Efforts for early detection of growth and development of children aged 4-5 years through health screening activities at RA IT Nurul Islam Semarang

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Abstrak

Background: The golden age phase is the most critical period for closely monitoring children's growth and development through health screening activities. Early detection of children's growth and development conditions is essential to prevent and address potential health and developmental issues. Early intervention can reduce the negative impact of developmental problems.
Aim: This research aims to determine the results of early detection of the growth and development of children aged 4-5 years to identify any developmental disorders or deviations and nutritional status in RA IT Nurul Islam Semarang as early as possible.
Method: This research design uses quantitative research. Data collection techniques include observation, interviews, and documentation.
Results: The results of the growth and development detection in children showed that 7 children had normal nutritional status, 4 were overweight, 1 was underweight, and 3 were obese. This research indicates that early detection of children's growth and development requires periodic and further health screenings to prevent deviations or problems in children's growth and development.
Conclusion: Educators, teachers, health workers, and other professionals can identify children at risk of developmental delays based on reports from parents or suspicions from teachers. Teachers' suspicions about developmental problems or deviations in school children should be followed up with early intervention efforts for optimal early childhood growth and development detection

INTRODUCTION

The growth and development phase in early childhood can increase rapidly at ages 0-5 years because this period is called the golden age (Chapnick 2008; Firdaus & Muryanti 2020; Basri 2019). During the golden age phase, it is crucial to monitor children's growth and development carefully to detect deviations, disorders, or abnormalities early (Isnaeni & Latipah 2021; Pakpahan 2020; Iqoh & Alief 2021). Early detection of children's growth and development conditions is essential to prevent and address potential health and developmental issues. Early identification of developmental problems allows for faster and more effective interventions that can improve children's overall developmental outcomes. Early intervention can reduce the negative impact of developmental problems.

Health screening activities aim to detect children with health problems or deviations early to receive proper treatment and provide data and information to assess or monitor children's health development and growth (Dini et al. 2022; Fazrin et al. 2018; Simanjuntak et al. 2023). The health screening activities conducted by researchers include six examinations: height measurement, weight measurement, vision test, ear cleanliness examination, nail

cleanliness examination, and dental health examination (Saurina 2016; Finamore et al. 2021; Yulivantina et al. 2021). These health screening activities are essential for preschool or school children as parents and educators can obtain information about children's health development and growth and regularly check for deviations or disorders in children's growth and development and determine children's nutritional status.

Stunting is still a significant child health problem in Indonesia. Stunting is caused by chronic malnutrition in children under five years old, resulting in reduced height according to age within the -2 SD (Standard Deviation) category based on WHO growth standards established by Indonesian Ministry of Health Regulation No. 2 of 2020 on Child Anthropometry Standards (Hendra Dwi Kurniawan 2023; Indah Prasasti & Normawati 2023; Dewi & Fuad 2022). According to the 2022 Indonesian Nutrition Status Survey (SSGI), stunting in Indonesia remains high at 216%. Although there was a decrease in stunting in 2021 to 244%, significant efforts are needed to achieve the 2024 target of 14%. Stunting can also occur before the baby is born, as seen from the frequency of stunting based on age groups in the 2022 SSGI results, showing that 185% of babies are born with a height of less than 48 cm. This data indicates that fulfilling maternal nutrition during pregnancy is crucial. The same survey results also show a worrying increase in the risk of stunting by 16% from the 6-11 months age group to the 12-23 months age group (137% to 224%). This indicates that parents fail to provide appropriate complementary feeding (MP-ASI) starting at six months in terms of age appropriateness, procedures, amounts, textures, and types of food. It is essential to pay attention to and ensure adequate protein and energy for children from an early age to prevent stunting (Kemenkes 2024; Fitri et al. 2022; Iswandari et al. 2020).

Research by Jimoh (2018) shows a relationship between nutritional status and the growth and development of children under five years old. Previous studies indicate that teachers' referrals regarding children's developmental problems have high accuracy and require further screening as the initial intervention effort (Nesy & Pujaningsih 2023). Achieving children's growth and development must be balanced with healthy food because unhealthy food intake can lead to malnutrition, affecting brain structure and function (Soewito 2021). Periodic monitoring of children's growth and development should start early to develop quality human resources in the future (Bambang 2021). This research was conducted at RA IT Nurul Islam Semarang, an Islamic-based educational institution. This is different from previous studies usually conducted in general educational institutions or health facilities without considering the religious context. This study provides a new perspective on implementing health screenings in educational environments with specific religious values and practices. This study applies the latest child anthropometry standards based on Indonesian Ministry of Health Regulation No. 2 of 2020. Using these standards provides a more up-to-date and relevant basis for measuring children's nutritional status compared to studies using older standards.

Therefore, health screening activities in early detection of growth and development of children aged 4-5 years at RA IT Nurul Islam Semarang aim to determine the general results of early detection of children's growth and development to identify any disorders or deviations in students at RA IT Nurul Islam Semarang as early as possible. The health screening activities conducted by researchers include six examinations: weight measurement, height measurement, vision test, dental health examination, nail cleanliness examination, and ear cleanliness examination. Early detection activities are essential to ensure children achieve optimal growth and development.

METHOD

This research is designed using quantitative research conducted at RA IT Nurul Islam Semarang. The examination was conducted twice, the first on September 12, 2023, by class teachers. The second examination was conducted on September 30, 2023, by health workers from the Purwoyoso health center. The sample or population in this study is RA class A 4 children, with a total sample of 15 children. The tools used during the health examination include a digital weight scale, a height measurement tool in the form of a sticker attached to the wall, a vision test using an E poster with a 3-meter distance attached to the wall at eye level, a flashlight for illuminating the conditions for examining dental, nail, and ear cleanliness, and a book and pen for recording examination results.

The data collection technique in this study uses observation, interview, and documentation techniques. First, using the observation technique, the author directly observed class A 4 by observing actions and processes during height measurement, weight measurement, vision test, ear examination, dental examination, and nail examination (Dini et al. 2022; Fazrin et al. 2018; Simanjuntak et al. 2023). Second, data collection is obtained through interviews with class A 4 teachers, including the child's name, age, gender, and physical examination results, such as height measurement and weight measurement, used to determine the child's body mass index (BMI). The next step is to calculate and categorize nutritional status based on the z-score formula adjusted to Indonesian Ministry of Health Regulation No. 2 of 2020 on child anthropometry standards. Third, using documentation techniques to obtain children's data as a complement and reference for the author in determining children's nutritional status using Indonesian Ministry of Health Regulation No. 2 of 2020 on child anthropometry standards, E posters, and a record book of children's weight and height measurements. (Saurina 2016; Finamore et al. 2021; Yulivantina et al. 2021).

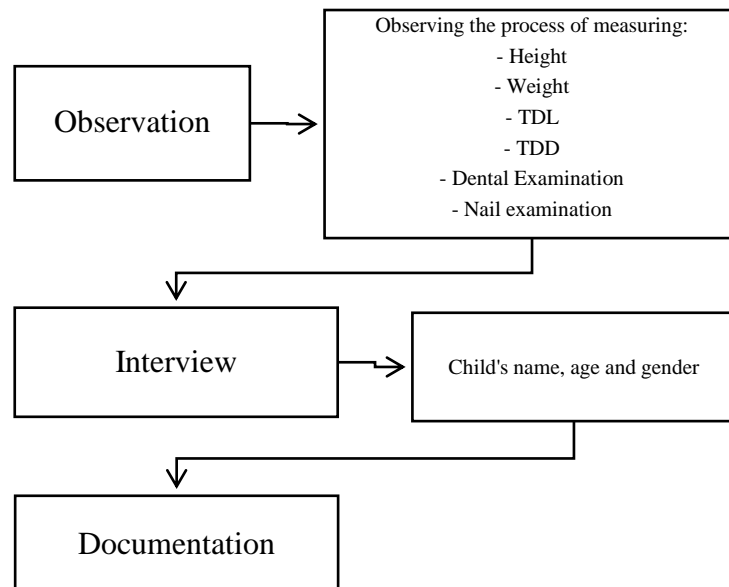**Figure 1**. Research Flow

RESULTS AND DISCUSSION
A. Results

The health screening process at RA IT Nurul Islam Semarang, conducted by researchers, took place in class A 4 with class teacher Mrs. Erniati S.Pd. and a total sample of 15 children.

The first examination was conducted on September 12, 2023, by class teachers, including weight measurement and height measurement. The tools for growth and development detection include a digital scale and a height measurement tool in the form of a sticker attached to the wall, along with a book and pen for recording children's weight and height measurements. Weight measurement and height measurement are conducted once a semester and examined by each class teacher.

The first step is to calculate the child's body mass index (BMI). To determine the child's BMI, divide the weight (kilograms) by height (m2). After determining the BMI, calculate the z-score formula to determine the child's nutritional status as follows:

$$\textit{Z-Score} = \frac{\text{BMI} - \text{Median}}{\text{Reference Standard Deviation}}$$

The median and reference standard deviation can be found in Indonesian Ministry of Health Regulation No. 2 of 2020 on child anthropometry standards. The z-score calculation results for BMI by age are determined in the category and nutritional status threshold table according to age. The complete method for determining children's nutritional status can be found in Indonesian Ministry of Health Regulation No. 2 of 2020 on the category and nutritional status thresholds for children through the BMI/U index, used to determine the categories of undernutrition, good nutrition, at risk of overnutrition, and obesity. The category and nutritional status thresholds for children include BMI by age, weight by age, height by age, and weight by height. These various indices show the same results, but the BMI/U index is more sensitive to screening for overnutrition or obesity in children. Children with a BMI/U threshold >+1SD are at risk of overnutrition and require further management to prevent obesity or overnutrition. Conversely, children with a BMI/U threshold <-2SD show undernutrition. The complete category and nutritional status thresholds for children are shown in Table 1 according to Indonesian Ministry of Health Regulation No. 2 of 2020 as follows:

Table 1. Categories and Nutritional Status Thresholds for Children

Index	Nutritional Status Category	Threshold (Z-Score)
BMI by Age (BMI/U) children aged 0-60 months	Severe undernutrition	<-3 SD
	Undernutrition	-3 SD sd <-2 SD
	Good nutrition (Normal)	-2 SD sd +1 SD
	At risk of overnutrition	>+ 1 SD sd + 2 SD
	Overnutrition	>+ 2 SD sd +3 SD
	Obesity	>+ 3 SD
BMI by Age (BMI/U) children aged 5-18 years	Severe undernutrition	<-3 SD
	Undernutrition	-3 SD sd <-2 SD
	Good nutrition (Normal)	-2 SD sd +1 SD
	Overnutrition	+1 SD sd +2 SD
	Obesity	>+2 SD

The BMI by age index for boys and girls differs because boys have higher nutritional needs than girls, as boys have larger body structures, higher metabolism, and are more physically active. Boys require more protein. Boys' nutritional needs during growth are 2,475 calories, while girls need 2,125 calories (Aris Amirullah 2020). Therefore, boys will grow

taller and faster than girls physically. The BMI by age index for boys and girls aged 4-5 years is as follows:

Table 2. BMI by Age Standards for Boys Aged 4-5 Years

Age (Months)	BMI for Age 48-60 Months						
	-3 SD	-2 SD	-1 SD	Median	+1 SD	+2 SD	+3 SD
48	12.1	13.1	14.1	15.3	16.7	18.2	19.9
49	12.1	13.0	14.1	15.3	16.7	18.2	19.9
50	12.1	13.0	14.1	15.3	16.7	18.2	19.9
51	12.1	13.0	14.1	15.3	16.6	18.2	19.9
52	12.0	13.0	14.1	15.3	16.6	18.2	19.9
53	12.0	13.0	14.1	15.3	16.6	18.2	20.0
54	12.0	13.0	14.0	15.3	16.6	18.2	20.0
55	12.0	13.0	14.0	15.2	16.6	18.2	20.0
56	12.0	12.9	14.0	15.2	16.6	18.2	20.1
57	12.0	12.9	14.0	15.2	16.6	18.2	20.1
58	12.0	12.9	14.0	15.2	16.6	18.3	20.2
59	12.0	12.9	14.0	15.2	16.6	18.3	20.2
60	12.0	12.9	14.0	15.2	16.6	18.3	20.3

Age		BMI for Age 5 Years						
Years	Months	-3 SD	-2 SD	-1 SD	Median	+1 SD	+2 SD	+3 SD
5	1	12.1	13.0	14.1	15.3	16.6	18.3	20.2
5	2	12.1	13.0	14.1	15.3	16.6	18.3	20.2
5	3	12.1	13.0	14.1	15.3	16.7	18.3	20.2
5	4	12.1	13.0	14.1	15.3	16.7	18.3	20.3
5	5	12.1	13.0	14.1	15.3	16.7	18.3	20.3
5	6	12.1	13.0	14.1	15.3	16.7	18.4	20.4
5	7	12.1	13.0	14.1	15.3	16.7	18.4	20.4
5	8	12.1	13.0	14.1	15.3	16.7	18.4	20.5
5	9	12.1	13.0	14.1	15.3	16.7	18.4	20.5
5	10	12.1	13.0	14.1	15.3	16.7	18.5	20.6
5	11	12.1	13.0	14.1	15.3	16.7	18.5	20.6

Tabel 3. BMI by Age Standards for Girls Aged 4-5 Years

Age (Months)	BMI for Age 48-60 Months						
	-3 SD	-2 SD	-1 SD	Median	+1 SD	+2 SD	+3 SD
48	11.8	12.8	14.0	15.3	16.8	18.5	20.6
49	11.8	12.8	13.9	15.3	16.8	18.5	20.6
50	11.8	12.8	13.9	15.3	16.8	18.6	20.7
51	11.8	12.8	13.9	15.3	16.8	18.6	20.7
52	11.7	12.8	13.9	15.3	16.8	18.6	20.7
53	11.7	12.7	13.9	15.3	16.8	18.6	20.8
54	11.7	12.7	13.9	15.3	16.8	18.7	20.8
55	11.7	12.7	13.9	15.3	16.8	18.7	20.9
56	11.7	12.7	13.9	15.3	16.8	18.7	21.0
57	11.7	12.7	13.9	15.3	16.9	18.7	21.0
58	11.7	12.7	13.9	15.3	16.9	18.8	21.0

Age		BMI for Age 5 Years						
Years	Months	-3 SD	-2 SD	-1 SD	Median	+1 SD	+2 SD	+3 SD
	59	11.6	12.7	13.9	15.3	16.9	18.8	21.0
	60	11.6	12.7	13.9	15.3	16.9	18.8	21.1
5	1	11.8	12.7	13.9	15.2	16.9	18.9	21.3
5	2	11.8	12.7	13.9	15.2	16.9	18.9	21.4
5	3	11.8	12.7	13.9	15.2	16.9	18.9	21.5
5	4	11.8	12.7	13.9	15.2	16.9	18.9	21.5
5	5	11.7	12.7	13.9	15.2	16.9	19.0	21.6
5	6	11.7	12.7	13.9	15.2	16.9	19.0	21.7
5	7	11.7	12.7	13.9	15.2	16.9	19.0	21.7
5	8	11.7	12.7	13.9	15.3	17.0	19.1	21.8
5	9	11.7	12.7	13.9	15.3	17.0	19.1	21.9
5	10	11.7	12.7	13.9	15.3	17.0	19.1	22.0
5	11	11.7	12.7	13.9	15.3	17.0	19.2	22.1

The results of growth and development detection through health screening at RA IT Nurul Islam Semarang, specifically in class A 4, are shown in (Table 4). According to the early detection results of children's growth and development in the table below, there are 15 children consisting of 6 boys and 9 girls. The nutritional status results show that 7 children have good (normal) nutritional status, 1 child is undernourished, 4 children are overweight, and 3 children are obese. The growth and development detection results align with children's age and gender differences. The health screenings included weight measurement and height measurement, with the following examination results:

Table 4. Growth and Development Detection Results for Children

No	Child's Name	Growth and Development								
		Gender	Age		Wight (Kg)	Height (Cm)	Height (m²)	BMI	Result	Nutritional Status
			Years	Months						
1.	Keenan	L	5	5	19.00	101	1,01	18,6	2,35	Obesity
2.	Nayla	P	5	5	19.00	106	1,06	16,9	1,0	Normal
3.	Tavisha	P	5	2	16.01	95	9,5	17,8	1,52	Overnutrition
4.	Hayyin	L	4	2	20.00	107	1,07	17,4	1,5	Overnutrition
5.	Iza	P	5	1	14.00	99	9,9	14,2	0,78	Normal
6.	Vano	L	5	5	21.00	105	1,05	13,3	1,6	Overnutrition
7.	Aqila	P	5	5	16.07	101	1,01	16,3	0,64	Normal
8.	Vania	P	4	4	12.85	101	1,01	12,5	-2,07	Undernutrition
9.	Haidar	L	4	2	20.00	106	1,06	17,7	1,6	Overnutrition
10.	Raisya	P	5	1	14.01	100	1,00	14,1	0,85	Normal
11.	Syahir	L	5	6	20.00	110	1,10	16,5	0,85	Normal
12.	Rohim	L	5	5	21.00	106	1,06	18,6	2,3	Obesity
13.	Sifa	P	5	5	16.07	102	1,02	16,05	0,5	Normal
14.	Hafida	P	5	7	20.00	110	1,10	16,39	0,62	Normal
15.	Rayya	P	5	4	18.00	98	9,8	18,7	2,05	Obesity

First, based on the examination results in the table above, the steps taken by teachers during health screening in class A 4 included initial ice-breaking activities to help children focus and stay orderly. The children were asked to line up like a train, which helped maintain focus and order. The teacher then directed the children to exit the classroom and move to the school yard for weight measurement. After the children lined up in the school yard, the teacher called each child one by one to be weighed, and the results were recorded. This process was repeated in turns according to the attendance order.

Second, the children were taken back to the classroom for height measurement. The children were asked to line up to maintain order and take turns waiting to be called by the teacher. Height measurement involved having the child stand against a wall with a height measurement tool in the form of a meter sticker attached to the wall. The teacher measured the height according to the child's height, and the measurement results were recorded in the teacher's record book.

Third, the vision test, ear cleanliness examination, and nail and dental cleanliness examinations were conducted. These examinations were performed twice a year by health workers from the Purwoyoso health center. Health screening activities were held on September 30, 2023, by two health workers. The examination was carried out after the children had breakfast together. The equipment used for DDTK (Early Growth and Development Detection) included a poster of the letter E, a flashlight, colorful balls, a record book, and a pen. Before starting the examination, health workers played games or ice-breaking activities with the children to help them focus and relax. The game involved catching colorful balls. The children were asked to form a circle, and the health worker stood in the center, randomly throwing balls to the children and asking them to identify the color and their name. The purpose was to help the children focus, balance their bodies, and relax during the examination.

Fourth, after the ice-breaking activity, the class teacher organized the children to line up and wait for their turn during the health examination. The health worker called each child's name one by one in attendance order. The child was asked to sit on a chair and look at the E poster on the wall from a 3-meter distance, with the poster positioned above the child's eye level in a well-lit room. The health worker stood next to the E poster, directing and pointing to the letter E in different directions (up, down, right, left), and the child was asked to mimic the direction with their hand. The child was praised after correctly mimicking the direction. The vision test results showed that the children's vision was normal, and there were no complaints or deviations.

Fifth, after the vision test, the ear cleanliness examination was conducted. Each child's ear cleanliness was checked using a flashlight to illuminate the area, ensuring the ear's condition was clean or not. If the ear was dirty, the health worker advised the child to ask for help from parents or caregivers at home to clean their ears daily. The ear cleanliness examination results showed that most class A 4 students had clean ears without problems or deviations.

Sixth, the dental examination was conducted. The health worker checked the children's teeth for cavities or other issues and advised the children to brush their teeth twice daily and avoid eating too many sweet foods like candies. The dental health examination results showed that most children's teeth were in good condition, with only two children having cavities or tartar. No severe dental problems were found among the children, but some had minor issues that could be addressed early by the health worker.

Seventh, the nail cleanliness examination was often conducted by class teachers and health workers. Two children had long nails, while the rest had clean nails. Keeping nails clean is crucial because hands are a source of germs. Regular nail trimming is essential to prevent diseases caused by germs on nails. The health worker advised the children to trim their nails regularly if they were slightly long, as dirty nails could cause diseases. The nail cleanliness examination was conducted by checking the children's hands with a flashlight to see if the nails were clean or not. The nail cleanliness examination results showed that most children had clean nails, with no severe issues.

B. Discussion

The health screening examination for detecting children's growth and development conducted at RA IT Nurul Islam Semarang received positive responses from parents and teachers. This study focused only on RA class A, specifically class A 4. The health screening activities successfully examined the growth and development of class A 4 children, totaling 15 children aged 4-5 years. The examination was conducted twice on different days: the first by class teachers on September 12, 2023, and the second by health workers from the Purwoyoso health center on September 30, 2023. The growth and development examination included height measurement, weight measurement, vision test, ear cleanliness examination, dental health examination, and nail cleanliness examination.

The first early growth and development detection results on September 12, 2023, for RA A class children, especially class A 4, showed that most children had a good nutritional status (normal) according to the table, falling into the good nutrition category. The second early growth and development detection results on September 30, 2023, for class A 4 children included four health examinations: vision test, ear cleanliness check, nail cleanliness check, and dental health check. The vision test results showed that most of the 15 children had normal vision without problems or deviations. The ear cleanliness check results showed that all students had clean ears, with health workers advising children to regularly clean their ears at home with parents' or caregivers' help. The dental health check results showed that two children had cavities and tartar problems, with health workers advising children to brush their teeth twice daily and maintain oral hygiene. The nail cleanliness check results showed that two children had long and dirty nails, with health workers advising students to ask parents or caregivers to trim their nails regularly to prevent diseases caused by germs on nails.

Previous studies indicate that poor nutritional status in children adversely affects their health, such as fatigue, susceptibility to illness, and decreased brain intelligence (Susmini 2021). Therefore, health examinations aim to prevent diseases that can disrupt children's health and intelligence. Ensuring children's health involves maintaining personal and environmental hygiene and choosing clean and healthy food for children. Children should be trained to be independent in maintaining personal hygiene from an early age by teaching them to trim nails regularly, brush teeth, wash hands, and parents should supervise their children in maintaining health (Suparni 2021). Implementing health screening and early detection activities is crucial in early childhood education to understand children's growth from a mental, behavioral, or action perspective (Satwika 2023).

Based on the health screening examination results, parents are expected to participate in encouraging their children's growth and development potential through early intervention and screening as a follow-up to early detection efforts, improving family quality of life and reducing high-risk functional disorders in children (Pujaningsih 2023). Comprehensive stimulation, intervention, and early detection activities can be conducted through partnerships between families, teachers, caregivers, communities, and professionals to improve early

childhood growth and development quality. The success indicators of growth and development guidance include not only health and nutrition but also children's social, emotional, mental, and independence development optimally (Khadijah 2022).

The findings from this research have significant **implications** for early childhood education and health. Regular health screenings are essential for the early detection and intervention of developmental issues in children, leading to improved health and developmental outcomes. By identifying problems early, timely interventions can be implemented, which is crucial for educational institutions and policymakers to consider incorporating into early childhood education settings. This study emphasizes the importance of monitoring children's growth and development closely during the critical golden age phase, particularly from ages 0-5 years, to detect any deviations, disorders, or abnormalities early.

The research highlights the role of parents in supporting their children's health and development. It reinforces the necessity of parental education and involvement in health screening activities. By being actively involved, parents can better understand their child's health needs and collaborate with educators and health professionals to ensure optimal growth and development. The study provides empirical data on the nutritional status and developmental health of children aged 4-5 years, serving as a valuable reference for future studies and health policies. Additionally, it outlines effective methods and procedures for conducting health screenings in educational settings, providing a model that other institutions can adopt.

One of the critical **contributions of this research** is its focus on stunting, a significant child health problem in Indonesia caused by chronic malnutrition. The study offers insights into preventive measures that can be implemented to reduce the incidence of stunting, highlighting the importance of adequate maternal nutrition during pregnancy and appropriate complementary feeding practices starting at six months of age. The research also shows the high accuracy of teachers' referrals regarding children's developmental problems, underscoring the need for further screening and early intervention efforts.

Despite its valuable contributions, the research has some limitations. The relatively small sample size of 15 children limits the generalizability of the findings. Conducting the study in a single educational institution may not reflect the broader population's health and developmental status. Moreover, the short duration of the study may not capture long-term trends and outcomes of early detection and intervention efforts. These limitations suggest the need for caution when interpreting the results and applying them to broader contexts.

Future research should focus on addressing these **limitations** by expanding the sample size and including children from various educational institutions and geographical locations to improve the generalizability of the results. Longitudinal studies are also essential to examine the long-term impact of early detection and intervention on children's health and development. Evaluating the effectiveness of different intervention strategies following early detection can help identify the most effective approaches for various developmental issues. Additionally, investigating the impact of parental education programs on the effectiveness of health screenings and early interventions can provide insights into best practices for involving parents in their children's health monitoring.

By focusing on these **future research** directions, the understanding of early detection and intervention strategies can be enhanced, ultimately contributing to the betterment of children's health and development. This research underscores the importance of a collaborative approach involving families, educators, health professionals, and policymakers to ensure that children receive the necessary support for their growth and development. The success indicators of growth and development guidance include not only health and nutrition but also

children's social, emotional, mental, and independence development optimally. Implementing comprehensive stimulation, intervention, and early detection activities through partnerships between families, teachers, caregivers, communities, and professionals can improve early childhood growth and development quality. In conclusion, health screening and early detection activities are crucial for maximizing children's growth and development from an early age, ensuring that they achieve their full potential and contribute to developing quality human resources in the future.

CONCLUSION

Health screening and early detection activities are essential for maximizing children's growth and development from an early age. Early detection is an early intervention form for children, aiming to prevent growth and development disorders and nutritional status problems from an early age. If a child is suspected of delayed detection, parents should be informed, and the child should be referred to a specialist or receive appropriate intervention and treatment depending on the child's developmental stage. Educators, teachers, health workers, and other professionals can identify children at risk of developmental delays based on reports from parents or suspicions from teachers. Teachers' suspicions about developmental problems or deviations in school children should be followed up with early intervention efforts for optimal early childhood growth and development detection.

AUTHOR CONTRIBUTIONS STATEMENT

AA contributed significantly to the conceptualization and design of the study, conducted the data collection, performed the initial data analysis, drafted the initial manuscript, and was involved in the revision process to ensure the accuracy and integrity of the study's findings. M provided guidance and oversight throughout the research process, including the design and methodology, and contributed to the critical revision of the manuscript, offering insights that enhanced the interpretation of the data and the overall quality of the research. AM assisted with the data collection, played a key role in the data analysis phase, and contributed to the writing and editing of the manuscript, ensuring that the research was presented clearly and effectively. All authors read and approved the final manuscript, agreeing to be accountable for all aspects of the work and ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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