



The Effectiveness of Training on Improving the Ability of Health Cadres in Early Detection of Stunting in Toddlers

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Abstract

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AIM: This study aimed to determine the effectiveness of training in improving health cadres' ability in early detection and risk factors of stunting in toddlers.

METHODS: The research method used was a quasi-experimental non-randomized pre- and post-test only control design. The independent variable was cadre training. The training was conducted through learning activities on health cadres using lecture method, question and answer method, and brainstorming accompanied by training booklets/modules and demonstrations. The dependent variable was knowledge, attitudes, and skills in detecting stunting and risk factors for stunting in children under-five. There were 53 health cadres as samples scattered in the Tomini Community Health Center with the purposive sampling technique. The data analysis technique used was a parametric statistical paired sample t-test.

RESULTS: Training of health cadres effectively increased health cadres' ability to detect stunting and risk factors for stunting in children under-five. The different test results for each variable that showed the pre-post-test p-value for knowledge, attitudes, and health cadres' skills were 0.000, smaller than the significance level of 0.05 ($p < 0.05$). Besides, the mean score of each variable obtained after training for health cadres was more significant than before training, including knowledge $17.392 > 12.264$, attitudes $33.603 > 27.226$, and skills $90.019 > 62.113$. Those are means that cadres' training effectively increased the knowledge, attitudes, and skills of health cadres in detecting stunting and risk factors for stunting in children under-five.

CONCLUSION: Training of health cadres effectively increases the knowledge, attitudes, and skills of health cadres about early detection and risk factors of stunting in the working area of Tomini Public Health Centre, Parigi Moutong Regency.

Introduction

The prevalence of stunting of children under-five in Indonesia is the third country with the highest prevalence in the Southeast Asia/Southeast Asia Regional. The average prevalence of stunting under-five in Indonesia in 2005–2017 was 36.4% [1]. The incidence of short toddlers or commonly referred to as stunting, is one of the nutritional problems experienced by toddlers in the world today. In 2017, 22.2% or around 150.8 million children under-five in the world were stunted. However, this figure has decreased compared to the stunting rate in 2000, 32.6% [2].

One of the efforts to create a healthy Indonesian society is by empowering the community or cadres willing to voluntarily get involved in integrated health service post (*posyandu*) issues. Health cadres are one of the community groups that can be empowered in detecting stunting early. Cadre training to increase the ability to perform early detection of stunting and risk factors in toddlers is needed. Education is health promotion to convey health messages to the community, groups, or individuals to hope that the community,

group, or individual can learn better health. In the end, this knowledge is expected to influence behavior. The existence of this promotion is expected to bring about changes in behavior [3], [4], [5].

One of the elements determining increasing cadres' knowledge and skills is learning methods through education [6]. Potential health cadres can improve health status to support development goals and provide services. They can also help individuals and communities adopt healthy lifestyle behaviors [7]. Health cadres play an essential role as the front guard in providing services to the community through Posyandu and outside the Posyandu. However, many cadres do not yet have adequate understanding and skills in carrying out their duties. Posyandu cadres should be able to manage both the Posyandu and outside Posyandu activities properly. Those are due to their understand well the conditions of the needs of their community. Health cadres are people who are chosen, willing, capable, and have the time and concern for basic social services for the community. Therefore, Posyandu cadres' training is an effort to increase health cadres' capacity and capability [8], [9].

This study aimed to determine cadre training's effectiveness in increasing health cadres' ability in early

detection and risk factors of stunting in toddlers in the Tomini Public Health Center, Parigi Moutong District, Central Sulawesi Province.

Methods

This type of research was quantitative research. The research design used was a quasi-experimental non-randomized pre- and post-test only control design. In this study, before giving the treatment, the initial data was collected then given treatment, namely cadre training, then the final data was collected (Figure 1).

This study's population was all cadres in 28 integrated health service posts (Posyandu) in the Tomini Public Health Center (Puskesmas) working area, 140 people. The sampling technique taken in this study was based on non-probability sampling with the purposive sampling technique. The criteria were as follows: (1) Two cadres of delegates from each integrated health service post (Posyandu), (2) never attended a cadre training on stunting, (3) willing to be a respondent, (4) present during the research, and (5) completely attended the training conducted. The total samples used in this study were about 58 cadres.

Data collection

Data collection on knowledge, attitudes, and skills for early detection of stunting and risk factors for stunting was carried out before the cadre training intervention. Intervention using booklets or modules. Data collection on the level of knowledge, attitudes, and skills was carried out after training interventions for health cadres on early detection of stunting and risk factors for stunting.

The nonparametric statistical test used in nominal data is the paired sample difference test using the McNemar test. The independent sample difference test used the Chi-square test.

Results

The description of the respondents' characteristics showed that most of the health cadres

Table 1: Characteristics of respondents

Characteristics	n=53	%
Age		
<25 years	11	20.8
25–34 years	18	34.0
35–44 years	20	37.7
≥45 years	4	7.5
Level of education		
Elementary school	9	17
Junior high school	18	33.9
Senior high school	26	49.1

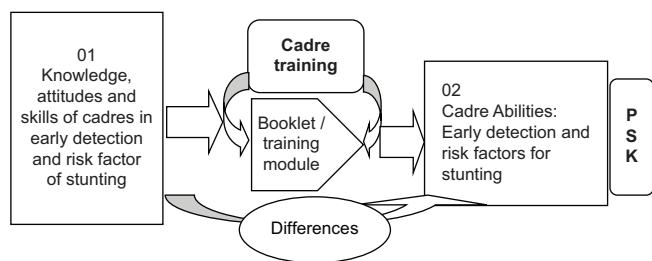


Figure 1: 01 (initial data collection of knowledge, attitudes, and skills, early detection of stunting and risk factors), intervention (training for cadres); 02 (retrieval of final data on knowledge, attitudes, and skills of cadres for early detection of stunting and risk factors)

aged 35–44 years (37.7%) and the lowest were aged ≥45 years (7.5%). The education level of respondents mainly was high school (SMA/SMK) level (49.1%), and the lowest was elementary school graduates (17%) (Table 1).

Figure 2 shows the situation before training (pre-test). Health cadres' knowledge about early detection of stunting and risk factors for stunting in under-5 children was categorized as only 52.8%, categorized as sufficient knowledge. About 5.7% of cadres categorized poor knowledge. However, after training on early detection and risk factors of stunting in toddlers, there was an increase every week until the end of the 3rd week (post-test). At the end of the post-test week, 53 health cadres (100%) were included in the good category.

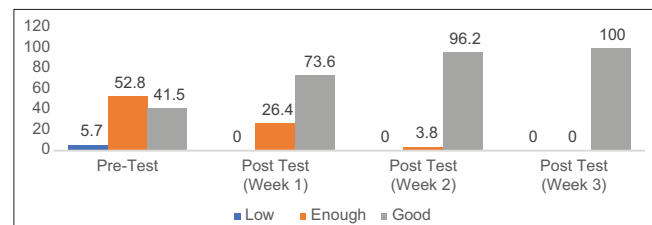


Figure 2: The distribution of health cadres' knowledge level (pre-test and post-test)

Figure 3 shows an increase in the distribution of health cadres' attitudes in the "good category" every week. Before the training of health cadres (pre-test), the attitude of health cadres about early detection and risk factors of stunting in the under-5 majority were "adequate" category (60.4%). The 7.5% of health cadres were still in the "poor" category. However, after being given training, health cadres' attitude every week seemed improved. At the end of the post-test week (Week III), 53 health cadres (100%), health cadres' attitudes about early detection of stunting, and risk factors for stunting in toddlers were included in the good category.

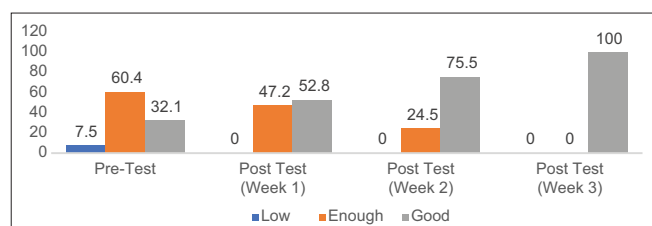


Figure 3: The distribution of health cadres' attitudes (pre-test and post-test)

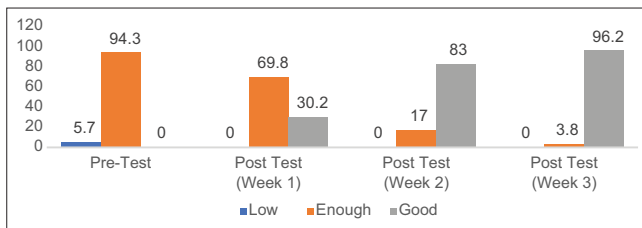


Figure 4: The skills of health cadres' (pre-test and post-test)

Figure 4 shows an increase towards the “good” category every week (Figure 4). Before the training (pre-test), the skills of health cadres’ attitudes about early detection of stunting and risk factors for stunting in under-five were mainly in the “adequate” category, about 94.3%. The remaining 5.7% cadres were categorized “less.” However, after training early detection of stunting and risk factors for stunting in toddlers, health cadres’ skills showed a better change every week. At the end of the post-test week (Week III), the skills of 53 health cadres (100%) about early detection of stunting and risk factors for stunting in children under-five were included in the good category.

Table 2 shows that the knowledge variable before the cadre training intervention (pre-test) was lower than after being given service (post-test) with a mean difference of 5.132. Besides, the t-count value of 14.318 with a significance value (p) = 0.000 was smaller with a significance level of 5% (0.000 < 0.05). It shows that the knowledge of health cadres before and after training health cadres about early detection of stunting and risk factors for stunting was significantly different.

Table 2: Results of paired sample t-test analysis

Variable	Measurement	Mean	Std. deviation	Mean difference	p-value
Knowledge	Pre-test	12.264	2.346	5.132	0.000
	Post-test	17.392	1.915		
Attitude	Pre-test	27.226	3.593	6.377	0.000
	Post-test	33.603	2.741		
Skills	Pre-test	62.113	3.011	27.906	0.000

Table 2 shows that in the attitude variable, the mean value of health cadres’ attitudes before the cadre training intervention (pre-test) was lower than after being provided with service (post-test). The mean difference was 6.377. The results showed the t-value of 13,573 with a significance value (p) = 0.000, p < 0.05. It means that health cadres’ attitudes before and after training of health cadres on early detection of stunting and risk factors for stunting were significantly different. Table 2 shows the average value of health cadres’ skills regarding early detection of stunting and risk factors for stunting before the cadre training intervention (pre-test) was lower than after being given service (post-test). The mean difference was 6.377, and the t-value was 13.573 with a significance value (p) = 0.000. It shows that the significance value (p) was smaller with a significance level of 5% (0.000 < 0.05). It means that health cadres’ attitudes before and after training of health cadres on early detection of stunting and risk factors for stunting were significantly different.

Table 3 shows a significant difference in knowledge from before being given training for health

Table 3: Comparison of the results of the knowledge variable t-test analysis

Variable	Measurement	Mean difference	p-value
Pretest-Posttest week 1	Pre-test	2.151	0.000
	Post-test week 1		
Post-test week 1-post-test week 2	Post-test week 1	1.830	0.000
	Post-test week 2		
Post-test week 2-post-test week 3	Post-test week 2	1.151	0.000
	Post-test week 3		

Table 4: Comparison of the results of the t-test analysis for attitude variables

Variable	Measurement	Mean difference	p-value
Pretest-posttest week 1	Pre-test	2.509	0.000
	Post-test week 1		
Post-test week 1-post-test week 2	Post-test week 1	1.717	0.000
	Post-test week 2		
Post-test week 2-post-test week 3	Post-test week 2	2.151	0.000
	Post-test week 3		

cadres after training at the end of the week. Table 4 shows a significant difference in attitudes from before being given training for health cadres to after being given training at the end of the week. It can be seen from the results of the significance value (p) at the pre-test and week 1, week 1 and week 2, and week 2 and week 3 (post-test) which were smaller than the significance level of 5% (p < 0.05). It means that training health cadres effectively improved health cadres’ attitudes about early detection of stunting and risk factors.

Table 5 shows a significant difference in skills from before being given training for health cadres to after being given training at the end of the week. It can be seen from the results of the significance value (p) at the pre-test and week 1, week 1 and week 2, and week 2 and week 3 (post-test) which were smaller than the significance level of 5% (p < 0.05). It means that training health cadres effectively improved health cadres’ skills in detecting stunting and risk factors.

Table 5: Comparison of the results of the t-test analysis for skills variables

Variable	Measurement	Mean difference	p-value
Pretest-post-test week 1	Pretest	19.528	0.000
	Post-test week 1		
Post-test week 1-post-test week 2	Post-test week 1	4.019	0.000
	Post-test week 2		
Post-test week 2-post-test week 3	Post-test week 2	4.358	0.000
	Post-test week 3		

Discussion

Stunting is a physical growth in height that is not normal according to age. Toddlers who are stunted exhibit chronically ill health, which can be dangerous if left untreated. One of the efforts that can be made to prevent the growth of stunting is through health cadres who are scattered throughout Indonesia. Several studies have shown that empowering communities or cadres who are willing to be involved in voluntary

integrated health service posts (*Posyandu*) can reduce the risk of stunting in children under five [10], [11].

One form of an effort to improve health cadres' ability in early detection of stunting and risk factors for children under-five can be done by training health cadres. It is in line with the results of Yuliani *et al.*, regarding the training of health cadres for early detection of stunting in toddlers in Betting Village. The results showed that increasing understanding of health cadres about early detection of stunting could be done through counseling and training [12]. Other research results show that after training, *Posyandu* cadres can understand the early detection of stunting. In addition, research shows that *posyandu* cadres have a vital role in informing them of optimal nutrition in preventing stunting and identifying risk factors for stunting in the *Posyandu* working area [13].

The results showed a change in the knowledge, attitudes, and skills of health cadres in early detection of stunting and risk factors for stunting in children under-five. The knowledge of health cadres in this study is the cadres' understanding of early detection of stunting and risk factors for stunting in children under-five, attitudes related to the response of health cadres about early detection of stunting, and risk factors for stunting in toddlers. In contrast, skills are related to cadres' ability to measure height/age in toddlers. This research is in line with the results, which show an increase in the health cadres' knowledge; before the activity was, 61.3% cadres had good knowledge and after activity increased to 93.5% [14]. It is in line with the results of the activities that have been carried out. It is seen that the training carried out has increased the knowledge of Family Welfare Movement (*PKK*) cadres trained in the good category by 54.5%. It is following the predetermined success indicators. The training that was carried out effectively increased the knowledge and skills of *PKK* cadres in taking anthropometric measurements [15].

Furthermore, the t-test on health cadres' knowledge, attitudes, and skills regarding early detection of stunting and risk factors for stunting in children under-five showed a smaller p-value than $p < 0.05$. It means that before and after training health cadres on early detection of stunting and risk factors for stunting in toddlers in the Tomini Public Health Center, Parigi Moutong Regency in 2020 was significantly different. Besides, each variable's mean value every week has increased. They indicated that cadre training provides a positive change in health cadres' ability to detect stunting and risk factors for stunting in toddlers. It shows that cadre training effectively increases health cadres' ability to detect stunting and risk factors for stunting in children under-five in the working area of Tomini Public Health Center, Parigi Moutong Regency, Central Sulawesi Province. This study's results are in line with research about the influence of health promotion on

knowledge and attitudes with preventive measures of stunting by *Posyandu* cadres. They found $p < 0.05$ and no significant effect on the control group with $p > 0.05$ [5]. Another study also stated that the average intervention of knowledge, attitudes, and nutrition practices of cadres in the intervention group increased, especially in cadres' nutrition management, increased by 7 points [16]. The assistance results showed that the ability and skills of early detection of the risk of stunting in health cadres increased from 35% to 88% [17].

Conclusion

Training of health cadres effectively increases the knowledge, attitudes, and skills of health cadres about early detection of stunting and risk factors for stunting in the working area of Tomini Public Health Centre, Parigi Moutong Regency.

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