

# Application\_For\_Baby\_Messages\_Ayatullah-Ummu-Healthy-Suriah.pdf

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# Do parents need application-based learning media to learn baby massage? A qualitative study

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**Abstract:**

**BACKGROUND:** Growth and development delays can occur in childhood under five years. Early stimulation is very important to help babies grow according to their age which can be done with baby massage. Increasing the skills of parents in learning baby massage is a main focus because parents are the closest people to babies. This initial research was conducted to determine the learning media needed by parents in learning baby massage.

**MATERIALS AND METHODS:** A qualitative research with a phenomenological approach was used to explore the views of parents, providers/health workers, Information Technology (IT) experts, and media design experts. Focus group discussion (FGD) was used to obtain information from a number of samples taken by purposive sampling. Data were analyzed using thematic analysis.

**RESULTS:** A total of 11 people consisting of four parents with babies aged 0–12 months, two IT experts, one media design expert, and four midwives involved in FGD. There was an agreement that an android application-based baby massage media was needed to include a baby massage video feature that was made every step of baby massage, starting with baby massage of the feet, hands, stomach, chest, face, and back. The baby massage application will be equipped with a baby massage feature that conveys the benefits of baby massage, massage instructions, diaries, and contact midwives.

**CONCLUSION:** Parents who have babies, midwives who are competent in the implementation of baby massage, IT experts, and media design experts agree to develop learning media for the baby massage based on android applications by developing six features and systems.

**Keywords:**

Baby massage, development, growth, media, parents

## Introduction

Delays in growth and development can occur in childhood. Early stimulation and affection are very important to help babies increase their potential by gaining experiences that are age-appropriate for their growth.<sup>[1]</sup> The increase in the baby's weight and length is one of the benchmarks for a baby to experience good growth.<sup>[2]</sup> One of the targets of the Sustainable Development Goals is to end all forms of malnutrition by 2025, including reducing stunting and

wasting in children under the age of 5 years. Malnutrition will have an impact on the long-term risk of disease in children.

One method that can be done is to do a baby massage. Infant massage is an ancient therapeutic technique used all over the world,<sup>[3]</sup> which has a positive effect on both infants and parents and is a cheap, easy, and effective intervention.<sup>[4]</sup> Various studies have assessed that infant massage can increase body weight in premature babies,<sup>[5,5-14]</sup> improve the digestive tract,<sup>[15,16]</sup> better infant sleep quality in infants receiving

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massage,<sup>[17-20]</sup> decrease bilirubin levels in infants with high bilirubin levels,<sup>[13,21-25]</sup> and increase the bond between parent and baby.<sup>[26-30]</sup>

The low knowledge and skills of parents in doing baby massage is one of the factors that make a mother not do baby massage. Babies who are small and look fragile make mothers often afraid to do massage themselves. This fear is because many mothers think their babies should be massaged like how to massage an adult's body, so many parents take their babies to a baby spa which of course costs a lot of money, besides that babies certainly feel less comfortable when they get a touch from people they don't know compared to by his mother and father who are certainly better known.<sup>[31]</sup>

Several studies have shown the ability of a mother to do baby massage well when mothers participate in a baby massage training program; this study shows the results. Mothers enjoy learning baby massage and feel closer to their babies after participating in a baby massage training program so it is very important to provide massage training babies to parents to improve the knowledge, attitudes, and skills of parents.<sup>[11,28]</sup> One that supports the success of parents' skills in doing baby massage is by providing appropriate baby massage learning media to parents, both mothers and fathers, where currently the media often used by medical personnel are baby doll media, leaflets, modules, and baby massage videos.<sup>[32]</sup> However, the media needs development and novelty so that parents can more easily, efficiently, and effectively learn baby massage. The use of media commonly used in education and health education. Various types of media can be used in providing health education, namely print, electronic, and board media. Each media has different effectiveness in increasing one's knowledge. This research is an initial study to find out the learning media needed by parents in learning baby massage.

## Materials and Methods

### Study design and setting

This research is a qualitative descriptive study that regulates the process of data collection and data analysis as well as sampling technique. This study collects data about the media that parents need to learn baby massage. This study uses a phenomenological approach. This approach was chosen because it allows researchers to apply their subjectivity and interpersonal skills in the exploratory research process.

This research was conducted in the public health center area in Makassar, Indonesia, precisely in Rappocini and Biringkanaya districts. The public health center has the task of monitoring growth and development. The public health center also has a role in stimulating growth and

development. Community empowerment is the main program in the public health center. This research was conducted in November 2021.

### Study participants and sampling

We used a purposive sampling technique to involve a variety of perspectives on the media needed to teach baby massage. This study tries to explore the perspectives of providers or healthcare professionals with parents. Potential participants are parents of infants aged 0–12 months and midwives. In addition, researchers also absorb information from technology and information experts as well as media design experts. The midwives interviewed came from different institutions, as well as the area where the baby's parents lived. Researchers invite informants to participate. If so, the informant must give informed consent. The number of target informants was 11 people consisting of four parents with babies aged 0–12 months, two information technology experts, one media design expert, and four midwives.

### Data collection tool and technique

The implementation of focus group discussions involves other people outside the researcher to ensure the objectivity of the data. The implementation of the focus group discussion (FGD) was carried out with an open mind and without pressure; there were at least six steps taken, namely 1) determine that the moderator chosen is a midwife who thinks analytically and can convey a good explanation; 2) in general, the FGD committee team consisted of several people including one note-taker and one person who served as documenting the FGD implementation; 3) FGD implementation, where the FGD implementation process begins according to the division of space, topic, and time; 4) recording and summarizing the substance of the FGD were conducted by the moderator and note-taker; and 5) view and analyze data. Each note and summary of data from the FGD implementation is information and data about how the participants clashed with each other's thoughts and assumptions about the media that parents need in learning baby massage. Throughout data collection, study participants were examined to elaborate or clarify what they said during group discussions to confirm the accuracy of the information captured and the participants' intended meaning. During data collection and archiving, we ensure data confidentiality. Individual personal identifiers were not collected, and the authors did not have access to information that could identify individual participants during or after data collection.

Data were analyzed using thematic analysis. All discussion results were recorded with the consent of the study participants, and notes were transcribed verbatim by the principal investigator and research assistant. The researcher and research assistant listened

to the audio recording and read the transcript several times to understand the whole data and organize the transcript which then generated the initial code in the data. When the initial coding was completed, the researcher confirmed the coding structure and reviewed the code for potential themes. After that set the theme. During this process, the researcher identified exemplary quotes to illustrate the main themes. All members of the research team had the opportunity to review the theme and provide input on data interpretation at the virtual meeting. Finally, the researcher relates the theme and code to the research objectives through the process of preparing the manuscript. The process of coding and developing themes is inductive. The results of this conclusion will be used as the basis for making decisions or policies regarding the media needed by parents in learning baby massage.

### Ethics consideration

Ethical clearance was obtained from the Faculty of Public Health Universitas Hasanuddin, Indonesia (reference number 9883/UN4.14.1/TP. 01.02/2021; dated November 5, 2021). The aims, methodology, objectives of the study, and the benefits and risks of the study were explained to all study participants. Before data collection, participants were also informed about their right to voluntarily participate in research. Verbal consent is sought and documented before having a discussion. The interviewer continued the interview only after receiving and documenting consent. The survey protocol submitted to the ethics review committee included a research questionnaire with a statement explaining the procedure for obtaining approval. To ensure the privacy of research participants, respondents were interviewed in a conducive atmosphere environment; data confidentiality was ensured by maintaining the anonymity of the study participants. Individual personal identifiers are not collected; to ensure data anonymity, the researcher will keep the information obtained from research participants private or will withhold information from others, to respect confidentiality and study participant privacy. Identity information

(name and address) is not included in the data collection instrument.

### Results

Characteristics of respondents was presented in Table 1. The results showed that the respondents who were invited to this study consisted of 11 participants of which four parents had babies, four midwives who were competent in infant massage, two information technology experts, one media design expert, and four midwives.

The role of learning media for baby massage is currently very important to parents to increase the knowledge, skills, and compliance of parents doing baby massage. The results of the FGD showed that currently parents, both fathers and mothers, need to apply media in learning baby massage independently after attending baby massage training by competent midwives.

*I hope that the media used is easy to carry everywhere without having to be in the form of a book. (Ls, 25 Years)).*

*Learning media, if possible, should no longer be in form of books because I think parents currently need media in the form of videos that can be taken anywhere. (Sy, 32 yrs).*

*I agree with the father who offers media in the form of an application, the important thing is that the application can be seen on the cellphone. (Kr, 35 Years).*

*Baby massage videos can be viewed on mobile phones that can be viewed at any time, making it easier for us to learn baby massage (Im, 31 Yrs).*

The opinion of the midwife also strongly agreed that the creation and development of applications to assist parents in doing baby massage independently, the application not only developed techniques or how to do baby massage, but the need for features to provide information to parents about the benefits and practical instructions for implementing massage. In addition,

**Table 1: Characteristics of respondents**

Initial name	Age	Sex	Education	Work	Analysis unit
Ls	25	Woman	Senior high school	Housewife	Baby parents
Sy	32	Man	Bachelor	Private employees	Baby parents
Kr	35	Man	Bachelor	Private employees	Baby parents
Im	31	Woman	Bachelor	Housewife	Baby parents
Hd	32	Woman	Bachelor	Midwife	Midwife
Sb	47	Woman	Bachelor	Midwife	Midwife
Ik	30	Woman	Bachelor	Midwife	Midwife
Id	33	Woman	Bachelor	Midwife	Midwife
Pt	27	Man	Bachelor	Private employees	IT Expert
Uk	33	Man	Bachelor	Private employees	IT Expert
Wh	32	Man	Bachelor	Private employees	Design expert

some midwives also expect a feature that can report parental compliance in doing baby massage.

*I agree with some opinions who want learning media in the form of videos and the public can access them easily via cellphones because if you are still using a CD it is difficult to carry it everywhere. (Hd, 32 Years old).*

*The baby massage movement is very complex, in my opinion, the baby massage video that was made can be viewed on a cellphone like the one you suggested earlier, because almost today, the average person already has a cellphone. (Sb, 47 Yr).*

The opinion of the IT expert team about the media that parents need in learning baby massage has been heard directly from the opinions of parents and midwives, along with quotes from the expert team or IT team.

*We have heard the suggestions of the fathers and mothers and we suggest that the baby massage media that can be made is an android-based baby massage application. (Pt, 27 Yrs).*

*The baby massage application that can be accessed via cellphone is indeed an application that can be downloaded via the play store... (Uki, 33 Years old).*

*We are trying to design what you want, we will show you some designs then you can provide input from these designs... (Wh, 32 Years).*

**4** Content or content expected by parents, in baby massage learning media.

Based on the results of the FGD, parents expect the content or features in the baby massage application to be easy to use and learn to improve skills in learning baby massage.

*If it's in the form of an application, I think there should be a video of every baby massage movement because that's what we need and it's easy to access (Ls, 25 yrs).*

*As a parent, I agree that there is a video of every baby massage movement like what the midwife said earlier that in the baby massage movement 6 movements are starting from the feet to the back... yes, if I'm not mistaken. well. it needs to be made a video (S, 32 yrs).*

*If possible, the application features are easy to use or don't make you dizzy. If necessary, we will be trained first in using it...if possible, everything about baby massage can already be accessed in the application... (Kr, 35 yrs)*

*... yes, that's right, so later the application is based on android so wherever we are the application is easily accessible (Im, 31 yrs).*

Meanwhile, according to the midwife, the features or contents that must be included in the baby massage application that parents can learn are the benefits of baby massage, the instructions for implementing baby massage, and the video feature of baby massage that is practiced every step of the way. Baby massage and a baby growth recording feature to record weight and body length every month can be done by midwives in addition to a diary feature to determine parental compliance with baby massage; some midwives also suggest an application that has a midwife consultation feature that can be accessed by people when they want to do a consultation about baby massage; the following is a quote from the results of the FGD opinion from the midwife.

*I hope that the media is in the form of an application where the application will not only show videos on how to massage a baby but there is information about the benefits and practical instructions for doing baby massage to increase parents' knowledge about baby massage.....(Hd, 32 Years old)*

*If I may suggest.... we hope that not only the media can improve the skills of parents but the media that will be developed needs to increase parental compliance in doing baby massage..... (Sb, 47 yrs).*

*Please, if you like the application, add a midwife record so that we can find out the baby's growth through the application such as the baby's weight and length.... (Ik, 30 years old)*

*Then it can not be added to contact the midwife for a consultation so parents can consult about baby massage through the application....(Id, 33 yrs)*

The IT expert team's opinion about the media needed by parents in learning baby massage can in principle be accommodated by the IT team such as the baby massage video feature which is distinguished from each step of baby massage, the benefits of baby massage, the massage instructions feature, the baby massage time reminder feature, a daily record feature about the baby's growth, and a midwife consultation feature with quotes from the IT team's opinion:

*Ladies and gentlemen, later, we will try to coordinate all input from the midwife and parents, including application features such as baby massage videos from every step of baby massage from feet to back which were shown by the midwife... (Uk, 31 yrs.)*

*From the opinion of the midwife and parents, we can conclude that in addition to the video baby massage feature, features about the benefits of baby massage can*

also be developed, the instructions for implementing baby massage, a diary feature that can be filled in by parents after doing baby massage and adding recordings of baby growth. in terms of body weight and body length filled by the Midwife (Wh, 32 yrs)

I also add that we will try to develop all of your input, including in terms of coloring the application so that it is more interesting as well as a reminder feature that parents hope will be reminded through the application when it is time to do baby massage....(Pt, 27 yrs)

In principle, the IT team has understood the parents' desire to develop baby massage learning media for parents through an android-based application so that in the future the IT team will work on the program, and of course, the application that will be made must go through a feasibility test before being used for parents who will be the intervention on research.

### Discussion

Through FGDs, it can be seen that parents need baby massage learning media in the form of videos made in the form of applications; in principle, this is very reasonable considering that currently, the development of learning media is more directed at applications, especially android applications, ranging from gadgets, tablet PCs, smartphones, and other applications that have other android operating systems. Of course, it can support students to have and use android in everyday life. The use of smartphones is currently popular in the world. Smartphones can have a huge impact on human life and provide a lot of convenience in using them. So that the use of smartphones is not only used for social media but also can be used to help to learn activities and human work.

The implementation of baby massage has so far been carried out by midwives or medical personnel, but seeing the benefits of baby massage which is very good for baby growth, it is necessary to promote baby massage, especially to parents, so that the future baby massage is no longer limited to only medical personnel such as midwives, nurses, or other medical personnel need to be taught to parents not only limited to mothers but also the father's role in learning baby massage.<sup>[33-35]</sup>

Currently, many applications are offered, on one hand, making it easier to find the information needed, especially during the Covid-19 pandemic.<sup>[36,37]</sup> Based on several studies on baby massage, medical personnel, both midwives and nurses, when teaching baby massage are still using module media, dolls, and pamphlets besides giving videos to mothers to learn baby massage,<sup>[12,27-29,38]</sup> and the advantages of video media have a function as

a learning medium, namely the function of attention, affective function, and cognitive and compensatory functions. The function of attention is that video media can attract attention and direct the audience's concentration on video material. The effective function is that video media can arouse the emotions and attitudes of the audience. Cognitive function can accelerate the achievement of learning objectives to understand and remember messages or information contained in images or symbols in the learning video.<sup>[39,40]</sup>

The baby massage videos used today still use compact disks (CDs), so to use them you need a CD player that is less effective to carry everywhere, and even if the baby massage videos can be watched via a smartphone, the baby massage video playback system used must be watched at once, so that parents cannot learn gradually from each step of the implementation of baby massage; this was revealed by parents during the FGD process. For the learning process to work well when students are invited to utilize all of their senses, the more senses that are used to receive and process information, the more likely it is that the information can be understood and retained in memory.<sup>[37]</sup>

Based on the FGD results, the research will develop baby massage training in collaboration with midwives, using an android-based baby massage application media, so that parents can access it via a smartphone, where the application contains six features and systems, namely 1) the video features the implementation of baby massage from every step starting from the feet, hands, stomach, chest, face, and back; this refers to the baby massage guidelines,<sup>[31,41]</sup> of course, the baby massage video feature made every step, and it is hoped that parents can improve their skills in doing baby massage which previously had attended baby massage training by a competent midwife in doing baby massage; 2) features of the benefits of baby massage will also be provided to make it easier for parents to understand the benefits of baby massage so that by knowing the benefits of baby massage parents will have the motivation to do baby massage; 3) the message instructions feature contains practical instructions for a baby massage between when baby massage can be started, the best time to massage the baby, and preparation before massaging; 4) a reminder system for the implementation of baby massage, namely parents will be reminded to do baby massage twice a day, namely in the morning and evening, and through this application, parents can be reminded to do baby massage so that it is hoped that later they will be able to obey baby massage because, with the obedience of parents doing baby massage, of course, it is hoped that the impact can have a positive effect on the growth and development of the baby; 5) the diary feature where parents can take notes after doing baby massage from this recording

can later be monitored and evaluated by the midwife, in addition to the midwife recording feature can also record the growth of the baby, namely the weight and length of the baby after the baby is weighed every month by the midwife; and 6) the midwife contact feature is a parental consultation service with a competent midwife in performing baby massage so that later parents can consult through the application about the obstacles experienced during the baby massage.

Several studies have proven the effectiveness of using application media as an educational medium for better health behavior change.<sup>[42,43]</sup> In the future, this baby massage application will be made following the results of the FGD which later is expected to pass the trial and can be used by parents to improve knowledge, skills, and parental compliance in doing baby massage.

### Limitation and recommendation

This study uses a small sample and has not explored the perceptions of policy makers. The recommendation for further research is to use a wider sample and conduct research on the effectiveness of the application that has been designed.

### Conclusion

Parents who have babies, midwives who are competent in the implementation of baby massage, and IT experts agree to develop an android application-based baby massage learning media by developing six features and systems, namely the baby massage video feature that is made every step of the massage. The content cover baby's feet, hands, stomach, chest, face, and back, baby massage benefits feature, massage instruction feature, baby massage time reminder system, diary feature, and midwife contact feature which can be downloaded via Playstore in addition to baby massage application will be tested later try eligibility before use by parents both father and mother.

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### Conflicts of interest

There are no conflicts of interest.

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