

## ORIGINAL RESEARCH ARTICLE

# Assessment of the implementation of early detection of children's growth and development by midwives

DOI: 10.29063/ajrh2024/v28i10s.6

Aysha H. Ngestiningrum<sup>1</sup> and Mochammad B. Qomaruddin<sup>2\*</sup>

Doctorate Degree Program in Public Health, Faculty of Public Health, Universitas Airlangga, Surabaya 60115, Indonesia<sup>1</sup>; Division of Health Promotion and Behaviour Sciences, Public Health Faculty, Universitas Airlangga, Surabaya, 60115, Indonesia<sup>2</sup>

\*For Correspondence: Email: [bagusqomaruddin@fkm.unair.ac.id](mailto:bagusqomaruddin@fkm.unair.ac.id); Phone: +62812 3227 665

## Abstract

In Indonesia, the SDIDTK (Stimulation of Early Detection and Intervention of Growth and Development) program aims to monitor children's growth and development. SDIDTK monitors growth, encompassing body weight, height, and head circumference. It also monitors development, which includes a development test using KPSP (Developmental Pre-Screening Questionnaire), sight test, hearing test, and emotional-mental development test. This study analysed midwives' application of early growth detection services in Magetan Regency, Indonesia. It used a mixed-method approach. This quantitative study assessed the application of early detection by surveying 53 randomly selected village midwives. The qualitative study was conducted by interviewing 8 participants. The results showed that about 43.9% of midwives falsely reported providing SDIDTK services even when they only monitored the growth aspect without monitoring children's development. Midwives are helped by cadres who undergo routine growth examinations. Unfortunately, development detection is not routine. The challenges in implementing developmental detection included heavy workloads, limited time, and limited human resources. Other influential factors include the lack of intersectoral cooperation and the fact that societal empowerment have not optimally been established. The SDIDTK program's implementation remains suboptimal. The authors concluded that midwives should improve cross-sector collaboration, empower communities, and set standards for community midwifery care. (*Afr J Reprod Health* 2024; 28 [10s]: 50-60).

**Keywords:** Early detection; children's growth; children's development; midwives; Indonesia

## Résumé

En Indonésie, le programme SDIDTK (*Stimulation of Early Detection and Intervention of Growth and Development*) vise à surveiller la croissance et le développement des enfants. Le programme SDIDTK surveille la croissance, englobant le poids corporel, la taille et le périmètre crânien. Il surveille également le développement, qui comprend un test de développement utilisant le questionnaire de pré-dépistage du développement (KPSP), un test de la vue, un test auditif et un test de développement émotionnel et mental. Cette étude a analysé l'application des services de détection précoce de la croissance par les sages-femmes dans la régence de Magetan, en Indonésie. Cette étude a utilisé une approche à méthode mixte. Cette étude quantitative a évalué l'application de la détection précoce en interrogeant 53 sages-femmes de village sélectionnées au hasard. Parallèlement, l'étude qualitative a été menée en interrogeant 8 participants. Les résultats ont montré qu'environ 43,9 % des sages-femmes ont faussement déclaré fournir des services SDIDTK même lorsqu'elles ne surveillaient que l'aspect croissance sans surveiller le développement des enfants. Dans l'exercice de ce travail, les sages-femmes sont aidées par des cadres qui subissent des examens de croissance de routine. Malheureusement, la détection du développement n'est pas effectuée systématiquement. Les défis liés à la mise en œuvre de la détection du développement incluent la lourdeur des charges de travail, le manque de temps et les ressources humaines limitées. Il existe également des facteurs d'influence, tels que le manque de coopération intersectorielle et le fait que l'autonomisation de la société n'a pas été établie de manière optimale. La mise en œuvre du programme SDIDTK reste sous-optimale. Les auteurs ont conclu que les sages-femmes devraient améliorer la collaboration intersectorielle, responsabiliser les communautés et établir des normes pour les soins de sage-femme communautaire. (*Afr J Reprod Health* 2024; 28 [10s]: 50-60).

**Mots-clés:** Détection précoce; croissance des enfant; développement des enfant; sages-femme; Indonésie

## Introduction

Children are the next generation that will become leaders of the nation. The nation needs quality children for a brighter future. Good attention must

be given to the growth and development of children, especially during toddler years (under five years). The first five years of life mark the golden period of a child's life. At this stage, although brief, children are sensitive to their environment and their brains

are particularly plastic compared to adult's brains. Thus, toddlers are very receptive and sensitive to receiving various teachings and enrichments, both negative and positive<sup>1</sup>. Toddler's development will become optimum when the environment provides adequate positive support<sup>2</sup>.

The enormous number of toddlers has a role in determining the country's future. Indonesia Statistics (*Badan Pusat Statistik/BPS*)<sup>3</sup> reported that there were an estimated amount of 30.73 million early-age children in Indonesia in 2022. This amounted to 11.21% of the total Indonesian population in the same year. This large number is a national treasure that must be well-guarded for a better generation.

It is important to pay attention to children's growth and development. In 2020, globally, 149.2 million toddlers suffered from stunting, 45.4 million suffered from wasting, and 38.9 million suffered from obesity worldwide<sup>4</sup>. The results of the Indonesian Basic Health Research in 2018 showed that in this country, for toddlers aged 0-59 months, the percentage of very short toddlers was 11.5%, while the percentage of short was 19.3%. Among toddlers aged 0 to 59 months, the prevalence of malnutrition in Indonesia was 3.9%, while the prevalence of nutrition deficiency was 13.8%.

Global/worldwide data from the World Health Organization showed that 52.9 million toddlers suffered from developmental retardation<sup>3,4</sup>. Around 95% of them originated from low to middle-income countries. South Asia had the highest prevalence of children with developmental disabilities in 2016<sup>5,6</sup>. It was shown that more than 200 million toddlers in the world are estimated to suffer from cognitive and social-emotional development issues<sup>7</sup>. The data from the Three-Month Report of Mothers' and Children's Health (LB3KIA) of Magetan Regency, East Java, Indonesia in 2021<sup>8</sup> provided an illustration of the cases of development deviance/retardation. In the rough motoric sector, there were 8 cases (2.58%), while for the fine motor skills sector there were 3 cases (0.67%). Then, for the speech-linguistic sector, there were 11 cases (2.92%); for the socialization-independence sector there were 4 cases (1.24%); for the vision detection test, there were no cases; for the hearing detection test, there was one case (0.19%); and for mental-emotional issues, there were 6 cases (1.70%). Meanwhile, the results of an initial survey directed to 65 midwives

in charge of villages in February 2023 showed that there were 113 cases of child development retardation.

One of the efforts ensuring the optimum development of children in Indonesia is the monitoring of their growth and development. Children's growth and development monitoring is one of the responsibilities of midwives. This activity is included in the Midwife Care for babies, toddlers, and preschoolers.

The Republic of Indonesia has established a program called SDIDTK (*Stimulasi Deteksi dan Intervensi Dini Tumbuh Kembang*/Stimulation of Early Detection and Intervention of Growth and Development). It aims to detect the health, growth, and development levels of toddlers in Indonesia. Each city/regency in Indonesia has Community Health Centers. These health facilities also facilitate SDIDTK health check-ups for toddlers in the villages which are called integrated service posts. In each of these integrated service posts, some women are assigned to become cadres. Their job includes checking toddlers' height and weight; giving information to society on how to raise children properly; preparing facilities for pregnant women to obtain checkups by midwives; preparing facilities for toddlers who will be vaccinated by midwives; taking notes of toddlers' progress and growth; etc.

SDIDTK is a program to monitor the growth and development of children from 0 to 72 months of age<sup>9</sup>. This program was a development from the DDTK (*Deteksi Dini Tumbuh Kembang Anak*/Early Detection of Children's Growth and Development) program that has been applied in Community Health Centers all over Indonesia since 1995. In 2014, the DDTK Program was developed into SDIDTK. In carrying out such activities, Community Health Centers undergo coordination based on village area. Midwives are assigned to be responsible for villages when acting as the coordinator of this activity. Midwives responsible for village areas report this activity to the Community Health Centers. Then, every Community Health Center will report this to the Regency Health Service which will then report to the Provincial Health Service<sup>10</sup>.

SDIDTK's programs include monitoring the growth and development of children. The detection of growth includes body weight, height, and head circumference. Then, the detection of development encompasses detecting development

using KPSP (*Kuesioner Pra-Skrining Perkembangan/Growth Pre-Screening Questionnaire*), sight ability test, and hearing test. Then, there are also early detections of emotional behavior, early detection of autism using the M-CHAT (Modified Checklist for Autism in Toddlers) questionnaire, and early detection of attention deficit disorder and hyperactivity using the Abbreviated Conners Rating Scale.

Growth monitoring is scheduled each month. The early detection of child development has its own schedules based on the type of examination. Development examination using the KPSP is carried out every three months for toddlers aged 0 to 24 months and every six months for toddlers aged 24 to 72 months. Sight capability tests are scheduled every six months for ages 36 to 72 months. Then, hearing tests are carried out every three months for babies aged 0 to 12 months. Next, in ages 12 to 72 months, it is carried out every six months. The early detection of mental-emotional issues is scheduled annually for toddlers aged 36 to 72 months. Then, the early detection of autism and attention deficit disorder is carried out in case there are complaints from parents or family members<sup>9</sup>.

This SDIDTK is carried out along with the Integrated Service Post activity (*Pos Pelayanan Terpadu/Posyandu*). Posyandu is a form of societal empowerment in the sector of child and maternal health, nutrition, and immunization. Integrated Service Posts are formed by village societies in collaboration with health officers from the Community Health Centers. Representatives from society that are involved in organizing the Integrated Service Post activities are called cadres. These cadres are volunteer health workers. Then, the health workers who are responsible for this Integrated Service Post activity are village midwives<sup>11</sup>.

The SDIDTK program's service target is 100%. Based on data from the Indonesian National Health Profile in 2021, the percentage of toddlers who received the SDIDTK service in Indonesia was 57.6%<sup>12</sup>. In East Java Province, it was 61.8%<sup>7</sup>, while in Magetan Regency, East Java, it was 89.32%. Magetan Regency still has not succeeded in achieving the SDIDTK service target. The initial study in 2023 on 15 Integrated Service Posts in Magetan Regency showed that all Integrated Service Posts carried out routine growth detections according to the schedule. There were only four

Integrated Service Posts that routinely carries out early detection of child development (26.7%). Meanwhile, 11 Integrated Service Posts (73.3%) only carry out developmental detection in cases where there are complaints from parents. The objective of this study is to analyse the application of SDIDTK in the Magetan Regency.

## Methods

This research was conducted in August 2023 in Magetan Regency, East Java Province, Indonesia. This location was chosen because there were still many villages with a low rate of SDIDTK achievement. Five Community Health Centres with the lowest SDIDTK target achievement in the Magetan Regency were chosen, namely the Maospati, Ngujung, Panekan, Taji, and Candirejo Community Health Centres. This research employed the mixed method. The study also received ethical clearance with number 873/FH/A.3-II/X/2023 from the Muhamadiyah University of Surakarta, Central Java Province, Indonesia.

The first stage of the study was quantitative, while the second stage was qualitative. The first stage involved midwives in charge of villages from five Community Health Centres with the lowest SDIDTK target achievement in Magetan Regency. In the first stage of the quantitative analysis, the population consisted of 62 midwives who implemented the SDIDTK. The number of samples was determined using the Slovin formula. Thus, the authors obtained 54 midwives as samples. The samples were midwives who implemented the SDIDTK and were willing to participate in the survey. Fifty-four respondents were randomly chosen. The data on the implementation of the early detection of the child's growth and development (characteristics of midwife respondents, integrated service posts and their cadres in each village, cadres' involvement in SDIDTK, and the involvement of societal units in SDIDTK other than integrated service posts) were presented descriptively.

In the second stage, qualitative research was conducted, by involving 8 participants which were chosen through the purposive sampling method. The chosen midwives were those who implemented the SDIDTK, who were also midwives who were responsible for village areas. These midwives must

have had experience becoming the midwife in charge of a certain village area for at least one year and must be willing to participate in the research. Four midwives in charge of villages were involved through in-depth interviews. In this research, the authors conducted in-depth interviews with midwives in charge of village areas after obtaining their approval to become participants. The authors conducted interviews using an interview guideline that contained the challenges they faced while implementing the SDIDTK. Data triangulation was implemented on three coordinator midwives and one person from the Health Service (in charge of SDIDTK). The qualitative data that were obtained through these in-depth interviews were processed through the transcription of interview results, reduction, coding, categorization, and thick description.

In the qualitative research, the data validity was carried out during the research process. Qualitative validity was an examination effort towards the accuracy of research results by determining certain procedures. Qualitative reliability was a stage which indicates that the approach used by the researcher was consistent. The data validity in this research was checked using the triangulation method. The data triangulation was applied using data obtained from various sources by comparing and rechecking data obtained from one participant and another. In this research, the authors conducted data triangulation on the data that were obtained from in-depth interviews with midwives in charge of village areas and Health Service officers that are in charge of the SDIDTK.

**Results**

***Midwives’ implementation of the SDIDTK***

The table below shows the characteristics of the respondents involved in the quantitative research. The majority of the midwives were aged 36 to 40 (42.6%) with the education level of Associate’s Degree of Midwifery (85.2%) and had worked from 11 to 15 years (38.9%). The midwives were categorized as senior and mature with many years of experience working as midwives. Most of the respondents had the education level of an Associate’s Degree in Midwifery. Midwives’ area of competence included the ability to undergo early detection of children’s growth and development.

**Table 1:** Characteristics of midwife respondents

No	Characteristic	Total f(x)	%
1	Age	26-30	4 7.4
		31-35	11 20.4
		36-40	23 42.6
		40-45	7 13
		46-50	5 9.3
		More than 50	4 7.4
		<b>Total</b>	<b>54 100</b>
2	Education	Associate’s degree in Midwifery	46 85.2
		Bachelor of Midwifery	8 14.8
		Applied Science	
		<b>Total</b>	<b>54 100</b>
3	Working experience as midwives (years)	1-5	15 27.8
		6-10	6 11.1
		11-15	21 38.9
		16-20	7 13
		21-25	2 3.7
		26-30	3 5.6
		<b>Total</b>	<b>54 100</b>

**Table 2:** Integrated service posts and their cadres in each village

The number of	Mode	Standard Deviation	Minimum	Maximum
Integrated service posts	4	1.530	1	8
Cadres	20	8.083	5	40

The SDIDTK is often carried out simultaneously at Integrated Service Posts for Toddlers. Table 2 presents the number of Integrated Service Posts and their cadres.

On average, every village had four Integrated Service Posts with 20 cadres. Based on this data, this means that each integrated service post had 5 cadres.

As shown in Table 3, during the measurement of body weight and height, 100% of the midwives involved cadres. In the development detection, it was shown that cadres have a rather small or insignificant involvement.

Most midwives (64.8%) stated that no societal units other than cadres helped the implementation of the SDIDTK. But 22.2% stated that the implementation of the SDIDTK was aided by BKB (*Bina Keluarga Balita/Toddler Family Service*) and PKK (*Pemberdayaan dan Kesejahteraan Keluarga/Family Empowerment and*

**Table 3:** Cadres’ involvement in SDIDTK

No.	Role	Details	Amount	Percentage
1	Growth detection	Body height/body length	54	100
		Weight	54	100
		Head Circumference	47	87
2	Development Detection	KPSP ( <i>Kuesioner Pra Skrining Perkembangan/Developmental Pre-Screening Questionnaire</i> )	16	29.6
		Vision detection	12	22.2
		Hearing detection	12	22.2

**Table 4:** The involvement of societal units in SDIDTK other than integrated service posts

No.	Societal Units	Total	Percentage
1	Not available	35	64.8
2	BKB ( <i>Bina Keluarga Balita/Toddler Family Service</i> )	11	22.2
3	PKK ( <i>Pemberdayaan dan Kesejahteraan Keluarga</i> Family Empowerment and Welfare)	5	9
4	Others	3	5

Welfare) cadres. BKB are cadres from the Service of Population Control, Family Planning, Women’s Empowerment, and Child Protection that manoeuvres in detecting child growth and development.

In the questionnaire, the authors asked researchers on whether or not they have faced a condition where children’s growth was the only aspect examined without examination of their development. It was found that 100% of respondents answered “yes”. Then, the researchers asked whether or not these children were reported to have already obtained complete SDIDTK services. Results showed that 43.59% of respondents stated that complete SDIDTK was reported, while the rest reported that these children did not obtain complete SDIDTK services. SDIDTK services are deemed complete if they encompass two things, namely growth and development. Twenty-three midwives (43.59%) admitted to still report a complete implementation of SDIDTK services even though they have only performed growth detection. In conclusion, about 43.9% of the midwives falsely reported providing SDIDTK services even when they only monitored growth.

**Challenges midwives face in implementing the SDIDTK**

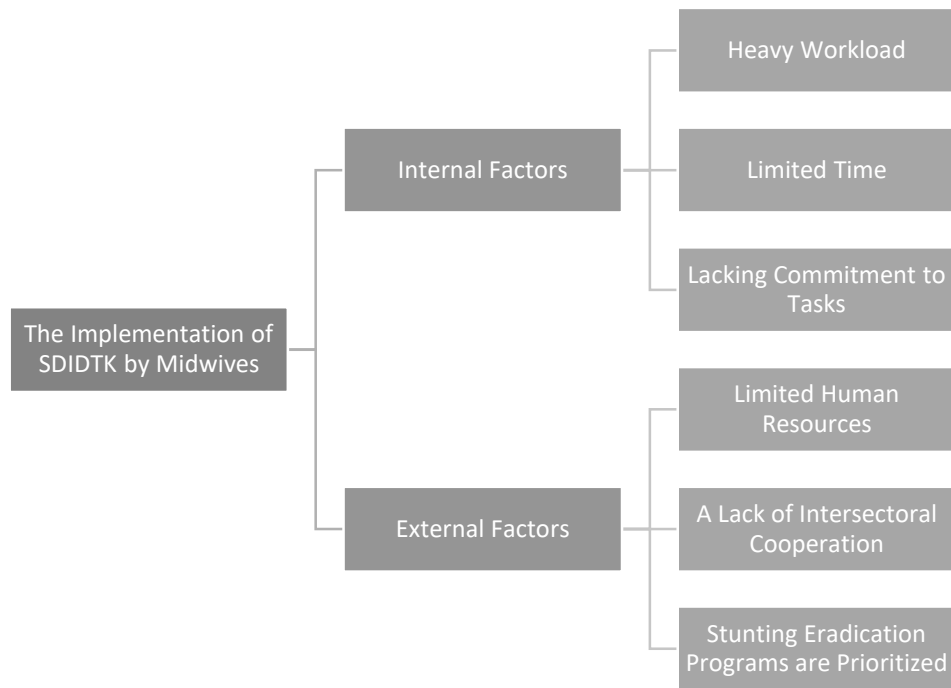
The authors analyzed the challenges that midwives face in implementing the SDIDTK through qualitative research. Results showed that there are two themes that influence the application of

SDIDTK, namely the internal factors and the external factors of the midwives. The internal factors of midwives comprise a heavy workload, limited time, and a lack of commitment. Meanwhile, external factors that influence the application of the SDIDTK by midwives include limited human resources, a lack of intersectoral cooperation, and a priority on stunting programs. The challenges that midwives face can be seen in Figure 1.

**Heavy workload**

Midwives in charge of village areas have a rather heavy workload. They have the authority over the health of mothers and children. Maternal health encompasses antenatal care, intranatal care, postpartum care, and family planning programs, as well as the reproductive health of teenage girls, fertile women, and menopausal women. The health of babies, toddlers, and preschool children is part of children’s early detection of growth and development. Moreover, these midwives in charge of villages often obtain additional tasks from the Community Health Centers.

“The detection of growth has already routinely been carried out but the detection of development is still not according to the schedule. I have no choice. Midwives have a heavy workload, including tending to pregnant women, women in labor, postpartum women, and family planning. We are responsible for the reproductive health of teenagers to the elderly” (Participant 1).



**Figure 1:** Thematic map of themes (yellow and orange) and codes (blue). Subcodes not presented

“Early in the morning, we start off by participating in a morning ceremony in the Community Health Center. Then, we provide maternal and infant healthcare services in villages. In the afternoon, we return to the Community Health Center. In the evening, I tend to patients at home. Moreover, it is not seldom that we, midwives who work in Community Health Centers, obtain other additional tasks. So, we only carry out child development examination only in cases of complaints from parents” Participant 2.

“It is true that the workload of midwives is quite heavy. Apart from their job in serving the healthcare of mothers and children, in Community Health Centers, we often obtain additional tasks, such as becoming a treasurer, the head of the Administration Office, etc” (Participant 5).

**Limited time**

Midwives often carry out SDIDTK examinations during the Integrated Service Post activity. Midwives feel that the time used for SDIDTK is too little. Thus, they do not achieve the targets, especially for detecting development.

“There are many types of development detection, including KPSP (Developmental Pre-Screening Questionnaire), sight test, hearing test, and

emotional-mental development test, etc. The time available during the Integrated Service Post activity is too little as we have to examine many children” (Participant 3).

“SDIDTK examination is usually carried out in the Integrated Service Post activity. As for development detection, I only do it in case there are complaints from parents. The time is limited and it must be divided with health education activities” (Participant 4).

“SDIDTK can be carried out anytime. But it is just that midwives usually carry it out during the Integrated Service Post activity. It is clear that the time is not enough if we only carry it out during that time, though” (Participant 6).

**The lack of commitment in carrying out complete SDIDTK examination**

The authors found that there was a lack of commitment to carrying out a complete SDIDTK examination, as shown by the statements of some participants below.

“Developmental detection, huh? If possible, I can do it, but if not, it’s okay too” (Participant 1).

“Often, my colleagues who are midwives in charge of villages only focus on SDIDTK examination during the Integrated Service Post activity, even

though it can also be done outside of this activity. They still lack the commitment to carry out the SDIDTK examination" (Participant 7).

"When carrying out supervision, I often remind midwives to carry out a complete SDIDTK examination. After being reminded, they comply. But a few months after they no longer do it. It is true that their commitments must be increased" (Participant 8).

### **Limited human resources**

One of the factors that led to the limited SDIDTK examination is the lack of capable human resources. "For the growth detection, we are aided by cadres. But for the development detection, we carry it out by ourselves. Cadres have not yet obtained training on that" (Participant 2).

"I usually carry out development detection by myself. But when there is a joint examination with the Community Health Service, I am usually helped by nutritionists and nurses. But such an activity is usually only carried out twice a year" (Participant 3).

### *There is a lack of intersectoral cooperation*

SDIDTK can be carried out by cooperating with preschool education teachers, as well as BKB (*Bina Keluarga Balita/Toddler Family Service*) cadres. However, midwives in charge of villages have not optimally carried out cooperation as shown by the statements of the participants below.

"I didn't know that preschool education and kindergarten teachers in my place can undergo SDIDTK examination" (Participant 1).

"I have seen BKB cadres carry out development detection. I let her do it as they have targets to family planning officials. But I was embarrassed to ask for the data" (Participant 2).

"I know that preschool education teachers and BKB cadres can carry out development detection. But as far as I know, there has not been further discussion at the Community Health Service level to cooperate with them" (Participant 7).

"So far, we have not discussed the SDIDTK program with the Education Service of Magetan Regency. Maybe we will have that agenda" (Participant 8).

### **Stunting programs are prioritized**

One of the factors that lead to the suboptimum detection of child development is the fact that the government tends to focus on programs to eradicate stunting.

"So far, the focus is on stunting. Thus, I carry out routine growth check-ups" (Participant 1).

"My superior currently delivers messages on decreasing the rate of stunting. Many programs are directed to stunting. That is why I focus on detecting growth" (Participant 4).

"So far, many programs are targeted to decrease the rate of stunting. It is as if the priority program is on decreasing the rate of stunting" (Participant 5).

## **Discussion**

### ***The implementation of SDIDTK by midwives***

The midwives were categorized as senior and mature with many years of experience working as midwives. Most of the respondents had the education level of an Associate's Degree in Midwifery. Midwives' area of competence included the ability to undergo early detection of children's growth and development<sup>13</sup>. Mature age, good competence, as well as adequate experience should be able to increase the performance of midwives, especially in carrying out SDIDTK services.

The SDIDTK is often carried out simultaneously at Integrated Service Posts for Toddlers. On average, every village had four Integrated Service Posts with 20 cadres. Based on this data, this means that each integrated service post had 5 cadres. This shows that Integrated Service Posts have fulfilled the requirement of the minimum number of cadres. Integrated Service Posts must at least have five cadres who work at the registration table, measurements (measuring weight, height, and head circumference), filling health target cards, giving education (with health workers), providing healthcare services (with the health workers)<sup>11,14</sup>.

Due to the high rate of stunting, the cadres had received training/briefing on growth measurement. The empowerment of cadres in the form of training or socialization was needed to

increase their knowledge on the issue of nutrition in society, especially concerning toddlers, so that health cadres may be exposed to new information to be applied in the Integrated Service Posts. The study results showed that training was organized to increase cadres' capacity and to give them an understanding of balanced nutrition and early detection as an effort to prevent stunting<sup>15,16</sup>.

The detection of development still lacks the involvement of cadres (29.6%). Cadres had not obtained training in development detection. The detection of development through KPSP, hearing detection, and vision detection tests were taught to cadres through training. The training was effective in increasing the ability of cadres to detect the development of children<sup>17</sup>. Cadres that have obtained training can be empowered to detect child development to monitor their development. Midwives in charge of areas do not always live in villages they are in charge of. But Integrated Service Post cadres are people originating from those villages. Thus, children's daily lives are familiar to the cadres. This makes it more effective in detecting development<sup>18</sup>. The detection of child development can be carried out anywhere without waiting for the Integrated Service Post organization schedule. In this research, cadres' involvement in detecting child development is still suboptimum. One of the reasons is that they have not participated in socialization on child development detection.

SDIDTK may be carried out by health workers (midwives, doctors, nurses, nutritionists), health cadres, BKB cadres, kindergarten teachers, PKK cadres, as well as mothers of infants. Those other than health workers, i.e, health cadres, BKB cadres, kindergarten teachers, PKK cadres, can be trained to undergo growth and development detection (detection using KPSP, sight tests, and hearing tests). As for examinations of behavioral and emotional issues, they can be carried out by health workers<sup>9</sup>. Research conducted by Nuryani and Ngestiningrum in Magetan Regency showed that Integrated Service Post cadres that have been trained to carry out SDIDTK can apply growth and development detection of children well in Integrated Service Posts<sup>19</sup>. Research by Wisnu, Ngestiningrum, and Nuryani in Magetan showed that preschool teachers that were trained to carry out the role-play method may increase the role of teachers in detecting the growth and development of children in schools<sup>20</sup>. Then, the research by Yulaidah et al. in

Magetan Regency showed that mothers who are trained to undergo an early detection of growth using KPSP may carry out independent detection on their children<sup>21</sup>. But this research showed that only a small number of midwives use this resource.

### ***Challenges faced by midwives in implementing SDIDTK***

The researcher conducted in-depth interviews with four midwives in charge of village areas, three coordinator midwives, and a person in charge of the SDIDTK program from the Magetan Health Service. These interviews showed that the growth detection examination is routinely performed on a monthly basis. Meanwhile, children's development detection is not routinely carried out. The development detection should be done according to the children's age. However, it is carried out simultaneously with nutrition programs twice a year or after receiving complaints from parents. If from a glance the development is deemed good, then the child's development is reported to be good.

Some factors influence the application of SDIDTK by midwives. These factors are internal and external factors of the midwives. Internal factors of midwives include the high workload, limited time, and a lack of commitment. External factors that influence SDIDTK implementation by midwives include limited human resources, a lack of intersectoral cooperation, as well as a priority on stunting programs.

These factors were also experienced by midwives in other regencies. Research in Ponorogo Regency showed that the high workload of midwives and the limited time available leads to the suboptimum application of SDIDTK by midwives<sup>22</sup>. Research in Surabaya City showed that the commitment to tasks influences midwives' performance in applying SDIDTK. The higher the commitment midwives have over their job, the higher the rate of SDIDTK target reached<sup>23</sup>.

This research showed the results that midwives feel that they lack the human resources that may help them provide SDIDTK services. Apart from that, there is a lack of coordination with other sectors. Integrated service posts, BKB, and PKK cadres are some of the societal units that can help the SDIDTK. Apart from that, kindergarten teachers can be involved in the SDIDTK program. When children enter pre-school age, they seldom

come to the integrated service posts. Therefore, kindergarten teachers can be involved in the SDIDTK program. Kindergarten teachers who have obtained the SDIDTK training can undergo growth and development detection at school. In cases of deviance, they can coordinate with midwives in charge of the area or with the Community Health Center<sup>20</sup>. Based on the data from the Magetan Regency Midwifery Study Program, since 2012, each semester, there have been SDIDTK training programs for kindergarten teachers. Part of the kindergarten teachers in the five areas of this Community Health Centre have been exposed to the SDIDTK program. However, research results showed that midwives in charge of the area were unaware of this.

This research showed that the government puts a priority on programs for stunting eradication. This influences the focus of midwives' jobs as they prioritize urgent programs. According to the theory of the Health Promotion Model, urgent activities may influence a person's behavior, in this case, that of midwives. However, this may be minimized if midwives have a high commitment<sup>24</sup>.

Midwives have a crucial role in the SDIDTK. They do not only have the role to provide healthcare services<sup>25</sup>. But they also provide health education and encourage societal participation/empowerment<sup>26,27</sup>. The Indonesian government's policy is based on the Decision of the Minister of Health No. HK.01.07/Menkes/2015/2023 on the Technical Guidelines to Integrating Primary Healthcare Services provide midwives with the authority to coordinate that SDIDTK activity. So, midwives have three roles. First, they provide services, such as carrying out direct SDIDTK examinations on children. Second, midwives as health educators. Midwives provide parents with education on the stimulations needed by children. Education is carried out on every stage of a child's development, rather than only doing so in cases of complaints from parents. Apart from that, midwives can also provide training to health cadres so that they can aid the implementation of the SDIDTK, especially in detecting growth, detecting development with KPSP, detecting sight capabilities, and detecting hearing capabilities. Third, as the drivers of societal empowerment. Midwives may cooperate with health cadres, BKB cadres, and preschool education

teachers, as well as coordinate with other societal empowerment units. By involving the participation of society, midwives can lower their risk of experiencing stress/burnout<sup>28</sup>. However, it should be improved because as we know the morbidity and mortality risks associated with anthropometric failure and associated with the development of children<sup>13,14</sup>.

This research strived to analyze the implementation of SDIDTK, both quantitatively and qualitatively. Even so, it has several limitations, as this research has not carried out an analysis based on the perspectives of other parties that are involved in this SDIDTK activity (parents and health cadres).

## Conclusion

The application of SDIDTK by midwives is still suboptimum. Growth detection has been carried out well. On the contrary, development detection has not been applied according to the stipulations. Midwives have involved integrated service posts, BKB, and PKK cadres in detecting growth. But for development growth detection, most midwives independently carry it out. There are some obstacles to applying the SDIDTK. Midwives' internal factors include the high workload, limited time, and a lack of commitment. Then, external factors that influence the implementation of SDIDTK by midwives include limited human resources, a lack of intersectoral cooperation, as well as a priority on stunting eradication programs. The intersectoral cooperation with the Service of Population Control, Family Planning, Women's Empowerment, and Child Protection (BKB) and the Service of Education, Youth, and Sports (kindergarten teachers) is still suboptimum.

## Contribution of authors

Ngestiningrum: conceptualized and designed the study, collected and analysed the data wrote the introduction and edited the paper.

Qomaruddin: collected and analysed the data, designed the methodology, wrote paper.

## Conflict of interests

The authors declare that there are no conflicting interests.

## Acknowledgement

The authors would like to thank Universitas Airlangga. This research was personally funded by the authors.

## References

1. The Republic of Indonesia's Ministry of Health. Pedoman SDIDTK Di Pelayanan Dasar (SDIDTK Guidelines in Basic Services). Jakarta: Dirjen Pembinaan Kesmas; 2019.
2. Poon BT, Atchison C and Kwan A. Understanding the Influence of Community-Level Determinants on Children's Social and Emotional Well-Being: A Systems Science and Participatory Approach. *International Journal of Environmental Research and Public Health*. 2022;19(10).
3. Badan Pusat Statistik. Profil Kesehatan Ibu dan Anak 2022. Jakarta: Badan Pusat Statistik; 2022.
4. UNICEF/WHO/World bank. Levels and trends in child malnutrition UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates Key findings of the 2021 edition [Internet]. World Health Organization. 2021 p. 1–32. Available from: <https://www.who.int/publications/i/item/9789240025257>
5. Bolajoko O, Adrian C, Donald Nem-Yun M.K.C. Ricardo Hannah Olusanya Davis Wertlieb Boo Nair Halpern Kuper Bre, Bolajoko O. Olusanya, Adrian D, Donald W, Nem-Yun B, Muttathu K, Chandrasekharan N, Ricardo H, Hannah K, Cecilia B, Petrus J. de Vries, Melissa J G, Neal H, Vijaya K, Mphelekedzeni C M, Angelina Kakooza-Mwesige Felix A.O, Jacob O, Andrew NW, Scott M W, Helena M, Alison S, Michelle M.E, Chad TI, Angela Liu, Anoushka I M, Katherine E B, Emma N, Holly E E, Damian FS, Zane R, Mari S, Harvey A. W, Helen EO and Nicholas JK . Developmental disabilities among children younger than 5 years in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Global Health*. 2018;6(10):e1100–21.
6. Salomone E, Pacione L, Shire S, Brown FL, Reichow B and Servili C. Development of the WHO Caregiver Skills Training Program for Developmental Disorders or Delays. *Frontiers in Psychiatry*. 2019;10(November):1–9.
7. Zhang J, Guo S, Li Y, Wei Q, Zhang C, Wang X, Shushang L, Chunxia Z and Robert W. Factors influencing developmental delay among young children in poor rural China: A latent variable approach. *BMJ Open*. 2018;8(8):1–9.
8. Dinkes Magetan. Laporan 3 Bulanan Kesehatan Ibu dan Anak Tahun 2021. Magetan: Dinas Kesehatan Magetan; 2021.
9. Permenkes Nomor 66 Tahun 2014.pdf.
10. Kemenkes. Pedoman Pelaksanaan Stimulasi, Deteksi dan Intervensi Dini Tumbuh Kembang Anak di Tingkat Pelayanan Dasar. Kemenkes RI. Jakarta; 2022.
11. Kemenkes. Pedoman Umum Pengelolaan Posyandu. Jakarta: Kemenkes RI; 2011.
12. Kemenkes RI. Profil Kesehatan Indonesia 2021. Pusdatin.Kemenkes.Go.Id. Jakarta: Kemenkes; 2022. Kementerian Kesehatan Republik Indonesia.
13. Undang-undang RI. Undang-undang RI No. 4 Tahun 2019. Tentang Kebidanan. 2019;(10):2–4.
14. Putri HA and Dwihestie LK. Optimalisasi Peran Kader Posyandu dalam Upaya Deteksi Dini Tumbuh Kembang Balita di Wilayah Beji Sidoarum Godean Sleman. *Jurnal Abdimas Mahakam*. 2020;4(1):66–72.
15. Mediani HS, Nurhidayah I and Lukman M. Pemberdayaan Kader Kesehatan tentang Pencegahan Stunting pada Balita. *Media Karya Kesehatan*. 2020;3(1):82–90.
16. Megawati G and Wiramihardja S. Peningkatan Kapasitas Kader Posyandu Dalam Mendeteksi Dan Mencegah Stunting. *Dharmakarya*. 2019;8(3):154.
17. Nuryani, Ngestiningrum AH and Wisnu NT. Knowledge and the Role of Cadres in the Implementation of Early Detection of Toddlers Development Using Kpsp. *Jurnal Kesehatan Poltekkes Ternate*. 2017;10(1):22.
18. Ngestiningrum AH, Nuryani and Wisnu NT. Program Kader Tanggap Tumbuh Kembang Anak (Pro Kata Kembang) Dalam Upaya Pemberdayaan Masyarakat Bidang Tumbuh Kembang Anak Di Desa Tungkur Kecamatan Lembayan Kabupaten Magetan. *JAM (jurnal Abdimas Multidisiplin)*. 2023;2(2):30–4.
19. Nuryani N, Ngestiningrum AH and Wisnu NT. Knowledge And The Role of Cadres in the Implementation of Early Detection of Toddlers Development Using KPSP. *Jurnal Kesehatan Poltekkes Ternate*. 2017;10(1).
20. Wisnu NT, Ngestiningrum AH, Nuryani and Sumasto H. Metode Role Play Sebagai Upaya Meningkatkan Kemampuan Guru dalam Deteksi Dini Pertumbuhan Perkembangan Balita. *Suara Forikes*. 2020;11(April):212–8.
21. Yulaidah S, Ngestiningrum AH, Herlina T and Hanifa AN. Pelatihan Keterampilan Ibu untuk Deteksi Perkembangan Anak Prasekolah Menggunakan Kuesioner Pra Skrining Perkembangan. *Jurnal Penelitian Kesehatan Suara Forikes*. 2023;14(1):192–5.
22. Ngestiningrum AH and Santosa BJ. Evaluasi pelatihan Stimulasi, Deteksi, dan Intervensi Dini Perkembangan Anak Berdasarkan Model Evaluasi Pelatihan Kirkpatrick. 2-TRIK: Tunas-Tunas Riset Kesehatan. 2016;6(1):45–52.
23. Utami S, Nursalam N, Hargono R and Susilaningrum R. Midwives Performance in Early Detection of Growth and Development Irregularities of Children Based on Task Commitment. *International Journal of Evaluation and Research in Education (IJERE)*. 2016;5(4):300.
24. Pender NJ, Murdaugh C and Parsons MA. *Health Promotion in Nursing Practice* (6th ed.). Boston: Perason; 2014.
25. Kemenkes RI and Kepmenkes HK.01.07/MENKES/320/2020 tentang Standar Profesi Bidan [Internet]. 2020. Available from: <https://doi.org/10.1016/j.jnc.2020.125798%0Ahttps://doi.org/10.1016/j.smr.2020.02.002%0Ahttp://www>

- ncbi.nlm.nih.gov/pubmed/810049%0Ahttp://doi.wiley.com/10.1002/anie.197505391%0Ahttp://www.sciencedirect.com/science/article/pii/B9780857090409500205%0Ahttp:
26. Mashamba EK and Ramavhoya IT. The stress of the midwife: Experiences of advanced midwives working in obstetric emergency units in Johannesburg, South Africa. *African Journal of Reproductive Health*. 2021;25(5):93–104.
  27. Alarape K, Yusuf JO, Akinyemi JO, Samuel FO, Morhason-Bello IO, Salami KK, Temitope I, Ayinka A, Abdul Rasak A, Isaac A, Abdullahi AM, Okara D, Solanke O, and Kana I. Prevalence and patterns of anthropometric failure among under-five children in Nigeria: Evidence from the National nutrition and health survey 2018. *African Journal of Reproductive Health*. 2022;26(11s):54–61.
  28. Utami S, Nursalam N, Hargono R and Susilaningrum R. Midwives Performance in Early Detection of Growth and Development Irregularities of Children Based on Task Commitment. *International Journal of Evaluation and Research in Education (IJERE)* [Internet]. 5(4). Available from: <https://ijere.iaescore.com/index.php/IJERE/article/view/5957>.