

# THE EMPOWERMENT OF CADRES AND MEDICASTERS IN THE EARLY DETECTION AND PREVENTION OF STUNTING

Evi Martha<sup>1</sup>, Nindy Audia Nadira<sup>1</sup>, Trini Sudiarti<sup>1</sup>,  
Aisyah Putri Mayangsari<sup>1</sup>, Embun Ferdina Enjaini<sup>1</sup>,  
Tika Puspa Ryanthi<sup>1</sup>, Dina Evariyana Bangun<sup>1</sup>

<sup>1</sup>Faculty of Public Health, Indonesia University, Depok, Indonesia

Jalan Prof. Dr. Bahder Djohan, Kampus Universitas Indonesia, Kota Depok, Jawa Barat 16424, Indonesia

Correspondence: Evi Martha ([evimmartha@yahoo.com](mailto:evimmartha@yahoo.com))

## ABSTRACT

Stunting is associated with the increased risk of morbidity and mortality, reduced physical ability, impaired development, and function of children's motoric and mentality. The Indonesian government has initiated a program to prevent stunting in an integrated services post, but it did not involve all aspects of the community. Cadres and medicasters are important parts of the community because they are very close to mothers and the community. This study aimed to improve knowledge and practices of 31 cadres and medicasters in early detection and prevention of stunting and implement their knowledge to the community through lecture, discussion, practice, and film screening methods. There was a significant difference in the knowledge level of cadres and medicasters between pre and post training ( $P = 0.0005$ ) in which knowledge improvement was at 30.68%. In the post training, cadres and medicasters did a Follow-Up Plan (FUP) in the form of stunting outreach and education, particularly to the expectants and mothers, that 124 people got exposed to stunting. To monitor FUP, 3 Whatsapp groups for each village were created as a communication and discussion forum between fellow participants, primary healthcare centers and researchers. The results showed almost all trainees informed the FUP through Whatsapp group, in the form of campaign and education to other cadres and mothers during activities in the integrated services post, Islamic study forum, village activities, sports activities, as well as visit to each family and neighbour, etc. Empowering cadres and medicasters through education on early detection and prevention of stunting could fulfill the expectations and was quite effective to encourage cadres and medicasters in the community.

**Keywords:** stunting, cadres, medicaster, empowerment.

## ABSTRAK

*Stunting berhubungan dengan meningkatnya risiko morbiditas dan mortalitas, mengurangi kapasitas fisik, terhambatnya perkembangan dan fungsi motorik serta mental pada anak. Pemerintah Indonesia telah menginisiasiprogram di Posyandu, namun terlihat belum maksimal karena belum melibatkan semua aspek di masyarakat. Kader dan Dukun bayi merupakan bagian penting dalam masyarakat mengingat peran mereka yang sangat dekat dengan para ibu dan masyarakat. Kegiatan ini bertujuan untuk meningkatkan pengetahuan dan praktik 31 orang kader dan dukun bayi dalam hal deteksi dini dan pencegahan stunting dan mengimplementasikan pengetahuannya ke masyarakat dengan menggunakan metode ceramah, diskusi, praktik, dan pemutaran film. Terdapat perbedaan yang signifikan pada tingkat pengetahuan kader dan dukun bayi antara sebelum dan sesudah diberikan pelatihan stunting ( $P = 0,0005$ ) dengan peningkatan pengetahuan sebesar 30,68%. Pasca pelatihan, setiap kader dan dukun bayi melakukan Rencana Tindak Lanjut (RTL) berupa penyuluhan dan edukasi stunting, terutama pada ibu hamil dan ibu bayi, yang menghasilkan sekitar 124 orang terpapar mengenai stunting. Salah satu upaya untuk memantau pelaksanaan RTL ini adalah dengan membentuk sebanyak total 3 Whatsapp Group untuk masing-masing kelurahan sebagai wadah komunikasi dan diskusi antar sesama peserta dengan pihak Puskesmas dan Tim Peneliti. Dalam pelaksanaannya, hampir seluruh peserta pelatihan menginformasikan kegiatan RTL stunting di grup Whatsapp, berupa sosialisasi dan edukasi ke sesama kader dan ibu pada kegiatan Posyandu, pengajian, kegiatan di kelurahan, sebelum kegiatan olahraga bersama, maupun secara langsung perseorangan ke keluarga atau tetangga, dan lain-lain. Pemberdayaan kader dan dukun bayi, edukasi terhadap deteksi dini dan pencegahan stunting berjalan sesuai dengan harapan dan cukup efektif terhadap peran kader dan dukun bayi dalam masyarakat.*

**Kata kunci:** stunting, kader, dukun bayi, pemberdayaan

## INTRODUCTION

Stunting is often not considered a serious problem. Children will be considered stunted when they have height-for-age more than two standard deviations below the standard median of the WHO Child Growth (WHO 2019). Stunting is the accumulation of malnutrition over a long period of time and indicates public health problems that can increase the risk of morbidity and mortality, reduce physical fitness, inhibit motor and mental development and function. Stunted children have not only lower levels of intelligence, but also lower ratings on motor function, hands and eye coordination, hearing, speech, and performance compared to normal children (Chang et al., 2010). Stunting also often results in stunted mental development, decreased school performance, and reduced intellectual capacity. This can lead to a decrease in country's economic productivity indirectly. Stunted children due to intake or recurrent infections are at greater risks for diseases and even death (UNICEF, 2013). Moreover, children who experience stunting in the first two years of life and gain weight fast, are at high risk of chronic diseases, such as obesity, hypertension, and diabetes (Victora et al., 2008).

The high rate of stunting in children under five is very closely related to other health and socio-economic issues, such as poverty, poor hygiene behavior, poor environmental health, poor parenting, and low levels of education. However, the incidence of stunting should be assessed not only from economic factors and the lack of knowledge of nutrition, but also habits, perceptions, attitudes, and beliefs of the community regarding the nutritional status of children. Even today, it is common to find the perspective that a small or short child is a common thing, even destiny or hereditary (Sabaruddin, 2012).

Mothers who lack nutritional knowledge are 3.264 times at risk of having stunted children compared to mothers with sufficient nutritional knowledge (Picauly and Toy, 2013). Stunting is largely the irreversible result of the inadequate nutritional status and recurrent infections that occur throughout the first 1000 days of life (WHO, 2014). The period between conception and the first two years of a child's life is crucial to the incidence of stunting in the future of adulthood. Martorell and Habitch (2001) in Fuada (2011) stated that stunting was irreversible and continued along with age (retained effect), making it difficult to intervene to pursue the height growth of children (Fuada, Muljati and Hidayat, 2011; Achadi, 2013).

Based on the prevalence, the trends of stunting cases in Indonesia were considered high and only had a slight decrease each year. Based on the 2007 National Basic Health Research, the prevalence of stunting in Bogor city was at 28.3%, still lower than the national prevalence itself (36.8%). However, according to the 2013 National Basic Health Research, the prevalence of stunting in Bogor city increased to 29.8%. This prevalence was considered higher compared to the other regions in West Java province, such as Depok city (25.7%) and Bogor district (28.3%) (Departement of Health, 2009; Ministry of Health, 2013). Furthermore, height measurement among children under five years old is usually done in every three months or six months to identify stunting cases in the community

The prevalence of stunted children in North Bogor in 2017 was 1,387 toddlers (9.4%) (Chairani *et al.*, 2018). To detect and prevent stunting, collaboration from various stakeholders is required, especially those working on nutrition and children's health. The stakeholders involved are not only health workers but also cadres and medicasters (*dukun/paraji*). In Bogor, the number of medicasters was still quite large.

In the primary healthcare centers of North Bogor, three villages (*kelurahan*) had medicasters, including Tanah Baru village, Cibuluh village, and Cimahpar village. The 2016 Bogor city Health Profile explained that midwives and other health workers faced some challenges to coordinate with the medicasters. The demand and cultural influence from the community make them still exist in the community. The medicasters are involved directly during pregnancy and childbirth until the postpartum care. They are trusted to have more experience of delivery and baby caring. Therefore, medicasters and cadres are the right "promoter" to detect and prevent stunting in the community (Bogor City Health Office, 2017).

Cadres have a close connection with the community and are the bridge of health workers for maternal and child health management. They can help and overcome stunting issues according to their capacity. Furthermore, the relatively large number of medicasters potentially can be empowered to detect and prevent stunting (Bogor District of Public Health Office, 2017).

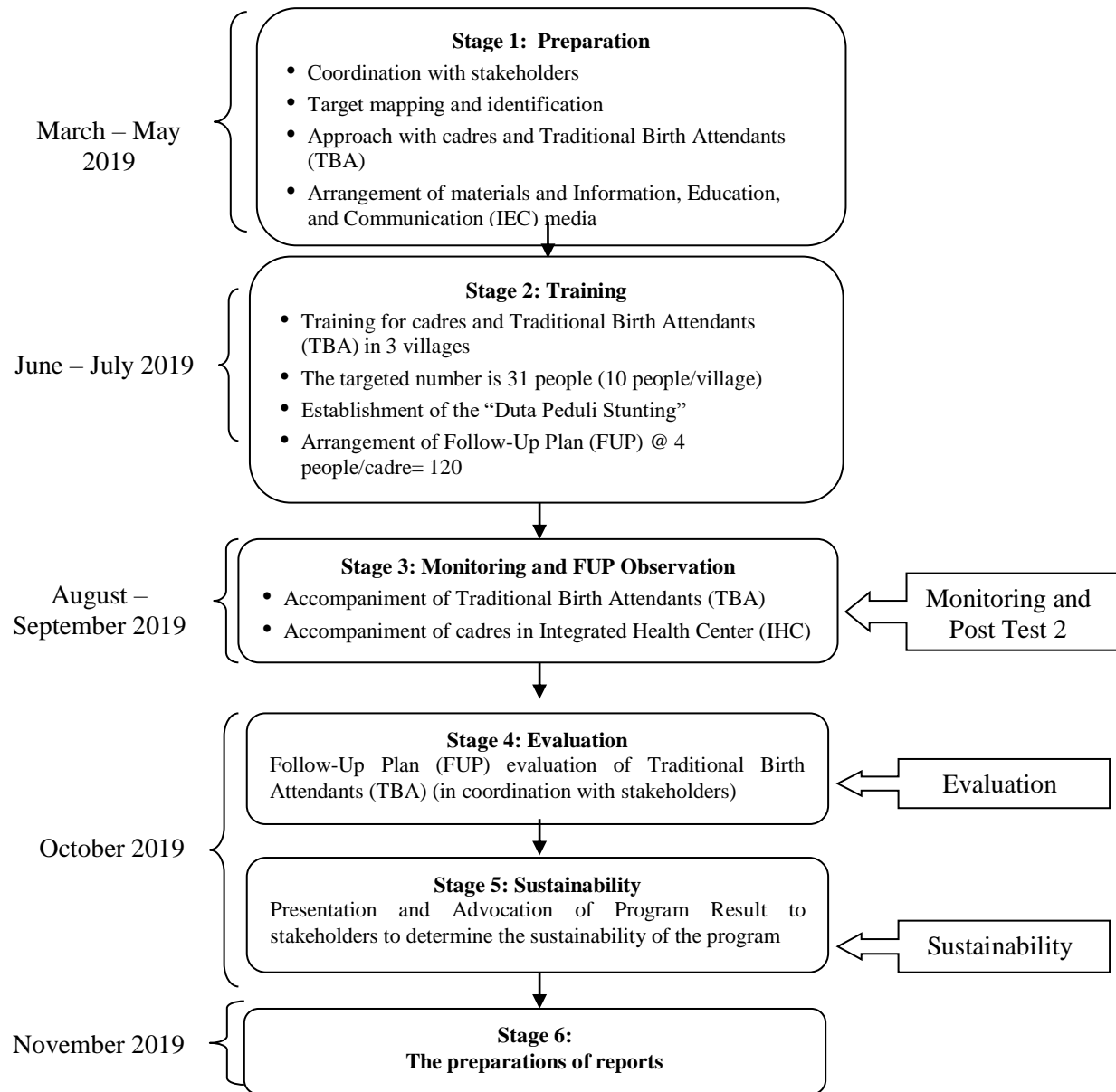
Given this potential of empowering cadres and medicasters, this study aimed to intervene cadres and medicasters to promote prevention and early detection of stunting in North Bogor district which had the highest stunting prevalence in Bogor city. The cadres and medicasters were given a training of stunting expected to give them knowledge to raise awareness of stunting and its prevention among the community, especially prospective and expectant mothers, as well as those bearing under five-children.

## METHOD

This study used a quasi-experimental design without control and was aimed to improve knowledge and practice of 31 cadres and medicasters in terms of early detection and prevention of stunting. The study was conducted in 3

working areas of North Bogor Primary Healthcare Center with 10-11 cadres and medicasters per each. The selection of respondents was done purposively with inclusion criteria, such as active cadres and medicasters who were willing to be respondents and had settled in the working area for at least one year. Training materials included knowledge of stunting; how to detect stunting early; how to measure the length of a baby/height of a baby; stunting prevention methods, such as balanced nutrition, exclusive breastfeeding, healthy lifestyle, environmental health; clean and healthy living behaviour. The training involved lectures, discussions, practices, and film screening methods. The questionnaire consisted of 10 statements/questions with correct or wrong answer options. Correct answers were given 1, and false answers were given 0 with the total score range of 0-10. Change in knowledge was determined from the pre-test and post-test. The questionnaire was formulated from studies on stunting and was modified and adapted to the training materials. As the continuation of the training, cadres and medicasters were expected to implement the Follow-Up Plan (FUP) to the community, such as families and women in childbearing age, whether in activities of integrated services post, social gathering, Islamic study forum, or visit to each of them. Furthermore, the community engagement team of Faculty of Public Health of Universitas Indonesia helped the researchers to manage Whatsapp group formed after the training. This study was ethically approved by No. 1153/III/LPPM-PM.10.05/09/2019

To give a better picture of the intervention, the researchers described it in several stages as shown in Figure 1:



**Figure 1.** Stage Diagram of Program Implementation

## RESULTS

Of thirty-one cadres and medicasters who participated in the training of stunting early detection and prevention, 10 people was from Cibuluh village, 10 people was from Tanah Baru, and 11 people resided from Cimahpar. More than half (54.8%) were over 50 years old. The youngest trainee was 28 years old from Cimahpar village, and the oldest was

75 years old from Tanah Baru. Most participants' education was high school graduates as much as 45.2%; while, those who did not attend school were at 12.9%, and 16.1% were primary school graduates. Some of them were junior high school graduates (22.6%), while only 3.2% graduated from Associate Degree III / Bachelor Degree. Details of the characteristics of the trainees can be seen in Table 1.

**Table 1.** Characteristics of Cadres and Medicasters in North Bogor district

Variable		Cibuluh n=10	%	Tanah Baru n=10	%	Cimahpar n=11	%	Total n=31	%
<b>Age</b>	Mean	60.4		52.6		39.36		50.42	
	Youngest – Oldest	43	70	34	75	28	52	28	75
	> 50 years	9	90	4	40	9	81.8	14	45.2
	≤ 50 years	1	10	6	60	2	18.2	17	54.8
	<b>Total</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>11</b>	<b>100</b>	<b>31</b>	<b>100</b>
<b>Educ ation</b>	Uneducat ed	2	20.0	2	20.0	0	0	4	12.9
	Elementar y school	0	0	5	50.0	0	0	5	16.1
	Junior high school	2	20.0	0	0	5	45.5	7	22.6
	Senior high school	6	60.0	3	30.0	5	45.5	14	45.2
	Diploma III/Bachel or Degree	0	0.0	0	0.0	1	9.1	1	3.2
	<b>Total</b>	<b>10</b>	<b>100.0</b>	<b>10</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>	<b>31</b>	<b>100</b>

The training was began with pre-test questions to cadres and medicasters to find out their knowledge about stunting. The community engagement team assisted to conduct the pre-test by reading questions to the medicasters who then answered each.

Then, the trainees taught cadres and medicaster about stunting. This topic was delivered using a combination of several methods to attract of interest to these cadres and medicasters, for example

lecturing, discussion, practice, and film screening.

Table 2 shows an increase in knowledge of cadres and medicasters in North Bogor district. Before the training, the average pre-test score was at 5.2 for Cibuluh village, 5.6 for Tanah Baru village, and 6.82 for Cimahpar village. After the training, knowledge of each group increased to 7.3 in Cibuluh, 6.5 in Tanah Baru, and 9.18 in Cimahpar.

**Table 2.** Changes in Knowledge of Cadres and Medicasters in Pre-Test and Post-Test

Knowledge	Mean	SD	P-Value
<b>Cibuluh Sub-district</b>			
Before	5.2	2.098	0.008
After	7.3	2.497	
<b>Tanah Baru Sub-district</b>			
Before	5.6	2.914	0.108
After	6.5	3.504	
<b>Cimahpar Sub-district</b>			
Before	6.82	1.250	0.0005
After	9.18	1.168	

Table 2 informs the training on stunting could increase knowledge of cadres and medicasters in Cibuluh village by 1.9 points, from 5.2 to 7.3. The T-test obtained P-value of 0.008, meaning there was significant differences in the level of knowledge before and after training. While, knowledge of cadres and medicasters after the training in Tanah Baru village increased by 0.9 points, from 5.6 to 6.5. It had P-value of 0.108, indicating no significant difference in the level of knowledge before and after training. Finally, the training could increase knowledge of cadres and medicasters in Cimahpar village by 2.36 points, from 6.82 to 9.18. As it obtained P-value of 0.0005, the level of knowledge before and after training showed no significant difference.

**Table 3.** Overall Results of T-test in Changes in Knowledge of Cadres and medicasters Before and After Training

Provision of Training	Mean	SD	P-Value
Before	5.9	2.211	0.0005
After	7.71	2.71	

Based on Table 3, the training on stunting could increase knowledge of cadres and medicasters in Cimahpar village by 1.81 points, from 5.9 to 7.71. The P-value for this group was 0.0005, meaning there was a significant difference in the

level of knowledge before and after training. Furthermore, to find out how much the effect of training on knowledge, the following formula was used:

$$\begin{aligned} \text{Training Effects} &= \frac{\bar{x}\text{Posttest} - \bar{x}\text{Pretest}}{\bar{x}\text{Pretest}} \times 100\% \\ &= \frac{7.71 - 5.9}{5.9} \times 100\% \\ &= 30.68\% \end{aligned}$$

Based on the calculation of the formula, this study found an increase by 30.68% in knowledge of cadres and medicasters after given the training.

Follow-up activities after the training were arranged based on participant agreement. For example, they conduct campaign and education to the community, especially the group of pregnant women, mothers with infants and toddlers, adolescents, and women in childbearing age who were considered at risk. Each trained participant was asked to campaign the subject learned at the time of training to at least 4 other people, if possible especially those at risk.

This study figured out all cadres and medicasters were Muslim; therefore, the community engagement team used a religious approach to encourage them to carry out the follow-up activities to where they lived. Three types of merits in Islam that still continues to afterlife were emphasized to motivate the cadres and medicasters. These include almsgiving, a prayer of a pious child, and useful knowledge. Following this religious values means they have shared useful knowledge to the community.

The monitoring showed campaign and education activities were carried out to Islamic study forum, social gathering, integrated service post activities, sport activities, school breaktime, and visit to each individual. The cadres then shared these activities on Whatsapp group. Such sharing model psychologically could make other cadres do the same thing.

The frequency and implementation of the FUP by the trainees are summarized in Table 4:

**Table 4.** Follow-Up Plan (FUP) Implementations in Cimahpar, Tanah Baru, and Cibuluh village, North Bogor district

No.	Cadre/ TBA	Village	Activity Date	Activity Target
1	13 Activities	Cibuluh	26/07/19 s/d 27/08/19	Communication to cadres, groups of mothers, sport activities, parents' forum, school breaktime, social gathering, infant's family development events, the village head, pregnant women and breastfeeding mothers
2	15 Activities	Cimahpar	19/07/19 s/d 19/08/19	Counseling for pregnant women, mothers who bear babies, toddlers on various occasions such as Islamic study forum, school breaktime, integrated service post activities, pregnant women, social gathering
3	9 Activities	Tanah Baru	20/07/19 s/d 25/08/19	Pregnant mothers' class, integrated service post activities, early childhood education, nursing mothers, social gathering

In general, each participant conducted their FUP to the group. With the target of 4 people informed about stunting, the cadres and medicasters had reached 124 people. However, they in fact conducted the follow-up activities in groups, so there were 106 people educated about stunting.

## DISCUSSION

The results of this study showed an increase in knowledge of cadres and medicasters before and after training on early detection and prevention of stunting. Before the training was conducted, most cadres only had the basic knowledge of stunting, but medicasters did not have any idea about stunting to the low level of education. In other words, the medicasters had no formal educational background. After the training, both the cadres and medicasters had better knowledge and practice of stunting early detection and prevention.

The methods used in the training included lecture, discussion, practice, and film screening. These various methods aim to support the shortcomings of other methods. Nursalam (2008) mentioned lecturing as an educational method could convey information to the target group

orally. This method can reach large groups, but does not involve many instruments that the educators are easier to explain training materials. However, this method tends to make students passive, hinder their critical thinking, unable to control students' understanding due to long teaching duration (Nursalam, 2008; Simamora, 2009).

To minimize these shortcomings, the community engagement team combined lecture methods with discussions, practical work, and film screenings. Discussion can encourage students to think more critically and express their opinions during training activities. This method makes it easy for participants to ask difficult questions and facilitate educators in measuring to which extent students understand the topic discussed. While, practice is the demonstration of objects, events, rules, or sequences to do an event, both direct and indirect means, such as with the help of media relevant to the topic. The combination of these methods was expected to increase the understanding of cadres and medicasters about stunting. Similarly, Astuti (2013) found the combination of interactive lecture and demonstration methods with visual aids had a great effect on the increase in students' knowledge and skills (Simamora,

2009; Astuti, 2013).

After the training, the statistical tests showed that lecture, discussion, practice, and film screenings about stunting could affect knowledge of cadres and medicasters about stunting early detection and prevention. This was consistent with the study conducted by Adistie, et al. (2018) which found an increase in knowledge of cadres after training on training with lecture and demonstration methods (Adistie *et al.*, 2018). Similarly, Wahyurin, et al. (2019) found education with audiovisual methods (film screenings) could increase knowledge of stunting (Wahyurin *et al.*, 2019).

Knowledge is an important domain for growing individual's behavior (Notoatmodjo, 2012). With the increase in knowledge after the training, the cadres and medicasters can engage actively in the early detection and prevention of stunting in North Bogor district, Bogor city.

After the training was given, the community engagement team encouraged the cadres and medicasters to re-educate the community in their respective villages. Based on the report shared in WhatsApp group, almost all cadres and medicasters carried out their FUP as they were motivated from religious values that they believe. In conclusion, religious motivation could encourage was also proven successful in the previous community engagement activities that used the same approach (Martha, no date).

This was related to the theory of Newcomb (1950) which stated that individual's behavior was influenced by his personality shaped by a religion-based culture (Soekanto and Sulistyowati, 2015). Besides, some predisposing factors, such as knowledge, beliefs, values, etc affected individuals' behavior. (Green and Kreuter, 2005). Therefore, knowledge and religious beliefs could encourage the cadres and medicasters to engage in the early detection and prevention of stunting.

## CONCLUSION

It could be concluded that there is a significant difference in the level of knowledge of cadres and traditional birth attendants before and after stunting training (p-value = 0.0005) with an increase in knowledge at 30.68%. It could also be concluded that the religious motivation approach used is effective to encourage cadres and traditional birth attendants (TBA) to socialize about stunting to the community as the Follow-Up Plan (FUP) of the program, particularly to those at risk of stunting (more than 120 people receive socialization about stunting). Considering the effectiveness of this program, hopefully this activity can be carried out sustainably for cadres and traditional birth attendants who have not received education related to early detection and prevention of stunting.

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