

# “Menyusui asi-q” android application for relax and smooth breastfeeding

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## ABSTRACT

Breastfeeding is an instinct of a mother, however, it must be supported by internal factors and good external. The success of the breastfeeding process can be supported by knowledge, good social support, calmness, and comfort of the mother when breastfeeding. One form of support as an educational and relaxation medium developed for breastfeeding mothers is the android-based "Menyusui ASI-Q" application. The purpose of this study was to determine the influence of the application on the knowledge, anxiety of the mother, and the smoothness of the breastfeeding process. The respondents to this study were 35 breastfeeding mothers from independent midwives in Palembang. The quasi-experiment research method uses one-group pre-test and post-test design approaches. Statistical tests using the Mc Nemmar test, the results found that there were significant differences in knowledge, anxiety, and smoothness of the breastfeeding process before and after using the application ( $p = 0.000$ ). Educational media for breastfeeding mothers can increase maternal knowledge and the breastfeeding process becomes calmer and smoother.

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## INTRODUCTION

A period in the first 1000 days of life starts from the moment of fertilization until the age of 2 years. This period is a golden period that will greatly determine the future of a child. It is also called a critical period because there is a very rapid brain development that is vulnerable to environmental influences that will affect the brain structure and cognitive abilities of a child. In the first 1000 days of life, the need for nutrition, affection, and stimulation is very important to be properly met. If the nutrition is not fulfilled properly, it will greatly affect its growth and development (Gunardi, 2021).

Nutrition to support a child's growth and development starts from the womb and must be kept consistent, especially from the first 1000 days of life. Failure to grow or stunting can occur if there is an obstacle in the growth of the fetus since it is in the womb. Adequacy of nutrients during pregnancy and continued in the period of lactation. A mother is very important to know how to properly breastfeed because breast milk is the only nutrition that is best for the baby from the first days of life continued until the baby is 2 years old (FK UI, 2020)

A study that examined the level of knowledge attitudes, and behaviors of mothers towards breastfeeding, found that 64.6% of mothers had heard of or knew about exclusive breastfeeding and 71% of breastfeeding mothers knew that exclusive breastfeeding should be given in the first 6 months

of the baby's life. As many as 93.2% of mothers have breastfed their babies but only 33.3% have exclusively breastfed their babies. They know that breastfeeding has a positive impact on their babies as well as on themselves, but not all of them provide exclusive breastfeeding to their babies. It requires innovation in the form of good education for mothers from pregnancy until the mother enters the breastfeeding process so that the breastfeeding process can run effectively (Cascone et al., 2019).

The cause of low exclusive breastfeeding is the lack of knowledge of mothers, families, and communities about the importance of breast milk. Knowledge is one of the most important factors that cause low inclusive breastfeeding, and other influential factors are social support/work friends, and family support (Mandasari & Budiarto, 2021).

The low level of exclusive breastfeeding is influenced by the low knowledge of mothers about breastfeeding and the breastfeeding process and support from the family is very influential on the success of breastfeeding, it is very necessary to have good health education for breastfeeding mothers either through direct education or using educational media (Folendra Rosa, 2022).

Health education through educational media is needed and is the right step to overcome health problems that occur in society. The increase in public knowledge can be supported by providing effective and comprehensive education and motivation so that people's knowledge can increase and they can consciously change behavior in a more direct to improve health behaviors (Mulyani et al., 2020). Increasing public knowledge is the task of health workers, including in terms of breastfeeding. The provision of counseling does not have to be carried out directly but can also be done through an android-based online application (Putriana & Risneni, 2021).

This research is a study that aims to find out the influence of educational media developed in the form of an android-based application called the "Menyusui ASI-Q" application. The naming of this application aims to let mothers know that breastfeeding is not something that makes it a burden or increases anxiety, but the breastfeeding process is a fun or fun thing. In this application, there are several menus about breast milk knowledge equipped with Hypnobreastfeeding audio that can make mothers relax while breastfeeding so that the breastfeeding process becomes smoother.

## RESEARCH METHOD

The method used in this study was a quasi-experiment with a one-group and post-test. Sampling was carried out by Non-random sampling with the Purposive Sampling technique. The sample in this study was mothers who had babies aged 0-12 months at the Independent Practice of Midwives in Palembang, which numbered 35 people.

Breastfeeding mothers have explained the use of the breastfeeding application ASI-Q and filled in informed consent as consent to participate in the study. Moms are given a link to install the application on an android phone. Before using the application, breastfeeding mothers fill out the biodata and questionnaires contained in the application. This questionnaire is a pre-test to find out the mother's knowledge, breastfeeding smoothness, and maternal anxiety in breastfeeding. Measure the smoothness of breast milk production by using a questionnaire to assess the smoothness of breast milk production with several indicators, namely breastfeeding time, breast condition, sensation in the mother, baby response, defecation, and tub in the baby. The intervention carried out is in the form of using the android application "Menyusui ASI-Q" which also contains a Hypnobreastfeeding Menu, which is the provision of positive affirmation words and sentences accompanied by relaxation music accompaniment that can increase the mother's calmness, comfort, and confidence when breastfeeding her baby. In addition, there are other application menus such as Definition of Breastfeeding, Breastfeeding Position, Benefits of Breast milk, and Exclusive Breastfeeding that can provide information for mothers to help smooth the process of breast milk production. Breastfeeding mothers are also grouped in a WhatsApp group as a medium of communication and discussion. After 1 month of use of the application, nursing mothers refill the post-test questionnaire on the application.

The data were analyzed univariate and bivariate. The statistical test used is the McNemmar Test because it is a categorical comparative analysis of paired groups where the category is  $2 \times 2$ . The statistical test used is the Mc Nemmar Test with a meaningfulness level of  $\alpha \leq 0.05$  and CI of 95%.

## RESULTS AND DISCUSSIONS

Reponden characteristic data consist of maternal age, parity, education, occupation, breastfeeding history, and breastfeeding plan. The characteristic data of respondents can be seen in table 1:

**Table 1.** The Characteristics of respondent

Characteristic	Category	Frequency (n)	Percentage (%)
Mother's age (year)	< 20	2	5,7
	20-30	17	48,6
	> 30	16	45,7
Parity	1	12	34,3
	2	14	40,0
	3	4	11,4
	4	5	14,3
Education	Elementary School	2	5,7
	Junior High School	6	17,1
	School	22	62,9
	Senior High School	5	14,3
	Diploma/Bachelor		
Work	Not working	31	88,6
	Work	4	11,4
Breastfeeding history	Not breastfeeding	16	45,7
	Breastfeeding	19	54,3
Breastfeeding planning	Breastfeeding	35	100
Total (N)		35	100

From Table 1, it can be seen that of the 35 respondents, most of them are in the age range of 20-30 years (48.6%), the most parity at parity 2 (40.0%), the most education at the high school level is 22 people (62.9%), most of the mothers are not working at 31 people (88.6%), 16 people (45.7%), have no experience in breastfeeding and all respondents plan to give exclusive breastfeeding and breastfeed their babies up to 2 years (100%).

The level of maternal knowledge ranked into the categories of Good and Good enough. The entire knowledge value score is from the mean value or the average level of understanding of all respondents.

**Table 2.** The Distribution of Maternal Knowledge Level Frequency Before and After Using "Menyusui ASI-Q" Android Application

Knowledge	Before		After	
	n	%	n	%
Good	25	71,4	33	94,3
Good enough	10	28,6	2	9,1
Total (N)	35	100	35	100

From Table 2 above, it can be seen that before using the "Breastfeeding Menyusui-ASIQ" Application 35 respondents, there were 25 respondents with good knowledge (71.4%), and 10 people with less knowledge (28.6%). After the "Menyusui ASI-Q" Application from 35 respondents, 33 people with good knowledge (94.3%) and only 2 people were on less knowledge (9.1%). This means that after the "Menyusui ASI-Q" Application through the android application, most of the respondents experienced an increase in knowledge from less knowledge to good knowledge.

**Table 3.** The Distribution of Maternal Anxiety Level Frequency Before and After Using "Menyusui ASI-Q" Android Application

Anxiety Level	Before		After	
	n	%	n	%
No Anxiety	4	11,4	33	94,3
Mild-moderate Anxiety	31	88,6	2	9,1
Total (N)	35	100	35	100

The variable categories of severity levels in this study were not anxious and moderately anxious. Measurement of anxiety using the ZAS (*Zung Anxiety Score*) scale was carried out before and after using Menyusui ASI-Q Application. From table 3 above, it can be seen that before using the "Menyusui ASI-Q" Application from 35 respondents, there were 4 respondents with no anxiety (11.4%), and 31 people with mild-moderate anxiety (88.6%). After using the "Menyusui ASI-Q" App from 35 respondents, 33 people had no anxiety (94.3%) and only 2 people were at mild-moderate anxiety (9.1%). This means that after using the Hypnobreastfeeding App through the android app, most respondents (94.3%) experienced a decreased level of anxiety from mild-moderate anxiety to no anxiety. While of the 31 people who experienced mild-moderate anxiety 2 people continued to experience mild-moderate anxiety.

**Table 4.** The Distribution of Maternal Smooth Breastfeeding Process Level Frequency Before and After Using "Menyusui ASI-Q" Android Application

Smooth Breastfeeding Process	Before		After	
	n	%	n	%
Smooth	7	20	31	88,6
No smooth	28	80	4	11,4
Total (N)	35	100	35	100

From table 4 above, it can be seen that before using the "Menyusui ASI-Q" Application from 35 respondents, there were 7 respondents with current milk expenditure (20%), and 28 people with non-current breast milk expenditure (80%). After using the "Menyusui ASI-Q" Application from 35 respondents, 31 people experienced current milk expenditure (88.6%) and only 4 people experienced non-current breast milk expenditure (11.4%). This means that after using the "Menyusui ASI-Q" Application through the android application, most respondents (88.6%) experienced current milk expenditure While of the 28 people who experienced non-current breast milk expenditure, only 4 people continued to experience non-current breast milk expenditure.

Bivariate analysis determines the relationship between independent and dependent variables. The statistical test used for the McNemar Test with an  $\alpha$  effectiveness rate of  $< 0.05$  and a 95% confidence of interval. The bivariate analysis table is presented in the table below:

**Table 5.** Effect of "Menyusui ASI-Q" Android Application on Breastfeeding Mother Knowledge Level

Level of Knowledge before using	Level of Knowledge after using "Menyusui ASI-Q" Android Application		N	P
	Good	Good enough		
Happy breastfeeding Video	Good	0	25	0,000
	Good enough	2	10	
<b>Total</b>		2	35	

Based on the results of the bivariate analysis in table 5, it can be seen that before and after using the "Menyusui ASI-Q" application there were 25 respondents with a good level of knowledge and 8 people with less knowledge. While out of 10 people with less knowledge, after using the "Menyusui ASI-Q" application, there were 8 people who increased to good knowledge and 2 people remained at less knowledge level.

**Table 6.** Effect of "Menyusui ASI-Q" Android Application on Breastfeeding Mother's Anxiety Level

Level of Anxiety before using Menyusui ASI-Q Android Application	Level of Anxiety after using "Menyusui ASI-Q" Application		N	p
	No Anxiety	Mild-moderate Anxiety		
	No Anxiety	0	4	0,000
	Mild-Moderate Anxiety	2	31	
<b>Total</b>		2	35	

From table 6, it can be seen that before and after the application "Breastfeeding-Q" there were 4 respondents who were level of not anxious, and none of them experienced moderate mild anxiety. While of the 31 people who experienced moderate mild anxiety, after the "Menyusui ASI-Q" application, there were 29 people decreased to not anxious and 2 people remained at the level of mild-moderate anxiety.

**Table 7.** Effect of "Menyusui ASI-Q" Android Application on Smooth Breastfeeding Process Level

Level of Smooth Breastfeeding before using "Menyusui ASI-	Level of Knowledge after using "Menyusui ASI-Q" Android Application		N	p
	Smooth	Non-smooth		
	Smooth	0	7	0,000
	Non-smooth	0	0	

Q" Android Application	Non-smooth	24	4	28
Total		31	4	35

From table 7, it can be seen that before and after using the "Menyusui ASI-Q" application 7 respondents experienced smooth milk expenditure. Meanwhile, of the 28 people who experienced non-smooth milk expenditure, after using the "Menyusui ASI-Q" application, there were 24 people whose milk expenditure became smooth and 4 people still experienced non-smooth milk expenditure.

The "Breastfeeding ASI-Q" application is an android-based application that has gone through the development process. This application is used as an educational and relaxation medium for breastfeeding mothers to support the smoothness and success of the breastfeeding process. The results of this study show that there are significant differences in knowledge, anxiety levels, and the smoothness of the breastfeeding process.

The increase in knowledge and attitudes of breastfeeding mothers is obtained from the influence of the media used in the form of an android-based application "Smart Busui". There is a positive influence on the use of the application as an effective extension medium. This media can be used as a learning media about breast milk and its ins and outs not only limited to understanding but can directly apply to exclusive breastfeeding. Indirectly, this application motivates mothers to provide exclusive breastfeeding to their babies. Respondents' knowledge was not influenced by educational variables, age, and source of information (Elvina & Suryantara, 2022).

Another study found that health education through the android-based application "Mama ASIX" in third-trimester pregnant women can help mothers prepare for exclusive breastfeeding by increasing knowledge and attitudes about breastfeeding and its processes. With the use of this application, there is an increase in the average value of a mother's knowledge and attitudes about breastfeeding. This application can be used as an effective medium of health education medium for third-trimester pregnant women about preparing for the breastfeeding process (Dewi et al., 2019).

Another application developed for breastfeeding mothers is the Sik Asiek (Exclusive Breastfeeding Health Information System) application. The use of the Sik Asiek application as a result of the development of health promotion media that utilizes android technology has proven to influence respondents' knowledge. Starting from getting to know the application and then being interested in using the application so that it provides a stimulus at the other stage which will form a new behavior. The material in the application is very interesting and easy to understand and is supported by a help forum as a means of counseling health workers and exchanging information with the community of breastfeeding mothers who use this application (Juhanida Lestari et al., 2020).

Another app for nursing mothers developed is the Moomy Nifas app. The use of this application is proven to be able to improve the knowledge and skills of puerperal and lactating mothers. Smartphone media has the advantage that it is not easily damaged, easy to carry, can be used in all places, without time limits and applications in the form of interesting animations and smartphones are most in demand by users. This application can not only increase the knowledge of puerperal mothers but also improve mothers' skills in carrying out puerperal care (Putri et al., 2021).

The development of promotion and invention online can be one of the alternative media without time and limits. The development of the KESTURI application shows that there is an educational influence on increasing knowledge about the early detection of cancer which is carried out online. This application can increase respondents' knowledge by 89.5%. The use of online applications can effectively increase respondents' knowledge (Widiasih et al., 2022).

Health education about pregnancy and breastfeeding is a very important thing to do. The mother's knowledge, attitudes, and skills about breast milk and the preparation for breastfeeding become very important. Health knowledge during pregnancy and breastfeeding can affect maternal

health and child growth and development. The use of internet access using a stunning android-based smartphone can be used as an effort to improve public health online. Android application media can be used as a learning medium to increase knowledge in pregnant and lactating women. The use of this media has many features that can be designed according to the needs of educational materials and by the target (Hadiati et al., 2022).

Nowadays, digital applications play a very important role in efforts to accelerate health services and promotion for the community. The use of digital applications is very efficient and profitable because it can increase service innovation and also accelerate services from the government to people who need technology. Technology has reached all walks of life and can access health services. Digital applications can improve public services in various places because online services can be done without any time limit (Widjadja, 2022).

The "Menyusui ASI-Q" application, in addition to containing features or menus of information and education about breast milk, is also equipped with a Hypnobreastfeeding audio feature that contains positive affirmation sentences for breastfeeding mothers so that it can provide calm, comfort, and confidence in mothers when breastfeeding. The feeling of calm and comfort when breastfeeding will greatly affect the smooth process of breastfeeding.

Hypnobreastfeeding through video media can increase the self-confidence of breastfeeding mothers (Nirmala Sari et al., 2022). Relaxation techniques in Hypnobreastfeeding can reduce anxiety and stress in breastfeeding mothers so that they can increase breast milk production. Providing education about breast milk can be done from pregnant to breastfeeding so that they can prepare themselves for breastfeeding both physically and psychically (Laily et al., 2021). Hypnobreastfeeding technique influences increasing maternal motivation in providing exclusive breastfeeding. Motivation is one of the important factors that can influence mothers in breastfeeding. With strong motivation, the breastfeeding process will be smoother. Hypnobreastfeeding can increase breast milk production and make exclusive breastfeeding a success. Relaxation techniques with positive affirmations help mothers control positive thoughts, high intentions, and motivations, and consistently breastfeed their babies coupled with the support of their husbands and heavens allows for success in exclusive breastfeeding (Handayani et al., 2021).

## CONCLUSION

The application "Menyusui ASI-Q" is one of the applications developed to help mothers obtain information and knowledge about breast milk and the breastfeeding process. It is hoped that the application can help mothers in the breastfeeding process and also affect the smooth production of breast milk. The results of this study can provide benefits for the community, especially breastfeeding mothers by increasing mothers' knowledge about breast milk and the ins and outs of breastfeeding. The use of this application can increase the knowledge of the mother, with good knowledge and the level of anxiety decreases and the mother can breastfeed more relaxed and the breastfeeding process becomes smooth. In the end, the future impact can support the success of Exclusive Breastfeeding. In subsequent studies, it can be further developed by adding features that are more useful and interesting for breastfeeding mothers.

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