



## ANALYSIS OF THE MEDIA FEASIBILITY OF ANDROID-BASED APPLICATIONS "POLA ASUH SEHAT"

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Article Info	Abstract
<p><i>Article History:</i>  Received : 28-10-2025  Approved : 21-07-2025  Published : 31-07-2025</p> <p><i>Keywords:</i>  Application, Nurture,  Grow, Flower</p>	<p><b>Background:</b> One indirect cause of stunting is that many parents still neglect to provide appropriate care for their children due to various factors. In the era of rapidly advancing information technology, digital solutions can offer an alternative for parents to stay updated via electronic media, especially smartphones, due to their convenience compared to reading guidebooks.</p> <p><b>Objective:</b> To assess the feasibility of an Android-based application product called "Pola Asuh Sehat" (Pola Asuh Sehat). <b>Method:</b> This study employs research and development (R&amp;D) with the ADDIE development model. The research was conducted in the Saigon Community Health Center area, Pontianak City, with a sample of 10 mothers of stunted children, selected through purposive sampling. The research instrument was a closed questionnaire designed to assess feasibility from material experts, media experts, and users. Data were analyzed using univariate data analysis to describe the quality and feasibility of the application. <b>Results:</b> Media expert evaluations of the "Pola Asuh Sehat" application showed an average score of 88.75%, categorized as highly feasible. Material expert evaluations received an average score of 95%, also categorized as highly feasible, while the small group testing received an average score of 81%, classified as highly feasible. <b>Conclusion:</b> "Pola Asuh Sehat" application received a high feasibility rating from media experts, material experts, and from implementation testing in a small group setting.</p>

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### Introduction

A critical period in the growth and development of a child occurs in toddlerhood or the first five years of a child's life, since this fundamental growth will affect and determine the future development of the child (Rahayu et al., 2018). One of the factors that can interfere with children's growth and development is the occurrence of nutritional problems or nutritional deficiencies in the child's body. Stunting is one of the nutritional problems that is still a top priority in efforts to prevent and treat it. The prevalence rate of stunting in children in Indonesia in 2021 is still at 24.4%, where this figure has not met the target set by the RPJMN, which is to reduce it to 14% by 2024 (Izah et al., 2019). West Kalimantan is one of

the 17th highest contributors to stunting prevalence in Indonesia with a figure of 24.5% (Kemenkes RI, 2023). Pontianak City as the provincial capital contributes to the total prevalence of stunting by 16.7% and the working area of the Saigon Health Center by 8.2%.

Indonesia is currently trying to address stunting by providing specific and sensitive nutritional interventions from various sectors that contribute to the causes of stunting. Along with technological advancements, efforts are being made to help parents provide good parenting practices for their children, especially in monitoring the growth and development of children. One such effort is through education, knowledge, and parental attitudes towards parenting, since parenting has a significant role in determining the growth and development of

children (Noftalina, 2019). Especially there are still many parents who neglect to provide proper parenting for their children. Factors that affect parental compliance in providing stimulation include parents' busy work, lack of time with children, and even lack of knowledge about how to stimulate or good parenting practices for children's growth and development. The stimulation method currently used still relies on health workers, with visits made once a month at the posyandu (Ismayani, 2018)

Previous research has shown that there is a significant relationship between various aspects of family parenting, namely feeding habits, parenting habits, hygiene habits, and health service checks, which contribute to stunting in children under five (Ariady et al., 2024). Research by (Putri, 2020) said that poor parenting has an 8 times greater risk of stunting compared to good parenting. The cause of poor parenting is poor parental knowledge and mothers do not understand good parenting (Amanda Thayeb dkk., 2024).

Lack of parental knowledge can lead to inappropriate parenting, but along with the development of globalization and rapid technological advancements, the world of health has also undergone significant transformations, including in stunting prevention (Zahra et al., 2023). Increasing knowledge and skills about parenting that has been widely developed through various health promotion media, such as print, electronic, and board media, as well as the use of information technology as an educational medium to facilitate access and transfer of knowledge (Ernawati, 2022).

In today's increasingly advanced era of information technology, getting information about parenting stimulation shouldn't be difficult. Even busy parents prefer to keep getting information through electronic media (Rambe, 2021), especially smartphones, rather than reading guidebooks because smartphones are more practical and easy to carry and use at any time. This trend makes smartphones very helpful in healthcare, health promotion, and improving health standards compared to manual methods such as manuals (Hadi & Rahayu, 2022).

Several application researches, such as the Terttiaavini (2024) study, show that the Bunda Care Application is an innovative solution for monitoring child growth for stunting prevention. The app makes it easy to record progress, provide educational information, and proactively notify alerts (Terttiaavini, 2024).. The research of Ervin Rufaindah and Patemah (2021) shows that there are differences in knowledge before and after using the Stunting Prevention Application (Rufaindah & Patemah, 2021).

This encourages the need for parenting guidelines that utilize *smartphones*, making it easier for parents to apply proper practices to their children. The product created is a modified parenting guide module and will be packaged in the form of an Android-based application. The app will guide parents by providing knowledge about parenting, including nutrition, hygiene, health, and psychosocial stimulation practices. The app will also include information regarding the child's growth and development according to age, as well as issues related to impaired nutritional status. In the application, parents can also evaluate the parenting practices that have been given by filling out a parenting questionnaire that has been tested for validity and reliability.

Unlike previous research that developed a growth and development application without integrating the evaluation of parenting practices, the "Pola Asuh Sehat" application not only monitors the growth and development of children, but also directly evaluates specific parenting practices. In addition, this application uniquely combines an educational approach with the results of a growth and development assessment based on the standards of the Ministry of Health of the Republic of Indonesia, which makes it more applicable and relevant than the media. Similar. This advantage has not been found in many similar applications, so this study offers a new contribution in the provision of Android-based digital educational media for stunting prevention.

## Method

This research uses research and development (R&D) methods with ADDIE development models which consists of five main stages: (1) Analysis, (2) Design, (3) Development, (4) Implementation, and (5) Evaluation. The population in this study is mothers with stunted children in the working area of the Saigon Health Center, Pontianak City, with a sampling technique using *purposive sampling*. A small group trial was conducted on 10 mothers who had stunted children. The research instrument is in the form of a closed questionnaire aimed at assessing the feasibility of content experts, media experts, and users. Data analysis uses univariate data to describe the quality of applications in terms of feasibility according to the assessment of media experts, content experts, and implementation by users. The type of measurement scale used in this study is the Likert scale. Once the score is determined, the data is applied in the calculation to assess eligibility in the form of a percentage.

Eligibility categories are based on the following criteria.

**Table 1.** Media eligibility criteria

Not	Score in percent (%)	Eligibility Categories
1	< 21%	Very Unworthy
2	21 – 40 %	Not Eligible
3	41 – 60 %	Quite Decent
4	61 – 80 %	Proper
5	81 – 100 %	Highly Worth It

Source: (Kamilah et al., 2023)

## Result

The product produced in this study is the Android application "Pola Asuh Sehat" which contains parental parenting checks, child growth and development checks, and education related to providing good parenting, as well as fulfilling nutrition and stimulating children's growth and development. The stages of making the "Pola Asuh Sehat" application are as follows:

### 1) Analysis

In February 2024, a panduhuluan study was conducted at the Saigon Health Center, Pontianak City, related to the needs of the community through observation methods, documentation studies and interviews with nutrition officers, midwives, and several parents who visited the Health Center. This aims to find out *the urgency* of *stunting cases* and the community's need for information media regarding counseling needed for parents regarding *stunting*. The data that has been obtained from the preliminary study includes that parents who have stunted children are still limited in knowledge about *stunting* prevention, the use of technology developed to get access to information related to *stunting* prevention has not been optimal, and there is still a lack of socialization and innovative products that can be accessed by the public related to *stunting prevention*.

### 2) Design (Design)

The next step is to create a product design. It will be carried out in March 2024. The preparation of material content refers to the 2022 Indonesian Ministry of Health guidebook and WHO standards regarding parenting, growth and development. Application design includes compiling application materials, *application flowcharts*, designing *storyboards*, designing application displays, determining *software* programs that suit the development model, and creating research instruments. For research instruments, it includes questionnaires for material expert feasibility assessment, media expert feasibility assessment, and user feasibility assessment.

### 3) Development

The application development stage will be carried out from April to July 2024. The development of the application is in accordance with the design and *storyboard* that has been designed by the researcher. The features contained in the Pola Asuh Sehat application are as follows:

#### a. Application Logo



**Pola Asuh Sehat**

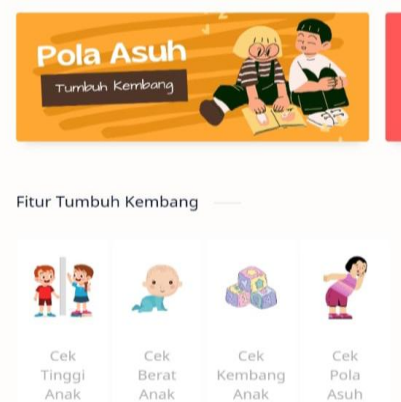
**Figure 1.** App logo display

#### b. Feature

The Pola Asuh Sehat Application has two main features consisting of Growth and Development Features and Parenting Guides. In the Growth and Development Feature, there are four features to check or assess growth (Weight and Height), development and parenting that have been given by parents to their children. In the Parenting Guide feature, there are 12 parenting guidelines that can be a guide for parents in providing parenting practices to their children.

##### (1) Growth and Development Features

The Growth and Development feature consists of Height Check, Weight Check, Progress Check, and Parenting Check.



**Figure 2.** Display of Growth and Development Features

The child height check feature allows parents to monitor the child's height growth at regular intervals. Children's height data can be input and tracked by displaying the results of the analysis in accordance with the standards on stunting from the Minister of Health. With this feature, parents can ensure their child grows optimally and detect early if there are growth

abnormalities that require special attention. The height check feature is divided into four options according to the child's gender and age category. After selecting the next category, fill in the child's date of birth and height, then you can see the status, height nutrition according to the child's age by pressing count and then the results of the analysis will be seen.

Figure 3. Child Height Check Display

The child weight check feature helps parents to monitor their child's weight, ensuring that the child is getting adequate and healthy nutrition. By monitoring a child's weight, parents can ensure that their child is getting adequate nutrition, preventing health problems such as malnutrition or obesity. The weight check feature is also divided into four options according to the child's gender and age category. After selecting the next category, fill in the child's date of birth and weight, then you can see the status, body nutrition according to the child's age by pressing the count and then the results of the analysis will be seen.

Figure 4. Display of Child Weight Check

The child development check feature is designed to monitor various aspects of child development, including motor, cognitive, language, and social development sourced from the Pre-Screening

Developmental Questionnaire (KPSP) (Kemenkes RI, 2022).. With this feature, parents can ensure that their child is developing holistically, identify early on if there are developmental delays, and get the right advice to address the problem. The development check feature is divided into 14 options which are divided according to the child's age category. In this menu, users can fill out the Pre-Screening Development Questionnaire (KPSP) according to the child's age, from this questionnaire information will be obtained about child development including gross motor development, fine motor skills, socialization & independence and language/speaking skills. Then you can fill out the questionnaire by clicking on the Yes/No answer option. The results of the child's development conclusions and recommendations appear.



Figure 5. Child Development Check View

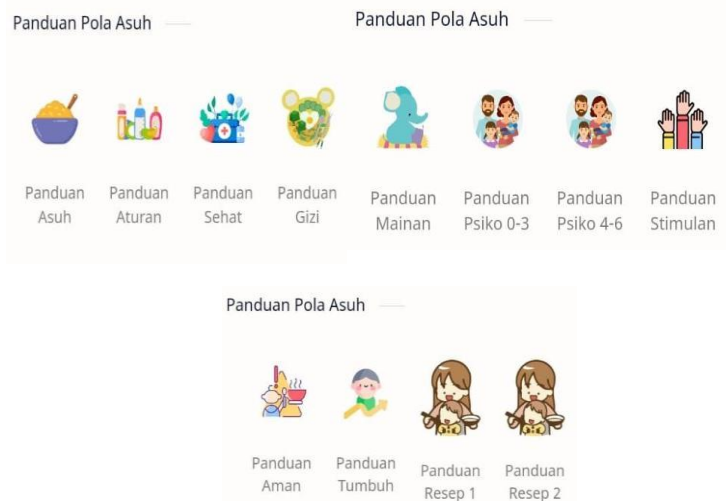
The Parenting Check feature is designed to see the extent of parenting that parents have practiced with their children. The parenting styles checked in this feature include parenting feeding, hygiene parenting, health parenting, and psychosocial parenting.



Figure 6. Parental Parenting Check Display

(2) Parenting Guide

There are 12 parenting guidelines that can be a guide for parents in providing parenting practices to their children.



**Figure 7.** Parenting Guide View

After completing the application design, validation is carried out with the aim of getting consideration from several experts

a. Media expert validation

The media experts who provided validation assessments on this application were 2 people, namely Wandu Sujatmiko, S.Kom., M. Cs (Lecturer of Informatics Engineering and Computer Coordinator of the 'Aisyiyah Polytechnic) and Furqon, ST (IT Tutor). From the assessment of media experts, the Pola Asuh Sehat application got an average score of 88.75% with a very feasible category. The presentation of data analysis can be seen in table 2.

b. Subject matter expert validation

The material experts who provided validation assessments on this application were 3 people, namely Ratna Indah Kartika Sari, M.Keb (Midwifery Lecturer at the Ministry of Health of Pontianak, Hermayanti, S.Tr.Keb., Bdn (Midwife of the Saigon Health Center), Herlina, S.Gz (Nutritionist of the Saigon Health Center). From the results of the assessment conducted by the application material expert, an average score of 95% was obtained with a very feasible category. The presentation of data analysis can be seen in table 3.

4) Implementation Stage

The trial was conducted in August 2024 on 10 mothers who had stunted children, selected through *purposive sampling*. Users are asked to try all the features of the application for 7 days and fill out a feasibility assessment questionnaire. The assessment is focused on the aspects of ease of use, content comprehension, visual appearance, and usefulness. From the results of the assessment carried out on small groups, the Pola Asuh Sehat application got an average score of 81% from 10 respondents with a very feasible category. The presentation of data analysis can be seen in table 4.

**Table 2.** Media Expert Ratings

	Aspects	Member Rating 1	Expert Rating 2	Average score
1	General Aspects	13	15	14
2	Aspects of Software Engineering	29	32,5	30,75
3	Visual and Aesthetic Communication Aspects	30	40	35
4	Ease of Use and Navigation Aspects	8	10	9
Total scoring score		80	97	88,75
Criterion		Proper	Highly Worth It	Highly Worth It

**Table 3.** Subject matter expert assessment

	Aspects	Member Rating 1	Expert Rating 2	Expert Rating 3	Average score
1	Content Quality Aspects and Objectives	63	67	62	64
2	Insturxal Aspects	28	33	32	31
Total scoring score		91	100	94	95
Criterion		Highly Worth It	Highly Worth It	Highly Worth It	Proper

**Table 4.** Assessment from small groups

	Respond	Score	Criterion
1		82	Highly Worth It
2		77	Proper
3		95	Highly Worth It
4		82	Highly Worth It
5		93	Highly Worth It
6		75	Proper
7		75	Proper
8		75	Proper
9		75	Proper
10		78	Proper
Average		81	Highly Worth It

5) Evaluation Stage

Evaluation is carried out in two stages, namely formative and summative:

- a. Formative evaluation is carried out after validation by experts. Feedback was obtained through open-ended questionnaires and semi-structured interviews. Some of the revisions made include: replacing foreign sentences with translations, simplifying instructions, improving font size, and adding media in the form of interactive articles.
- b. The summative evaluation was carried out after the user trial. Quantitative data in the form of Likert scores is used to determine eligibility categories, while qualitative data from user suggestions is used to improve the interface.

The revised application was then registered and uploaded to the *Google Play Store* in September 2024 under the name "Pola Asuh Sehat", and is now publicly accessible with the search keyword "Pola Asuh Sehat".

### Discussion

This "Pola Asuh Sehat" application has quite interesting features containing information about children's health, the language used is also easily accepted, an attractive visualization display, and this application is *user-friendly*. The content of this application is equipped with guidance materials for good parenting practices for parents to apply to their children, child growth and development checks. The purpose of making this application is an effort to improve or prevent one of the factors that cause stunting incidents, namely inappropriate parenting practices carried out by parents for their children. With this application, it can help parents provide stimulation in providing good parenting to their children related to monitoring child growth and development. One of them is education, knowledge and attitude of parents in providing parenting to children because parenting is very decisive for children's growth and development. (Rahayu et al., 2018).

In the era of information technology that is growing rapidly, information about parental parenting stimulation should not be difficult to obtain, even parents who are busy working also prefer to update information through electronic media, especially smartphones, compared to reading guidebooks because of their practical nature and easy to carry and use at any time. This opportunity makes the use of smartphones very helpful in health services, health promotion, and improving health degrees compared to the use of manuals such as manuals. This encourages the guidance on the implementation of parenting styles with the use of smartphones that can make it easier for parents to implement it to their children (Izah et al., 2019)

This application was developed based on android, which is part of a *subset* of a *mobile phone* consisting of the operating system, *middleware* and key applications released by Google (Carudin & Apriningrum, 2018). Android-based applications are systems using the latest era methods with technological sophistication that are currently considered easy to use by the public. The developers can create apps by using the android platform for various mobile device (Ismayani, 2018).

"Pola Asuh Sehat" application is an application that aims to increase parents' knowledge related to efforts to prevent stunting early in children. This application is used as a learning medium in the community, especially for families with children aged 0 - 60 months. The development of this application uses the ADDIE (*Analysis, Design, Development, Implementation, Evaluate*) (Hadi & Rahayu, 2022). The average result from the assessment from media experts is 88.75% with the category of very feasible; subject matter experts with an average score of 95% in the very worthy category; The trial was in a small group with an average score of 81% with a very feasible category.

Previous research also stated that currently the development of *mobile-based* applications for the public is considered very important for improving information services, this allows to get access to health information flexibly and is considered more economical (Derbyshire & Dancey, 2013). In addition, through this application as an information medium among the community so that it can realize healthy living behaviors for the community. This is also in line with other studies that state that the use of *M-Health* with android-based smartphone media with the name "Mama ASIX" for third trimester pregnant women has been proven to improve maternal preparation in giving exclusive breastfeeding, in addition to the existence of *smartphone* applications Android-based is flexible that can be used anywhere and anytime because the device size is small, practical to carry, and has an attractive display to make it easier for users to understand, and can be accessed many times by users (Dewi et al., 2019). For maintenance of this application, the application developer will collaborate with IT personnel to ensure the sustainability of the application and is planned to develop features for the practical application of parental parenting to children, especially for stunting children. With the success of the "Pola Asuh Sehat" application in validation tests and small group implementation, as well as the publication of this application on the Google Play Store, it is hoped that this media can be an educational alternative in family-based stunting prevention through a digital approach.



## Conclusion

This "Pola Asuh Sehat" application received very decent assessments from media experts, material experts, and the implementation of trials in small groups. This application is considered suitable for use because this application is informative, the language is easy to understand and *user-friendly* so this application can be recommended as an educational medium for parents in providing good parenting practices for their children.

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