

## The Importance of Basic Health in Early Childhood: An Observational Study at UPTD Puskesmas Cempae, Parepare City

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### Abstract

Basic health in early childhood constitutes a critical foundation for optimal growth and development that determines the quality of human resources in the future. Early childhood (0–6 years), known as the golden age, is characterized by rapid brain development reaching approximately 90% of adult brain capacity. This study aimed to examine the implementation of basic health programs for early childhood, including Clean and Healthy Living Behavior (PHBS), balanced nutrition fulfillment, and immunization at UPTD Puskesmas Cempae, Parepare City. The study used a descriptive qualitative approach through direct observation and documentation at the Maternal and Child Health (KIA) unit, conducted from April 20–22, 2026. Results indicated that the PHBS program has been running satisfactorily, with positive indicators in handwashing habits and school environmental hygiene, although health center guidance remains limited to approximately once per year. In the nutritional aspect, a stunting prevalence of 2% was found among 730 registered toddlers. Complete basic immunization coverage remained below 90%, influenced by parental fear of side effects, misinformation, and socioeconomic factors. The success of basic health programs for early childhood requires active synergy among health workers, families, schools, and communities as an integrated and sustainable health ecosystem.

### Keywords

Early Childhood Health; PHBS; Balanced Nutrition; Immunization; Stunting; Health Center



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## INTRODUCTION

Health is a fundamental pillar in supporting optimal early childhood growth and development. Good health not only influences a child's physical development but also directly impacts cognitive, language, socio-emotional, and moral development, which collectively determine the quality of future human resources (Soetjningsih & Ranuh, 2020). During early childhood (0–6 years), known as the golden age, approximately 90% of brain development occurs rapidly, making this

period the most crucial time in human life for appropriate, sustainable, and comprehensive health interventions.

In Indonesia, basic early childhood health programs have become a priority on the national development agenda, as stipulated in Minister of Health Regulation Number 43 of 2019 concerning Community Health Centers (Puskesmas), which emphasizes that maternal and child health (MCH) services are essential public health efforts. This policy direction was further strengthened by Minister of Health Decree Number 920 of 2025, which prioritized maternal and child health services in Indonesia's human resource development for 2026–2030. This policy commitment reflects the government's awareness of the importance of early health investment as a foundation for sustainable national development. Globally, a World Health Organization (WHO, 2022) report shows that immunization-preventable diseases still cause approximately 1.5 million child deaths annually worldwide. Meanwhile, UNICEF (2022) reports that approximately 149 million children under the age of 5 experience stunting—a condition of stunted growth due to chronic malnutrition that affects not only physical but also cognitive capacity and future productivity. This global reality confirms that basic early childhood health issues remain a challenge that requires systematic and multi-sectoral intervention.

In Indonesia, data from the 2022 Indonesian Health Profile (Ministry of Health, 2023) shows that complete basic immunization coverage remains uneven across all regions, with some regions—particularly in rural and border areas—recording rates below 70%. Meanwhile, the national stunting prevalence based on the 2022 Indonesian Nutritional Status Survey (SSGI) stands at 21.6%, despite a significant decline from 30.8% in 2018. The Indonesian government's target of reducing stunting prevalence to 14% by 2024 demonstrates the urgency of child nutrition, which still requires more intensive and coordinated intervention efforts. Community health centers (Puskesmas), as first-level health facilities and the backbone of Indonesia's primary healthcare system, play a highly strategic role in implementing basic early childhood health programs. Through a variety of promotive, preventive, curative, and rehabilitative services, puskesmas play a frontline role in ensuring every child's basic right to health. The Cempae Community Health Center (UPTD), located in Parepare City, South Sulawesi, is one of the health facilities actively implementing integrated basic early childhood health programs within the framework of Minimum Service Standards (SPM) in the health sector.

Clean and Healthy Living Behavior (PHBS), balanced nutrition, and immunization are three main pillars of early childhood basic health that are

interrelated and mutually reinforcing. Good PHBS prevents the entry of pathogens into a child's body, balanced nutrition builds a strong immune system, and immunization provides specific protection against dangerous infectious diseases. The combination of these three pillars synergistically creates an optimal health ecosystem for child growth and development (Notoatmodjo, 2020). However, in practice, the implementation of these three pillars still faces various multidimensional challenges. Various studies have explored specific aspects of basic child health programs in community health centers (Puskesmas), but studies that comprehensively examine all three pillars—PHBS, nutrition, and immunization—within a single, facility-based observational framework are still relatively limited in the context of mid-sized cities in South Sulawesi. Research by Arifin et al. (2022) demonstrates the importance of observation-based evaluation in identifying gaps in program implementation that are not always detected through administrative reporting data. Therefore, direct observation-based research, such as that conducted at the Cempae Community Health Center (Puskesmas UPTD), has significant scientific value in providing a snapshot of real-world conditions.

Furthermore, family and community factors are crucial determinants of the success of early childhood health programs. Parents, as primary caregivers, play a significant role in developing healthy lifestyle habits, determining dietary patterns, and deciding on participation in immunization programs. Parents' knowledge, attitudes, and behaviors regarding children's health directly influence their health status (Fitriani & Wahyuni, 2021). Active community involvement, including integrated health service post (Posyandu) cadres and early childhood education (PAUD) educators, has also been shown to strengthen the effectiveness of facility-based health programs. Based on this background, this study aims to: (1) describe the implementation of the PHBS program for early childhood within the Cempae Community Health Center (Puskesmas UPTD); (2) identify the level of balanced nutrition and stunting issues among toddlers in the Cempae Community Health Center area; (3) assess the coverage of complete basic immunization and the factors influencing it; and (4) analyzing the strategies taken by community health centers in overcoming the challenges faced in implementing early childhood basic health programs. The findings of this study are expected to provide evidence-based input for improving the quality of early childhood health programs, especially in primary health facilities.

## **METHODS**

This study employed a qualitative descriptive approach, chosen because it aligned with the research objective of obtaining an in-depth, contextual, and comprehensive overview of the implementation of the early childhood basic health program at the Cempae Community Health Center (Puskesmas UPTD). A qualitative approach allows researchers to understand phenomena holistically in their natural context, with the researcher as the primary instrument for data collection (Hidayat, 2020). The descriptive design was chosen because this study did not aim to test a hypothesis, but rather to describe the actual conditions of the early childhood basic health program as they exist in the field.

The study was conducted at the Cempae Community Health Center UPTD, located at Jalan Petta Oddo No. 03, Parepare City, South Sulawesi Province. The location was chosen based on strategic considerations: the Cempae Community Health Center UPTD is a primary health care facility actively implementing a comprehensive early childhood basic health program, has well-documented service data, and is accessible for researchers to conduct direct observations. The study was conducted over three consecutive days, April 20–22, 2026, coinciding with the routine schedule of maternal and child health services at the community health center. Based on the results obtained, this study focused on three main early childhood basic health programs: (1) the PHBS program, including handwashing education activities, the UKS program, and PHBS guidance in schools supported by the community health center (Puskesmas); (2) the nutrition program, including monitoring toddler nutritional status, providing supplementary feeding (PMT), detecting stunting, and providing nutrition counseling to parents; and (3) the immunization program, including complete basic immunization coverage, strategies for handling immunization refusals, and home visits. The quantitative data observed included the total number of registered toddlers (730 children), the prevalence of stunting (2%), and immunization coverage (<90%) as recorded in the community health center's KIA service records.

Data were collected using two complementary primary techniques. First, direct observation was conducted by researchers in the community health center's KIA unit over three days of the study. Observations focused on: the implementation of immunization services, weighing and monitoring toddler nutrition, PHBS counseling materials and methods provided to parents, and the process of handling problematic nutritional cases. A structured observation guide sheet was used to ensure consistency of observations between researchers and the completeness of the collected data. Second, documentation techniques were conducted by collecting and

analyzing relevant official community health center documents, including: monthly reports on the KIA program, summary data on integrated health post visits, records of toddler nutritional status in the Health Card (KMS), immunization coverage data, and community health center program plan documents. Photographic documentation of activities was also conducted to visually support the observation descriptions. Primary data obtained from observations and documentation were validated through cross-confirmation with KIA officers assigned to the research sites.

Data from observations and documentation were analyzed using descriptive-interpretive analysis techniques, which were carried out in three sequential stages: (1) data reduction, namely the process of selecting, centralizing, simplifying, and transforming raw data from field notes; (2) data presentation, namely the arrangement of organized information in the form of narrative text, data summary tables, and analytical matrices to facilitate drawing conclusions; and (3) conclusion drawing/verification, namely the process of interpreting the meaning of the patterns and relationships between the identified data. Descriptive quantitative data (numbers, percentages) are presented in tabular form to clarify the observed program. The validity of the data in this study was ensured through a source triangulation strategy, namely by comparing and confirming direct observation findings with official community health center documentation data. Furthermore, member checking was conducted by confirming the accuracy of the researcher's interpretation with competent KIA officers at the community health center. Diligent observation over three consecutive days also ensured that the data obtained reflected consistent and representative conditions, not temporary, anomalous conditions.

## **FINDINGS AND DISCUSSION**

### **General Overview of UPTD Cempae Health Center**

The Cempae Community Health Center (UPTD) is a first-level health facility serving the West Bacukiki District and its surrounding areas in Parepare City. Based on observations and documentation conducted during the study, this community health center provides integrated maternal and child health services, including monitoring the health of pregnant women, childbirth, postpartum women, infants, and toddlers. A total of 730 children registered and actively using the Cempae Community Health Center's maternal and child health services are the primary targets of the early childhood basic health programs examined in this study.

The health workers assigned to the KIA unit consist of midwives and nurses who work in direct coordination with the Head of the Community Health Center. The KIA programs implemented include: (a) toddler health services including

immunization, weighing, and growth and development monitoring; (b) provision of nutritional supplements such as vitamin A and iron tablets; (c) PHBS guidance in assisted schools; and (d) SDIDTK activities carried out periodically at integrated health posts (posyandu) and early childhood education institutions (PAUD/TK) within the working area.

Table 1. Summary of Basic Health Program Data for Early Childhood Education at the Cempae Community Health Center UPTD, April 2026

No	Program Indicators	Data/Conditions	Information
1	Total registered toddlers	730 children	Active in KIA services
2	Prevalence of stunting	2% (~14-15 children)	Of the total of 730 toddlers
3	Complete basic immunization coverage	< 90%	Age 0–2 years
4	Frequency of PHBS coaching	±1 time/year	At the fostered school
5	SDIDTK Activities	Monthly routine	At integrated health posts and early childhood education centers
6	Immunization home visit	2-3 times/case	For immunization refusers

*Source: Observation Data and Documentation of KIA UPTD Cempae Health Center, April 2026*

### **Implementation of the Clean and Healthy Living Behavior (PHBS) Program**

The results of observations during the three-day research showed that the implementation of the PHBS program within the Cempae Community Health Center's UPTD has generally shown positive developments. In the schools under its supervision, a number of PHBS indicators that were successfully observed included: (a) the habit of disposing of waste in a place that has been built quite well; (b) the availability of adequate handwashing facilities in the school environment; (c) children's understanding of the six steps of proper handwashing through song and game methods; and (d) efforts to protect children from exposure to cigarette smoke in the school environment.

The PHBS education method implemented by the Cempae Community Health Center extension team uses an approach tailored to the developmental stages of early childhood. The use of visual media in the form of illustrated posters, animated videos, and handwashing props has proven to be more engaging for children than

conventional lectures. A live demonstration of the six steps of CTPS accompanied by songs has become a mainstay method consistently used in every educational activity at the school. In addition to CTPS, the PHBS material provided also covers personal hygiene such as regular tooth brushing, hair washing, nail clipping, and ear cleaning.

However, observations also identified several limitations in the implementation of the PHBS program. Most significantly, the intensity of guidance from community health centers (Puskesmas) is still very limited, reaching only about once per year for each target school. This low frequency is insufficient to ensure the sustainability and consistency of PHBS implementation. Consequently, the quality and continuity of PHBS in schools depend heavily on the commitment and capacity of teachers to implement daily habits—factors that vary from school to school.

The disconnect between PHBS behaviors at school and at home was also identified as a significant challenge. Several teachers interviewed during observations reported that children who had become accustomed to washing their hands at school often did not do so at home due to a lack of facilities and parental supervision. This indicates the need to expand PHBS programs to the family environment through approaches that actively involve parents, such as PHBS-based parenting training and the dissemination of PHBS household guidelines.

### **Conditions for Fulfilling Balanced Nutrition and Handling Stunting**

Medical records from the MCH service accessed during the study showed that of the 730 registered toddlers, approximately 2% were identified as having stunting. This figure, while relatively low compared to the national stunting prevalence (21.6% according to the 2022 SSGI), remains a serious concern given the long-term impact of stunting, which cannot be fully reversed after the first 1,000 days of life (HPK). Based on observations and information from MCH officers, stunting cases begin to become clinically apparent in children aged 4–5 years, coinciding with the transition to formal education.

The factors causing stunting cases identified through observation and documentation data include: (1) inadequate maternal nutritional intake during pregnancy as a primary cause that increases the risk of Low Birth Weight (LBW); (2) suboptimal complementary feeding practices, including providing complementary feeding too early (before 6 months of age), too late, or not meeting food diversity standards; (3) children's diets dominated by instant foods and high-calorie but low-nutrition snacks; and (4) suboptimal sanitation conditions in some community health center work areas that increase the frequency of intestinal infections in children.

Table 2. Risk Factors and Efforts to Address Nutritional Problems at the Cempae Community Health Center UPTD

No	Risk Factors	Health Center Efforts	Status
1	Malnutrition in pregnant women →LBW	Routine ANC check-ups, Fe tablets, nutritional counseling	Walk
2	MPASI is not optimal	MPASI counseling, healthy cooking demonstration	Periodic
3	Undiverse eating patterns	Balanced nutrition counseling at integrated health posts	Monthly
4	Malnutrition status	Provision of PMT, nutritional references	Depends on funds
5	Non-routine monitoring	Monthly SDIDTK, KMS, e-PPGBM	Walk

Source: Observation Data and Documentation of KIA UPTD Cempae Health Center, April 2026

The Cempae Community Health Center's stunting management and prevention efforts include interventions at several critical points. For pregnant women, routine monitoring through antenatal care (ANC), iron supplementation, and nutritional counseling are conducted to ensure optimal nutritional intake during pregnancy. For toddlers, growth monitoring is conducted periodically through monthly integrated health service posts (Posyandu) activities, recorded in the Child Health Card (KMS) and inputted into the e-PPGBM (Community-Based Nutrition Recording and Reporting) system. Children who show signs of weight loss or failure to thrive for four consecutive months will be referred for intensive care.

The Supplementary Feeding (PMT) program, long a mainstay of community health centers (Puskesmas) in addressing malnutrition, is being strengthened through the government's newly launched Free Nutritious Meals (MBG) program. Coordination between the puskesmas' PMT program and the national MBG program is expected to expand the reach of nutritional interventions to at-risk toddlers who were previously out of reach. However, the sustainability of the PMT program remains highly dependent on the availability of budgets from local governments, which fluctuate from year to year.

### **Coverage and Challenges of Immunization Program Implementation**

Observations and documentation data collected during the study indicate that complete basic immunization coverage in the Cempae Community Health Center (UPTD) working area for children aged 0–2 years is below 90%—below the Universal Child Immunization (UCI) target set by the Indonesian Ministry of Health of 95%.

This condition is one of the priorities for attention in the health center immunization program performance report, considering the significant impact of low immunization coverage on the risk of vaccine-preventable disease (PD3I) outbreaks.

Through observations and informal interviews with immunization officers during the three-day study, five categories of factors inhibiting immunization coverage were identified. First, parental fear of post-immunization side effects—such as fever, pain, and local swelling—was the most frequently encountered barrier. A lack of adequate pre-immunization counseling left parents unprepared for reactions that were actually normal and temporary. Second, misinformation about vaccine safety circulating on social media created widespread vaccine hesitancy in the community. Third, logistical factors such as busy parents and inflexible immunization schedules led to missed child immunizations.

Fourth, in some cases, refusal of immunization was found to be based on certain beliefs or convictions that are more fundamental and require a more comprehensive approach than simply providing information. Fifth, physical access barriers are still experienced by some families in outlying areas far from community health centers and integrated health posts (Posyandu), although in Parepare City these barriers are relatively smaller compared to remote areas.

In response to low immunization coverage, the Cempae Community Health Center (Puskesmas) has developed a phased, empathy-based approach. The first step is two to three home visits for parents who refuse or have not yet completed their child's immunizations. These visits are not coercive, but rather provide support and education, focusing on building trust and clarifying concerns in person. If, after several visits, parents still refuse, the community health center will require them to sign a refusal statement as a final administrative and educational measure.

## **DISCUSSION**

### **Analysis of PHBS Program Implementation**

The findings of this study indicate that the PHBS program at the Cempae Community Health Center (Puskesmas UPTD) has achieved commendable progress, particularly in the use of educational methods appropriate to the characteristics of early childhood. The use of songs, games, and visual media in teaching CTPS habits implements the principles of experiential learning, which have been scientifically proven to be effective (Kusumawati, 2025). This approach aligns with Vygotsky's child learning theory, which emphasizes the importance of scaffolding and social learning in developing new habits in preschool children.

However, the limited frequency of PHBS guidance, which is only about once per year, is a concerning finding. Research by Sunarno et al. (2025) demonstrated that the formation of sustainable habits requires consistent repetition at relatively short intervals. A frequency of once per year is far below the minimum threshold required for behavioral internalization in early childhood, which typically requires repetition at monthly or biweekly intervals to produce lasting behavioral change.

The gap between PHBS practices at school and at home identified in this study confirms the findings of Dhihu et al. (2026), who showed that the sustainability of children's healthy behaviors is highly dependent on the consistency of the environment—both school and home—in providing support and modeling behavior. Without the active involvement of parents as role models at home, PHBS habits established at school are at risk of regressing. Therefore, a comprehensive PHBS program must explicitly include a parent education component as an integral part of the intervention strategy.

Utilizing digital platforms—such as parent WhatsApp groups and social media—as health education channels presents an opportunity that community health centers (Puskesmas) can optimize. Research by Pebriyanti et al. (2025) shows that effective use of digital media can expand the reach and frequency of health messages to parents at a relatively low cost. Integrating digital education with face-to-face activities at integrated health posts (Posyandu) and schools can create a more comprehensive and sustainable PHBS education ecosystem.

### **Dynamics of Nutritional Problems and Efforts to Address Them**

The 2% prevalence of stunting among the 730 toddlers found in this study, while far below the national average, remains a condition that requires serious intervention given the permanent and multidimensional nature of stunting. This is consistent with the national trend of declining stunting, but it also indicates that some children remain outside the reach of existing nutritional interventions. Identifying these vulnerable groups—generally from families with low socioeconomic status or low nutritional knowledge—is a key step in more targeted targeting of limited resources.

The finding that suboptimal maternal nutritional intake is a major risk factor for stunting confirms the WHO's (2020) emphasis on the importance of interventions during the first 1,000 days of life (HPK). Interventions during the 1,000-day window—from conception to 2 years of age—have a significantly greater impact than interventions conducted after that period. This underscores the importance of

integrating prenatal nutrition services with infant and toddler health programs within a single, uninterrupted continuum of care.

The PMT program's dependence on local government budgets represents a systemic vulnerability that needs to be addressed. Azizah (2025) emphasized the need to diversify funding sources for nutrition programs through partnerships with the private sector, corporate social responsibility (CSR) programs, and leveraging local community potential. The independent integrated health service post (Posyandu) model, which develops productive businesses to independently finance the PMT program, is a proven innovation in several regions and could be adapted in Parepare City. Parents' limited operational knowledge of balanced nutrition—including the principles of food diversification and techniques for preparing nutritious complementary foods—was also identified as a significant contributing factor. Sari (2025) demonstrated that a nutrition counseling program using a cooking class approach with parents was more effective in changing feeding behavior than conventional verbal counseling. Integrating this educational model into monthly integrated health post (Posyandu) activities could be an effective strategy for practically improving parents' nutritional competency.

### **Challenges of Immunization Coverage and Strengthening Strategies**

The incomplete basic immunization coverage target of 90% in the Cempae Community Health Center (Puskesmas) is a reflection of the systemic challenges facing the national immunization program. Wahyuningrum & Suryani (2019) identified that the phenomenon of vaccine hesitancy—reluctance or refusal to receive vaccines despite their availability—is a global threat to immunization coverage, becoming increasingly significant in the information age. Addressing vaccine hesitancy requires a different approach than addressing physical access barriers, namely through persuasive communication, evidence-based education, and ongoing trust-building. The home visiting strategy implemented by the Cempae Community Health Center (Puskesmas) is an appropriate and evidence-based approach. Rahmawati et al. (2021) demonstrated that home visiting interventions by trained health workers increased booster immunization coverage by 25–30% in areas with high refusal rates. The key to successful home visits is a non-confrontational approach, but rather one based on empathy and understanding of parents' specific concerns.

Israeli et al. (2025) emphasized the importance of integrating quality pre-immunization counseling as a standard part of every immunization session. Effective pre-immunization counseling should include an explanation of the benefits of

vaccines, how vaccines work to build immunity, possible post-immunization reactions and how to manage them, and the clarification of circulating myths and misinformation. Parents who receive adequate counseling demonstrate significantly higher rates of immunization schedule compliance. Utilizing digital information systems for immunization schedule management—such as sending schedule reminders via SMS or instant messaging apps to parents—is an innovation that can significantly reduce immunization dropout due to forgetfulness or busyness. Maryunani (2019) showed that digital reminder systems can reduce immunization dropout rates by up to 30%. Implementing this system does not require significant technological investment and can utilize existing infrastructure in the community.

### **Multi-Actor Synergy as the Key to Success**

The findings of this study consistently demonstrate that the success of early childhood basic health programs cannot be achieved by a single entity. Community health centers (Puskesmas) possess the technical capacity and health authority, but are limited in their reach and frequency of interaction with the community. Families—particularly parents and caregivers—have the greatest influence on children's daily health behaviors, but often lack knowledge and skills. Schools and early childhood education institutions (PAUD) have daily access to children but require support with content and competency from health workers. Integrated service post (Posyandu) cadres serve as a bridge between the formal health system and the community, but require continued capacity building.

The ideal synergy model—as recommended by Arifin et al. (2022) and Dhihu et al. (2026)—places community health centers (Puskesmas) as technical coordinators providing standards and guidance, schools/early childhood education centers (PAUD) as spaces for implementing habits, integrated health posts (Posyandu) as platforms for community monitoring and intervention, and families as the primary drivers and custodians of child health. These four actors must operate in a structured coordination, with effective communication and clear role allocation. Strengthening the capacity of integrated health post (Posyandu) cadres through ongoing training is a strategic investment that offers multiple benefits. Trained cadres are not only more effective in monitoring growth and providing nutritional counseling, but they can also act as agents of change, encouraging the adoption of clean and healthy lifestyles (PHBS) at the household level. Fitriani & Wahyuni (2021) demonstrated a strong positive correlation between the quality of Posyandu cadres and the health status of toddlers in their areas—a finding that underscores the importance of investing in Posyandu human resources.

## CONCLUSION

Based on the research results and discussions presented, the following conclusions can be drawn. First, the implementation of the PHBS program at the Cempae Community Health Center (UPTD) has shown quite positive progress, utilizing creative educational methods appropriate to early childhood development. However, the frequency of guidance, which is only approximately once per year, and the gap between PHBS behavior at school and at home are key challenges that require immediate address through increased parental involvement. Second, the nutritional status of toddlers in the community health center's work area shows a stunting prevalence of 2% out of 730 toddlers, with the main risk factors being suboptimal maternal nutrition, substandard feeding practices, and limited parental nutritional knowledge. The community health center's existing management efforts—including PMT, monitoring of child health cards (KMS), and SDIDTK—need to be strengthened with a more intensive and participatory nutrition counseling program.

Third, complete basic immunization coverage, which remains below 90%, is an indicator that further intervention is needed. The multidimensional nature of the barriers—from fear of side effects to misinformation—requires a comprehensive response, including quality pre-immunization counseling, proactive home visits, and community-based health literacy. Fourth, active synergy between community health centers (Puskesmas), families, schools/PAUD (Early Childhood Education Center) and integrated health post (Posyandu) cadres is a determining factor in the success of early childhood basic health programs. No single entity can work independently to achieve optimal impact. Structured coordination, effective communication, and clear role allocation among these actors are fundamental prerequisites for long-term success.

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