namely 21.6%, with the expected national target in 2024 being 14%. The lack of understanding and skills of cadres in anthropometric measurements causes many of the results of weighing, data collection and recording of stunting detection to be inaccurate. The purpose of this study was to determine the effect of 'cermati' media (intelligent measuring anthropometry) to increase knowledge and skills of cadres in stunting screening. The research design was a quasi-experimental design with a pre-posttest with control group design conducted in Blora Regency from June to August 2023. The instrument used is a questionnaire. The population in this study were all cadres in Blora Regency. The sample in this study were 26 experimental respondents and 26 control respondents. Data analysis used the independent t-test. The results showed that there was an effect of the 'cermati' media (intelligent measuring anthropometry) to increase knowledge (p-value 0.000) and skills of cadres in stunting screening (p-value 0.000). Thus, the 'cermati' media (intelligent measuring anthropometry) can be used as an effort to increase knowledge and skills of cadres in stunting screening.
Keywords: media; knowledge; skill; cadre; stunting

Introduction

Progress has been made worldwide in reducing rates of linear growth stunting in children under 5 years of age, although rates remain high in many regions [1]. Based on the results of the Indonesian Nutrition Status Survey (SSGI), the stunting rate in Indonesia in 2022 is still high, namely 21.6%, with the expected national target in 2024 being 14% [2]. In 2018, 100 districts in 34 provinces were designated as priority locations for reducing stunting. One hundred priority districts or cities for stunting intervention in Central Java include Blora District [3]. Based on SSGI data for 2022, the prevalence of stunted toddlers in Blora Regency is still relatively high, namely 25.8%[2].

In efforts to prevent stunting cases, valid data is needed regarding the condition of toddlers, especially when collecting data at posyandu. The lack of understanding and skills of posyandu cadres in anthropometric measurements causes many weighing results, data collection and recording of stunting incident detection to be inaccurate. [3][4].

The results of inaccurate processing of data and information about stunting not only affect the performance of nutrition officers, but also impact decision making and nutrition interventions that do not comply with established Standard Operating Procedures (SOP). Another impact is influencing the performance and quality of health services at community health centers as the spearhead of implementing stunting programs at the district or city level. Apart from that, the formation of negative stigma for families in society is also the impact of errors in informing mothers whose children are detected as stunting [3].

Child anthropometric standards are used to assess or determine a child's nutritional status. Assessment of children's nutritional status is carried out by comparing the results of measurements of body weight and length or height with Children's Anthropometric Standards [5]. Stunting can be diagnosed through the anthropometric index of body length (PB/U) or height (TB/U) according to

age compared with the WHO-MGRS (Multicentre Growth Reference Study) standard with a z-score value of less than -2SD or standard deviation (stunted) and less than -3SD (severely stunted) [6]. This anthropometric measurement is one method of measurement that can be carried out by parties other than health workers, such as cadres [7].

The involvement of cadres in implementing the stunting program is in line with the pillar of handling stunting in Indonesia in point 3, namely convergence, coordination and consolidation of national, regional and community programs. Mentioned in PDTT Ministerial Decree No. 19 of 2017 in point 9, namely the implementation and empowerment of the community in health promotion and sub-districts [8]. However, the government's hopes of obtaining accurate data from the results of growth monitoring at posyandu are hampered by the low knowledge and skills of posyandu cadres in carrying out anthropometric measurements [9].

Posyandu cadres are volunteers and not all of them are specifically trained in anthropometric measurements. There is a significant difference in the accuracy of children's body length and stunting status of children under two years old as measured by cadres and health workers. Body length measurements made by cadres are less accurate than health workers [10]. Based on the research results, it is known that the level of knowledge of health cadres in terms of anthropometric measurements is still lacking [8]. Cadre skills are still lacking, especially in measuring the length or height of toddlers [11]. Several things that have not been done correctly include improper installation of the microtoice, incorrect positioning of the toddler when being measured [12].

Cadres' knowledge and actions in assessing and monitoring the growth of toddlers can be improved through training [13]. So far, cadres have received basic and refresher training regarding service activities at Posyandu using a conventional approach, namely training given through lectures and questions and answers by trainers. One of the weaknesses of conventional methods is that they only increase knowledge, but do not improve the skills of trainees. The methods used in training must be appropriate to the problems, situations and conditions of the trainees, so that cadres' skills in anthropometric measurements can increase [14].

There is a relationship between the level of cadre knowledge about anthropometric measurements and their skills in measuring toddler growth. Skilled respondents have a high level of knowledge with a percentage (88.5%)[15]. To determine nutritional status, cadres and parents must have knowledge of the z-score method to compare the nutritional status of toddlers with anthropometric data. However, cadres and parents who do not have this knowledge will experience difficulties in calculating and knowing the results.

Training activities to measure the nutritional status of toddlers using anthropometry have increased knowledge among mothers and participants supported by participant skills through training and simulation methods which can make a positive contribution in reducing and preventing cases of stunting. [16]. Using the Healthy Towards Card (KMS) is very easy to use as a height measurement tool. However, there are some assessments that are considered difficult, such as reading the growth curve according to gender, determining the month and reading the child's height [17].

Smart media for measuring anthropometry is a booklet media that is equipped with wall-mounted nutritional circle visual aids. This booklet consists of 5 chapters, namely toddlers, nutritional status, stunting, anthropometric measurements, wall-observed nutrition circle manual book. Wall-observed nutritional circle is a tool stunting screening demonstration from anthropometric table conversion based on Minister of Health Regulation (PMK) number 2 of 2020 in the form of a rotating circle attached to the wall of the posyandu, so that interpretation of measurement results can be carried out directly by cadres and mothers of toddlers for female toddlers aged 0-24 months, 25-60 months, and two red variants for male toddlers aged 0-24 months, 25-60 months. By conducting training for health cadres regarding anthropometric assessments, it is hoped that measurement errors can be minimized so that the results can be achieved accurate data in carrying out stunting screening. The aim of this research is to determine the effectiveness of monitoring media (smart anthropometric measurements) to increase cadres' knowledge and skills in carrying out stunting screening.

Methods

This research is a quasi-experimental research with a pre-post control group design. The research was conducted in Blora Regency in June-August 2023. The population in this study was all health cadres in Blora Regency. The sample in this study was health cadres with inclusion criteria: 1) Have never attended anthropometry training; 2) Can read and write 3) Willing to be a respondent. The exclusion criteria in this study are: 1) Respondents who withdrew. The side technique used was purposive sampling with a sample size of 52

respondents consisting of 26 control groups and 26 treatment groups.

The independent variable in this research is media monitoring and the dependent variable is the level of knowledge and skills of cadres in carrying out stunting screening. In the control group, the training was carried out using the lecture method, while in the treatment group the training was carried out using the lecture method and careful media (smart anthropometric measurements), namely a close look booklet with a wall nutrition circle visual aid. The initial condition of the subjects between the treatment group and the control group needs to be compared to determine the homogeneity of the subjects using the Levene's test. The data normality test used Kolmogorov-Smirnov and research data analysis used the independent t-test. This research has received ethical approval by the Semarang Ministry of Health Polytechnic Ethics Commission. 1076/EA/KEPK/2023.

Results and Discussion

Table 1.
Characteristics of Respondents

Characteristics of Respondents	Control group (n=26)		Treatment group (n=26)	
	f	%	f	%
Age				
<20 years	1	3.85	2	7.69
20-35 years	10	38.46	7	26.92
>35 years	15	57.69	17	65.38
Education				
Elementary school	2	7.69	7	26.92
Junior high school	17	65.38	10	38.46
Senior High School	7	26.92	9	34.62
Occupation				
Yes	15	57.69	19	73.08
No	11	42.31	7	26.92
Long time as a cadre				
≤3 years	7	26.92	5	19.23
>3 years	19	73.08	21	80.77

Table 2.
Test of Changes in Knowledge Scores Before and After Treatment

Knowledge	Control group			Treatment group			P
	Min	Maks	Average ± SD	Min	Maks	Average ± SD	
Pretest	35	65	50.58 ±9.932	25	75	51.92 ±13.934	p=0.000[b]
Posttest	50	75	62.12 ±7.372	65	100	84.04 ±8.369	p=0.000[b]
Δ knowledge scor	0	35	11.540 ±9.462	15	65	32.120 ±14.295	p=0.000[b]
P	p=0,000[a]			p=0,000[a]			

Notes :
a = paired t-test
b = independent t-test

Table 3.
Test of Changes in Skill Scores Before and After Treatment

Skills	Control group			Treatment group			P
	Min	Maks	Average ± SD	Min	Maks	Average ± SD	
Pretest	10	60	42.69 ±11.852	10	70	41.54 ±14.613	p=0.000[b]
Posttest	50	70	60.77 ±7.961	70	100	86.15 ±10.228	p=0.000[b]
Δ skills scor	0	50	18.080 ±11.668	20	70	44.62 ±13.923	p=0.000[b]
P	p=0,000[a]			p=0,000[a]			

Notes:
a = paired t-test
b = independent t-test

Respondents in this study were 52 people, consisting of 26 people in the intervention group and 26 people in the control group with characteristics as shown in table 1 below.

Based on table 1, it is known that the majority of respondents' age was >35 years, namely 15 people in the control group (57.69%) and 17 people in the treatment group (65.38%). Most of the respondents' education was junior high school, namely in the control group there were 17 people (65.38%) and in the treatment group there were 10 people (38.46%). Most of the respondents worked, namely in the control group as many as 15 people (57.69%) and in the treatment group as many as 19 people (73.08%). Most of the respondents had been cadres > 3 years, namely in the control group 19 people (73.08%) and in the treatment group 21 people (80.77%).

The initial condition of the subjects between the treatment group and the control group needs to be compared to determine the homogeneity of the subjects between the two groups. The distribution table of subject characteristics shows that there are no differences in age, education, employment, length of time as a cadre between the control group and the treatment group. Based on the test of homogeneity of variance, the Sig value is known. 0.128>0.05, so it can be concluded that the variance of the control group and treatment group data is the same or homogeneous.

The data normality test used in this research was using Kolmogorov-Smirnov, with an Asiymp.Sig (2-tailed) value of 0.200 > 0.05, so it can be concluded that the data is normally distributed. Test data analysis using parametric tests. Data analysis to determine changes in knowledge levels before and after treatment in the control and treatment groups can be seen in table 2 below.

Based on table 2, it can be seen that training using careful media (smart anthropometric measurements), namely the careful booklet with the wall-looking nutritional circle props, is statistically significant in increasing the knowledge level score in the treatment group, namely p0.000<0.05. An increase in knowledge scores also occurred in the control group at posttest, namely p 0.000 <0.05. Based on the difference in pre-test and post-test knowledge level scores in the control and treatment groups using an independent t-test, the result was p of 0.000 < 0.05 so that Ha was accepted and H0 was rejected, there was a significant difference with better results in the treatment group. This means that scrutinizing media is effective in increasing knowledge. Data analysis to determine changes in skills before and after treatment in the control and treatment groups can be seen in table 3 below.

Based on table 3, it can be seen that the media for observing (smart anthropometric measurements), namely the observing booklet with the wall-observing nutritional circle props, is statistically significant in increasing the skill score in the treatment group, namely p 0.000 < 0.05. An increase in stunting screening skills scores also occurred in the control group at post-test, namely p 0.000 < 0.05. Based on the difference in pretest and posttest practice scores in the control and treatment groups using the independent t-test, the result was a p value of 0.000 < 0.05 so that Ha was accepted and H0 was rejected. This means that media monitoring is effective in improving cadres' skills in stunting screening.

Health cadres are people who are selected, willing, able, and have the time and concern for basic social services for the community. Therefore,

training for Posyandu cadres is an effort to increase the capacity and abilities of health cadres [18]. If cadres are not active, the implementation of posyandu can be hampered, as a result, abnormalities in the nutritional status of babies and toddlers cannot be discovered clearly early. Good knowledge and a positive attitude will produce good service. The attitude of cadres in posyandu services shows a positive attitude and will be responsible in carrying out their duties to improve the level of public health [8]

There was a significant difference in the level of knowledge of posyandu cadres before and after being given the intervention. The results of this research are in line with other research that anthropometric training for cadres can increase knowledge [19], attitudes and skills of health cadres regarding early detection and risk factors for stunting [20].

Posyandu cadres' knowledge is related to the precision and accuracy of the results of weighing toddlers. Respondents who have good knowledge have a good level of accuracy of 50% and respondents who have a poor level of knowledge have an accuracy level of 15%[21].

Knowledge comes from the word "know", in the Big Indonesian Dictionary the word knows means, among other things, understanding after seeing (witnessing, experiencing, etc.), knowing and understanding. The knowledge possessed by humans is the result of the efforts they make in searching for the truth or problem they face [22]. Knowledge is everything that is known based on human experience itself and knowledge will increase according to the process of experience that one experiences. According to Bloom, knowledge is the result of knowing, and this occurs after people sense a particular object. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch. Most human knowledge is acquired through the eyes and ears. Knowledge is a very important domain in shaping a person's actions (overt behavior).[23]. Behavior that is based on knowledge will be more lasting than behavior that is not based on knowledge [24].

Training is a short-term education to teach the knowledge, expertise and skills needed to carry out their duties and obligations, thereby contributing to the agency through the skills they have acquired and applied in their work and continuously improving the quality of their work. [25]. The term training in the Big Indonesian Dictionary means process, method, act of training or training work. Furthermore, Syihabuddin Qalyubi, et al explained that training is an effort to develop human resources in an organization [26].

Training using careful media (smart anthropometric measurements) is effective in improving cadres' skills in stunting screening. Observation media is a booklet media which is equipped with a nutrition circle display on the observation wall. The observance booklet consists of 5 chapters, namely toddlers, nutritional status, stunting, anthropometric measurements, nutrition circle wall manual book observance.

The observation wall nutrition circle is a stunting screening demonstration tool from the conversion of anthropometric tables based on Minister of Health Regulation number 2 of 2020 in the form of a rotating circle attached to the wall of the posyandu, so that interpretation of measurement results can be carried out directly by cadres and mothers of toddlers quickly, precisely and accurate. The results of the nutritional status category based on body length index or height according to age (PB/U or TB/U) consist of 4 categories, namely very short (severely stunted), short (stunted), normal, and tall. The wall nutrition circle has four variations, namely two white variants for female toddlers aged 0-24 months, 25-60 months, and two red variants for male toddlers aged 0-24 months, 24-60 months.

Empowering cadres through stunting detection and prevention education can meet expectations and is quite effective in encouraging cadres in the community[21]. The role and function of health cadres need to be improved in efforts to prevent and early detect stunting by providing ongoing guidance, stunting prevention training and giving awards[22].

Conclusion

The results of the research were that the media for observing (smartly measuring anthropometry), namely the observing booklet with the nutritional wall circle visual aids, was effective in increasing knowledge ($p0.000 < 0.05$), and effectively increasing skills ($p0.000 < 0.05$). Thus, observation media can be used as a medium to increase knowledge and skills in stunting screening.

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