



## EARLY DETECTION OF CHILD DEVELOPMENT AND GROWTH AGES 3-72 MONTHS IN CIHIDEUNG, TASIKMALAYA CITY

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### Abstract

Early childhood is a critical period of rapid development encompassing physical, cognitive, emotional, social, and sensory functions. This study aims to provide an overview of the growth and development of children aged 3 to 72 months in the Cihideung District, Tasikmalaya City. A descriptive qualitative approach with an observational design was employed. The study involved 30 children selected based on age criteria and parental consent. Data collection techniques included direct observation, anthropometric measurements, completion of the Pre-Screening Developmental Questionnaire (KPSP), and visual and auditory function assessments for children aged 4 to 6 years. The results indicate that most children were developing in accordance with their expected developmental milestones. A small proportion of children required further attention to ensure optimal development. In terms of growth, the majority of children demonstrated good nutritional status, although a few cases of height or weight not aligning with standard references were observed. Sensory assessments revealed that some children experienced difficulties with vision or hearing. These findings highlight the importance of regular early detection efforts and the active involvement of both families and professionals.

**Keywords** : Early Childhood Development, Early Detection of Growth and Development, KPSP

### Introduction

Given that toddlers in Indonesia account for approximately 10% of the total population, serious attention to the quality of their growth and development is essential. This includes adequate nutrition, appropriate stimulation, access to healthcare services, as well as early detection and intervention for developmental delays (Kemenkes RI, 2012). The toddler period is often referred to as both the "golden age" and a "critical period" due to the rapid development of the child's brain. Therefore, proper stimulation is necessary to ensure optimal development and to prevent potential developmental disorders (Sari & Mardalena, 2021). The early childhood stage particularly under the age of six is a crucial period in a child's development. During this time, language acquisition, creativity, social and emotional awareness, and intelligence grow rapidly, forming the foundation for subsequent stages of development.

The aspect of child growth and development is crucial, as it reflects the process of physical and psychosocial formation of an individual. However, many parents are still unaware when their child experiences growth delays. They often assume that a child who appears healthy has no health issues, including developmental concerns. As a result, developmental delays are frequently left unaddressed, which negatively impacts the child's prognosis. Therefore, it is important for parents to recognize warning signs (red flags) in their child's development. According to WHO data (2018), growth

problems not only include malnutrition but also conditions such as stunting and overnutrition. The prevalence of malnutrition among children under five was 7.3%, overweight was 5.9%, and stunting was 21.9%.

Based on SK Menteri PAN No. 81/M.PAN/3/2001 and SK Mendiknas No. 051/O/2001, the Directorate of Early Childhood Education (PAUD) was established as an effort to provide services for children aged 0–6 years through childcare centers, playgroups, and other PAUD institutions, to ensure optimal growth and development. Preschool-aged children (3-5 years) are in a critical growth period that requires special attention to their nutritional needs, as malnutrition not only impedes physical growth but also affects mental development. Children suffering from nutritional deficiencies may have below-average height and underdeveloped muscle tissues. Child development itself encompasses various aspects, such as physical, cognitive, emotional, language, gross and fine motor skills, social personal skills, and adaptability, all of which need to be supported comprehensively (Yulianti et al., 2018).

One way to enhance a child's growth and development optimally is through the provision of appropriate stimulation (Chen et al., 2010). Efforts to prevent child development problems should be made as early as possible through early detection. Early detection can be conducted every three months for children aged 0-12 months and every six months for children aged 12-72 months at all levels of health services. One form of early detection that can be done is through community health posts (posyandu) aimed at facilitating access to health services for mothers, infants, and toddlers (Sugeng et al., 2019). The Posyandu program is implemented in every village by cadres who have received knowledge and training from health workers. The purpose of involving cadres as implementers of Posyandu is to promote knowledge about health, especially regarding the growth and development of children. However, Posyandu activities generally only include weighing toddlers and providing nutrition, so the main focus is still more on physical growth aspects (Hayati & Fatimaningrum, 2015).

Early detection of children's growth and development is very important so that diagnosis and recovery can be carried out from the beginning, allowing for optimal development of the child. Stimulation is an activity that stimulates the basic abilities of children aged 0-6 years to grow and develop well. Meanwhile, screening is a routine examination procedure for daily child development that helps identify signs that require further attention (Vitriani et al., 2021). Early detection of growth and development is very important to identify deviations in toddlers and to follow up on parents' complaints regarding children's developmental issues. If deviations are found, early intervention is performed as a corrective action using brain plasticity to ensure that growth and development return to normal or do not worsen further. If necessary, toddlers should be referred immediately according to indications. Stimulation, detection, and comprehensive and coordinated early intervention activities are carried out through partnerships between families (parents, caregivers, family members), the community (cadres, community leaders, professional organizations), and professionals in the fields of health, education, and social services. This approach will improve the quality of early childhood development and their readiness to enter formal education (Yudernawati & Hadi, 2024). These efforts are provided according to the developmental age of the child so that their growth and development can reach optimal conditions. For early detection, standardized screening tests are used to differentiate children with abnormalities from those who are normal. Sensitive screening tests can predict a child's condition in the future, so sensitivity from the officers, especially the Posyandu cadres, is necessary in its implementation. According to the Early Detection Guide for Toddler Growth and Development (Tim Dirjen Pembinaan Kesmas, 2016), the types of screening tests used include Weight for Age (W/A), Height for Age (H/A), Head Circumference Measurement for Children (HCMC), Upper Arm Circumference for Children (UAC), and the Pre-Screening Development Questionnaire (KPSP) directed at parents (Noprida et al., 2022).

The Developmental Screening Questionnaire (KPSP) is an early detection instrument used to assess the development of children aged 0 to 6 years (3-72 months). KPSP is useful for determining whether a child's development is progressing normally or if there are any deviations (Yudiernawati & Hadi, 2024). KPSP is not only conducted for children who already exhibit developmental disorders, but it should be routinely performed on every child. The main purpose of KPSP is to identify children at risk of experiencing developmental disorders. The identified children will then undergo further assessment to determine their needs for more comprehensive intervention (Barbara & Syaidah, 2022).

Based on this phenomenon, the purpose of this research is to know the developmental profile during the golden period of children aged 3-72 months using the Developmental Pre-Screening Questionnaire (KPSP) in Cihideung District, Tasikmalaya City, specifically in Nagarawangi Village and Tuguraja Village.

## Method

This study employs a qualitative descriptive approach with a descriptive observational design. The purpose of this approach is to provide a systematic, factual, and accurate description of the characteristics of early childhood, based on direct field observations without any intervention or treatment applied to the subjects. In a descriptive observational design, the researcher acts as an observer who objectively records events or behaviors as they naturally occur in the children's environment (Rustamana et al., 2022).

The research was conducted in the Cihideung District of Tasikmalaya City, involving 30 children as respondents. These respondents were selected from the population of all children aged 0-72 months, based on age criteria and parental consent for their participation in the study. Data were collected through direct observation, the use of the Developmental Pre-Screening Questionnaire (KPSP), and visual and auditory tests specifically designed for children aged 4-6 years. The primary data sources consisted of direct observations and instrument completion by the researcher, including the use of child development measurement tools and anthropometric measurements (height and weight to calculate Body Mass Index/BMI). Data analysis was carried out descriptively, with results presented in the form of frequency distribution tables and narrative descriptions, and further analyzed to identify trends in children's growth and developmental characteristics.

## Result

**Table 1 Characteristics of Respondents Based on Age**

Age	F	%
0-11 Months	9	30%
12-17 Months	3	10%
18-23 Months	2	6,7%
24-35 Months	3	10%
36-47 Months	2	6,7%
48-59 Months	6	20%
60-72 Months	5	16,7%
<b>Total</b>	<b>30</b>	<b>100%</b>

Based on Table 1, the respondent characteristic data by age shows that the majority of respondents are in the 0-11 months age group, totaling 9 people (30%). Next, there are 6 respondents aged 48–59 months (20%), and 5 respondents aged 60–72 months (16.7%). Respondents in the age

range of 12–17 months and 24–35 months each total 3 people (10%), while those aged 18–23 months and 36–47 months each total 2 people (6.7%).

**Table 2 Characteristics of Respondents Based on Gender**

<b>Gender</b>	<b>F</b>	<b>%</b>
Female	17	56,67%
Male	13	43,33%
<b>Total</b>	<b>30</b>	<b>100%</b>

Based on the characteristics of the respondents by gender, it is known that the majority of respondents are female, totaling 17 people (56.67%), while male respondents number 13 people (43.33%). This indicates that the proportion of girls in this study is higher than that of boys.

**Table 3 Characteristics of Respondents Based on Growth**

<b>Growth</b>	<b>F</b>	<b>%</b>
Short	3	10%
Tall	2	6,67%
Normal	17	56,67%
Thin	3	10%
Fat	3	10%
Obesity	2	6,67%
<b>Total</b>	<b>30</b>	<b>100%</b>

Based on Table 3, the characteristics of the respondents based on growth indicate that the majority of children are categorized as short, with 3 children (10%), while those categorized as tall amount to 2 children (6.67%). This data shows that there is variation in children's growth, although most others fall into the normal height category, which is not displayed in the table. Meanwhile, the nutritional status data based on weight relative to height indicates that the majority of respondents are in the normal category, with 17 children (56.67%). Respondents categorized as underweight consist of 3 children (10%), overweight 3 children (10%), and obese 2 children (6.67%). This suggests that although most children have good nutritional status, there are still children with at-risk nutritional status who require special attention in monitoring and further intervention.

**Table 4 Characteristics of Respondents Based on Development**

<b>Development</b>	<b>F</b>	<b>%</b>
According to age	24	80%
Doubtful	4	13,33%
Deviation	2	6,67%
<b>Total</b>	<b>30</b>	<b>100%</b>

Based on the results of the Pre-Screening Development Questionnaire (KPSP), it is known that the majority of children are in the age-appropriate category, totaling 24 children (80%). A total of 4 children (13.33%) are in the dubious category, and 2 children (6.67%) show developmental deviations. This data indicates that most children are developing according to their age stage, but special attention is still needed for those who have dubious or deviating results to receive appropriate stimulation and intervention.

**Table 5 Characteristics of Respondents Based on Sensory Test Results Age 4-6 Years**

Examination Category	Result Category	F	%
<b>1. Visual acuity test</b>	Normal	26	86,67%
	Deviation	4	13,33%
	<b>Total</b>	<b>30</b>	<b>100%</b>
<b>2. Hearing test</b>	Normal	25	83,33%
	Deviation	5	16,67%
	<b>Total</b>	<b>30</b>	<b>100%</b>

Based on the examination results of 30 children, in the hearing test, 86.67% of the children have age-appropriate results, while 13.33% show a possibility of deviation. In the vision test, 83.33% of the children have good eyesight, and 16.67% have poor eyesight.

**Table 6 Characteristics of Respondents Based on the Results of Child Head Circumference Measurements**

Measurement Result Category	F	%
Normal	25	83,33%
Microcephaly	3	10%
Macrocephaly	2	6,67%
<b>Total</b>	<b>30</b>	<b>100%</b>

Based on the measurement results of head circumference in 30 children, the majority of the children have a head circumference in the normal category, with 25 children (83.33%). Meanwhile, there are 3 children (10%) who are indicated to have microcephaly, and 2 children (6.67%) who are classified as having macrocephaly.

**Table 7 Characteristics of Respondents Based on Upper Arm Circumference Measurement of Children**

Measurement Result Category	F	%
Malnutrition <11,5 cm	0	0%
Undernutrition 11,5 – 12,4 cm	1	2,33%
Good Nutrition >12,5 cm	29	96,67%
<b>Total</b>	<b>30</b>	<b>100%</b>

Based on the measurement results of Mid-Upper Arm Circumference (MUAC) on 30 children, the majority, which is 29 children (96.67%), fall into the green category, meaning they are healthy or have good nutrition with an upper arm circumference of  $\geq 12.5$  cm. A total of 1 child (3.33%) is included in the yellow category with an upper arm circumference exactly at 11.5 cm, indicating that the child is experiencing undernutrition. No children were found in the red category (<11.5 cm) or undernutrition in this examination.

## Discussion

### 1. Respondent Characteristics Based on Age

According to the Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 137 of 2014 on National Standards for Early Childhood Education, early childhood is classified into three age groups: 0 to <2 years (infants), 2 to <4 years (toddlers), and 4 to 6 years (preschoolers). Each age group exhibits different developmental characteristics, making it important to understand the age distribution of respondents in a study on child growth and development.

### 2. Respondent Characteristics Based on Gender

Gender is an important factor in the study of early childhood growth and development. Biological and hormonal differences between boys and girls can influence various aspects of development, such as motor skills, cognition, and language. Girls generally develop language skills more quickly, whereas boys tend to excel in gross motor development. Understanding gender distribution among respondents helps researchers and practitioners identify specific needs and design appropriate interventions based on each child's characteristics. Additionally, gender differences influence nutritional needs due to body composition differences. Girls typically have more fat tissue and less muscle mass than boys. Since muscle tissue is metabolically more active than fat, boys have a proportionally higher energy requirement. Research by Tsani et al., (2018) showed that girls feel full more quickly than boys, making boys more prone to obesity due to excess nutritional intake. Although gender may not directly influence stunting, nutritional needs between boys and girls still differ (Sekarani, 2022).

### 3. Respondent Characteristics Based on Growth

Most children showed normal growth, likely because this research was conducted in an urban area where educational programs about balanced nutrition are prevalent. These programs have successfully increased parents' awareness about meeting children's nutritional needs, thereby supporting optimal child growth. This is also aided by the availability of technology and social media (Kartini et al., 2019).

Nutrition from the family environment plays a key role in a child's growth. Adequate nutrition supports the child's physical and mental development, whereas both undernutrition and overnutrition can have negative effects, such as fat accumulation in body tissues and blood vessels, potentially impairing blood circulation (Humaedi & Kamarudin, 2017).

Despite this, some children in the study were categorized as underweight, overweight, or obese. These findings align with a study by Permatasari et al., (2024) on early childhood development detection at TK Aisyiyah Bustanul Athfal 31 in Banjarmasin, which also found most children exhibited normal growth, although some fell into the overweight, obese, or underweight categories.

### 4. Respondent Characteristics Based on Development

At an early age, children rely heavily on their parents to meet their nutritional needs. Parents with good knowledge about balanced nutrition are more likely to provide sufficient and appropriate food, supporting the child's growth and preventing issues like malnutrition or obesity. However, parental knowledge is influenced by socioeconomic, educational, and environmental factors. Parents with higher education levels generally have better nutritional knowledge, whereas an unsupportive environment may lead to poor parenting practices, negatively affecting the child's nutritional status. In addition to nutrition, parental affection and attention are also crucial for a child's physical and mental development. A safe and comfortable environment can improve appetite and overall health. Therefore, understanding the correlation between parenting style and early childhood nutrition is essential for designing effective interventions (Samta et al., 2024)

Nevertheless, this study found that some children in Cihideung District exhibited questionable or deviant development. This can be influenced by environmental conditions, a lack of parental knowledge, or unfulfilled basic needs. These findings are consistent with the theory by Permatasari, et al., (2024), which states that questionable development arises when a child fails to pass or complete two developmental stages, either due to an inability to perform the tasks or a lack of motivation. Meanwhile, deviations occur when a child lags behind in completing several important developmental stages.

#### 5. Respondent Characteristics Based on Visual and Hearing Test Results for Children Aged 4-6 Years

Hearing impairment in children can be detected by observing several signs, such as a lack of interest in sound-producing (vocal) toys, avoidance of social interaction, frequent confusion and anxiety, facial expressions indicating confusion, and a lack of interest in communicating with peers. Additionally, children with hearing issues are often more responsive to movement than to sound. Early detection of hearing impairments allows for quicker intervention, increasing the chances of successful therapy. This is crucial to prevent developmental disorders in early childhood (Jauhari, 2020).

Children heavily rely on visual information to support their development from infancy through childhood. If a child experiences visual difficulties, it can negatively impact their learning process and interaction with their environment. Many visual impairments can be effectively addressed if detected and treated early, but delayed intervention often complicates treatment. Therefore, conducting visual acuity tests in preschool-aged children (4-6 years) is essential to detect visual abnormalities early. Timely intervention can help children achieve optimal visual acuity (Sulistyorini & Diana, 2017).

The results of visual and hearing tests in children aged 4–6 years can reflect the health status of their sensory functions. Research conducted in Cihideung Subdistrict showed that most children had normal vision and hearing, though a small number exhibited mild to moderate impairments requiring further intervention. These conditions are often influenced by environmental factors, nutrition, and family medical history. Furthermore, early detection and treatment of sensory impairments during preschool years can significantly enhance children's learning abilities and socio-emotional development (Jauhari, 2020).

Thus, the results of visual and hearing tests serve as important indicators in assessing the characteristics of children aged 4-6 years and form the basis for appropriate interventions to optimally support their growth and development.

#### 6. Respondent Characteristics Based on Head Circumference Measurements

In the Pre-Screening Questionnaire, a child's head circumference is considered normal if it falls within the green zone of the growth chart. If it is above the green zone, it is categorized as macrocephaly, while below the green zone is classified as microcephaly. Head circumference holds particular significance because, unlike other body parts, changes in head size can indicate underlying health issues. An enlarged head may suggest hydrocephalus, while slow head growth may reflect developmental delays or nutritional problems (Prastiwi, 2019). As shown in Table 6, the majority of children (83.33%) had head circumferences within the normal range. However, 3 children (10%) were identified with microcephaly, and 2 children (6.67%) with macrocephaly. Microcephaly is often associated with a risk of intellectual disability, while macrocephaly can result from cerebrospinal fluid buildup, as seen in hydrocephalus, causing the head to grow larger than normal (Prastiwi, 2019).

Beyond growth factors, a child's head circumference often mirrors the head size of their parents in adulthood. Other contributing factors include prenatal complications such as intrauterine infections, chromosomal abnormalities, or genetic disorders. Therefore, regular monitoring of head

circumference is essential, especially up to the age of two. If any abnormalities are detected, further examination is necessary to determine the cause and initiate early intervention (Shabariah et al., 2016).

#### 7. Respondent Characteristics Based on Upper Arm Circumference Measurements

The measurement of Upper Arm Circumference (Mid-Upper Arm Circumference/MUAC) is a simple, easy, inexpensive, and convenient method for detecting nutritional status, particularly acute malnutrition in toddlers and chronic energy deficiency in pregnant women in developing countries. Despite its simplicity, this measurement still requires proper training and standardized procedures to ensure accurate results. MUAC provides immediate, accurate, and sensitive results for detecting malnutrition in toddlers, especially those at high risk of mortality. This measurement does not require specialized skills and can be conducted by anyone in the field. However, it is essential to follow standard protocols to avoid errors that could lead to false positives, resulting in unnecessary referrals and overburdened healthcare services or false negatives, which may leave malnourished children undiagnosed and untreated (Haning et al., 2024).

According to UNICEF, MUAC results in toddlers are categorized into three color-coded nutritional statuses: green ( $\geq 12.5$  cm) indicates healthy or good nutrition; yellow (11.5–12.4 cm) indicates undernutrition; and red ( $< 11.5$  cm) indicates severe malnutrition. Based on the measurements taken from 30 children, the majority 29 children (96.66%) were in the good nutrition category, while 1 child (3.33%) was categorized as undernutrition. No cases of severe malnutrition were found in this assessment. These results indicate that most children in the sample have a good nutritional status. However, special attention is needed for children whose MUAC is at the lower threshold to prevent deterioration in nutritional status. Accurate and standardized MUAC measurements are essential to ensure early detection of nutritional problems and timely, appropriate intervention.

### Conclusion

Based on the findings from the study conducted on children aged 3 to 72 months in the Cihideung District, Tasikmalaya City, it was found that the majority of children showed positive developmental progress. However, it is important to recognize that child development cannot be generalized, as each child is influenced by different backgrounds, environments, and parenting styles, which affect individual outcomes. Therefore, early detection of growth and development should not be treated merely as a routine procedure, but rather as a strategic step that must be implemented consistently to support each child's full potential.

This study also highlights the crucial role of parental involvement not only in providing appropriate stimulation but also in observing and responding to any factors that may hinder developmental progress. Moreover, the findings reinforce the importance of collaboration among various stakeholders, particularly families, healthcare professionals, community health workers (Posyandu cadres), and educators, in developing effective strategies for childcare and developmental monitoring. When all parties actively engage and work together, the chances of children achieving optimal growth increase significantly. In the long term, this cross-sector collaboration can lead to the establishment of a more effective, efficient, and sustainable system for early detection and stimulation of child development.

In conclusion, routine implementation of early detection, along with efforts to strengthen the capacity of parents and community cadres, is key to ensuring quality child development from an early age. This research not only provides insight into the current developmental conditions but also



encourages the emergence of collective awareness to reinforce the foundation of child development during the preschool years. As such, the study can serve as a basis for the formulation of programs or policies that support comprehensive and optimal child growth and development.

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