

## Utilization of golden1000 application for exclusive breastfeeding success in stunting prevention efforts

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### ABSTRACT

**Background :** *Stunting is a developmental growth disorder experienced by children due to poor nutrition, recurrent infections, inadequate psychosocial stimulation, and the child's height for his age is below the average of SD STKA WHO. Indonesia has a prevalence of 36.4%. Stunting prevention involves priority interventions, namely specific nutrition interventions and sensitive interventions. Exclusive breastfeeding, including specialized interventions, plays a very important role in preventing stunting. Indonesia's Health Profile in 2019, Indonesia's exclusive breastfeeding coverage is 37.3%, while the national target is 80%, West Java 57.9% and Tasikmalaya City 56.0%, of course this will cause problems in the future related to stunting events, especially in cities. Tasikmalaya. The current problem is the low access to information obtained by mothers in increasing knowledge and literacy about breastfeeding. As an innovative product, it is used as an educational medium about breastfeeding preparation, breastfeeding attachment positions, problems and solutions in breastfeeding, breastfeeding tutorial videos and breastfeeding management as well as online consultations with breastfeeding counselors.*

**Objectives :** *The purpose of this study is the influence of the golden1000 application to increase maternal efficacy literacy related to breastfeeding so that it can be successfully breastfed exclusively.*

**Methods :** *This study uses a quasi-experimental design method, with a posttest only control group design approach. In this study, the treatment group was given an intervention in the form of the golden1000 menu application about breastfeeding including an educational menu about breastfeeding, video tutorials on attachment positions and an online consultation feature with a breastfeeding counselor for pregnant women in the third trimester up to 6 months of breastfeeding.*

**Results :** *The results of the study found that there was a statistically different difference in the success of exclusive breastfeeding between the golden1000 application group and the KIA book group.*

**Conclusions :** *The use of the golden1000 application can increase the success of breast milk givers exclusively.*

**KEYWORD:** *golden 1000 application; exclusive breastfeeding; stunting*

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## INTRODUCTION

Stunting is a disorder of growth and development experienced by children due to malnutrition, repeated infections and inadequate psychosocial stimulation, and the child's height for his age is below the median standard deviation of the WHO Child Growth and Development Standard (1, 2) WHO data released in 2019 states that Indonesia is among the 6 countries with the highest stunting prevalence rate in the South-East Asia region, which is 36.4%(1).

Based on the identification results, various risk factors for stunting in Indonesia can come from maternal factors including age during pregnancy, nutritional status, breastfeeding or complementary foods, early breastfeeding initiation, child factors including a history of low birth weight or premature, history of neonatal diseases, not getting immunization, or environmental factors including sanitation, knowledge and attitudes, socioeconomic status(3).

One way to prevent stunting is the fulfillment of nutrition and health services to pregnant women, infants and toddlers (4) Stunting prevention is carried out through national strategies, one of which is the priority target of pregnant women and children aged 0-2 years or households of 1,000 HPK with priority interventions, namely specific nutritional interventions related to improving nutrition such as nutrition during pregnancy, early breastfeeding initiation, exclusive breastfeeding and complementary foods according to WHO / Ministry of Health

standards, and health and sensitive interventions such as the provision of clean water and sanitation(5,6).

Exclusive breastfeeding as part of specific interventions plays a very important role in stunting prevention, because with exclusive breastfeeding babies are only given breast milk for 6 months without additional fluids such as formula milk, water, honey except drugs and vitamins (7).Exclusive breastfeeding has benefits, among others, as the best nutrition for babies, has a complete nutritional composition, improves mental and emotional intelligence, protection against infections and allergies (8, 9).

Breast milk is an ideal food for babies, especially in the first months of life. Breast milk contains all the necessary building nutrients and energy supplies. Breast milk does not burden the work of the digestive system and kidney functions that have not functioned properly in newborns, and produces optimal growth and development (10) In addition, breast milk has a variety of anti-infective substances, reduces the incidence of atopic eczema and by breastfeeding can distance pregnancy naturally. Another advantage with breastfeeding a baby is that it does not cost money, is available at the ideal temperature so it does not need to be heated first, is always fresh, free of germ contamination and reduces the possibility of developing digestive tract disorders (diarrhea, vomiting and abdominal pain)(11). The breastfeeding process strengthens the inner bond between the mother and her baby and

accelerates the return of the size of the uterus as before pregnancy. So that by exclusively breastfeeding the baby's health degree will be optimal, rarely experience illness so as to prevent stunting caused by repeated illnesses and insufficient nutrition for the baby's needs(12,13).

The results stated that infants who were not exclusively breastfed 3,154 times experienced stunting in the future(14) The results of this study are in line with other studies that there is a significant relationship between exclusive breastfeeding and the incidence of stunting as much as 91.7%. The results of statistical analysis showed that infants who were not given exclusive breastfeeding had a 3.23 times greater risk of stunting in the future. The effect of the history of exclusive breastfeeding and the incidence of stunting using statistical tests obtained a value of  $r = 0.4$  which means that the strength of the relationship between the history of exclusive breastfeeding and the incidence of stunting has moderate strength(8,15).

Based on data from the Indonesian Health Profile in 2023, the coverage of exclusive breastfeeding in Indonesia is at 73.97% (16) while the national target is 80%, West Java has 80.08% coverage of Tasikmalaya City 67.6% (14) of course, this will provide problems in the future related to the incidence of stunting in children in Indonesia, especially Tasikmalaya City because they do not get exclusive breastfeeding. The success of exclusive breastfeeding is influenced by many factors related

to family and community as well as health workers, mothers have the authority to breastfeed and their decisions have the most influence in starting and maintaining breast feeding(12). Maternal confidence will have an impact on self-confidence so that it becomes a major factor in breastfeeding success or self-efficacy (17,15). Maternal efficacy is influenced by various elements such as previous breastfeeding experience, observation of other breastfeeding mothers, encouragement and knowledge about breastfeeding obtained from others (family or health workers) (18,13) this is the target of health workers to increase breastfeeding success in mothers.

The current problem is the low access to information obtained by mothers in increasing knowledge and literacy about breastfeeding, understanding of mothers in exclusive breastfeeding needs to be improved in an effort to prevent stunting. Currently, the education obtained by mothers through face-to-face with health workers who have limited time, information and skills of health workers(19,17).

The most recent and successful intervention to support the success of exclusive breastfeeding is to use appropriate mobile health (mHealth) technology in developed and other Asian countries in the form of personalized mobile applications containing content about breastfeeding and infant feeding (20, 21) Half of internet users are women, so the use of android applications about breastfeeding can be a medium to

increase maternal efficacy in increasing breastfeeding success in mothers(21,22).

One of the Android-based applications in Indonesia that is already available online on Google Play and is free to access by the public is the golden1000 application as an innovative product obtained from the 2020 Kemeristekdikti grant research activities(23). The golden1000 application was created by researchers as a form of adaptation to changing times, especially in health services, with the use of mobile health service applications, also known as mHealth applications, is an extraordinary way to make the lives of patients and health workers easier, thereby improving patient care overall. With the Golden1000 application, you can help prevent stunting by providing online education to pregnant women and mothers with children under five years old with evidence-based educational topics.

In the golden 1000 application, it provides 1000 HPK content features including pregnancy, childbirth, breastfeeding and complementary foods. In the breastfeeding menu, there are features about breastfeeding preparation, breastfeeding attachment positions, problems and solutions in breastfeeding, breastfeeding video tutorials and breastfeeding milk management as well as interactive chat with a breastfeeding counselor anytime when the mother has breastfeeding problems and needs help. The golden1000 application will guide breastfeeding mothers in an exclusive breastfeeding effort for 6 months, containing

educational content about problems and solutions in breastfeeding and tips on tricks in an effort to achieve exclusive breastfeeding including online consultations with breastfeeding counselors.

Based on the background that has been described, the current problem is that stunting is still high in Indonesia, one of the causes is that the coverage of exclusive breastfeeding is still low due to the lack of knowledge and skills of mothers in breastfeeding, the lack of access to information about breastfeeding is one of the contributing factors (24). The use of the golden1000 application for the success of exclusive breastfeeding, is expected to increase maternal literacy about breastfeeding so that it can successfully provide exclusive breastfeeding.

## **MATERIALS AND METHODS**

This research uses quasi experiment design method, with posttest only control group design approach. This design allowed researchers to measure the effect of the treatment on the experimental group by comparing the group with the control group. In this study, the treatment group was given an intervention in the form of a golden1000 menu application about breastfeeding including an educational menu about breast milk, attachment position video tutorials and online consultation chat features with breastfeeding counselors to III trimester pregnant women and the control group was only given health education about breastfeeding preparation

using MCH books. The population in this study is all primigravida III trimester pregnant women found in the working area of the Bungursari Tasikmalaya 2024 health center totaling 60 people, the sample technique used is total sampling with inclusion criteria (term pregnancy, physiological, willing to be a respondent) and exclusion (pregnant with complications, history of disease cannot breastfeed).

The tools and research materials used, namely the Golden 1000 application, were downloaded directly by the case group accompanied by researchers to register and personalize. Introduction to breastfeeding application features in the form of educational menus, video tutorials and online chats with breastfeeding counselors and how to use them MCH books pages about breastfeeding, as well as Breastfeeding Kits.

The data analysis used was univariate analysis including exclusive breastfeeding and bivariate analysis which looked at the effectiveness of golden1000 application on the success of exclusive breastfeeding using analysis using chi-square statistical test and multivariate using logistic regression. The collection of characteristic data was carried out after respondents signed a letter of consent involved in the study.

Exclusive breastfeeding measurement in the hypnoxygenation group and non-treatment group is said to be successful if from birth in the first hour of birth to 6 months of age the baby is only given breast milk without other fluids / additional foods (unless

there are medical indications such as drug administration to sick babies). The study was conducted for 7 months, from 36 weeks gestation to 6 months of pregnancy.

## RESULTS AND DISCUSSION

### RESULTS

Based on the **Table 1**, the majority of respondents in the golden 1000 application group were 25 respondents or 83.34% of exclusive breastfeeding, while in the MCH book group, the majority were not exclusively breastfed, which was 19 respondents or 63.33%.

**Table 1. Exclusive breastfeeding data distribution Golden 1000 application group and MCH Books group**

Exclusive breastfeeding	Group			
	Golden 1000 App		MCH Books	
	n	%	n	%
Exclusive breastfeeding	25	83.34	11	36.67
Not Exclusive Breastfeeding	5	16.67	19	63.33
Total	30	100	30	100

**Table 2. Result of the wilcoxon sign rank test analysis**

	N		
	Pre – Post Test	%	P value
KIA book group	25	83.34	
Application Golden 1000 group	5	16.67	0,02

The results **Table 2** of statistical tests showed  $p = 0.002$ , statistically there was a difference in the success of exclusive

breastfeeding between the golden1000 application group and the MCH book group.

## DISCUSSION

The results **Table 1** was conducted to see the use of the golden1000 application for the success of exclusive breastfeeding in stunting prevention efforts, the results of the research obtained were in the respondents of the golden 1000 application intervention group, the majority of exclusive breastfeeding was 25 respondents or 83.34%, while in the MCH book group the majority were not exclusively breastfed, namely as many as 19 respondents or 63.33%, with statistical test results showing  $p = 0.002$ , statistically there is a difference in the success of exclusive breastfeeding between the golden1000 application group and the MCH book group.

The results of this study are in line with research conducted by Lestari P J, Agushyana F, Nugraheni S A regarding the effect of the application of the Sik-Asiek application (Exclusive Breastfeeding Health Information System) on knowledge and attitudes towards exclusive breastfeeding, with the results of the Sik-Asiek Application research proven effective in increasing knowledge and attitudes about exclusive breastfeeding(25).

Increasing knowledge and exclusive breastfeeding practices is supported by accessing the right information and understanding the information correctly. Information about exclusive breastfeeding can be obtained through various means

including mass media, friends, and health workers, and can also be obtained through internet media and health applications (23).

Smartphone apps provide a useful and inexpensive way to disseminate information about the health benefits of breastfeeding to the public. As a health promotion medium, smartphone applications have the advantage of being able to provide various features including visual design capabilities, attractive video and audio, unlimited text capabilities, access with or without a cellular or internet connection, content that can be shared through social media, and tracking progress anywhere and anytime(26).

The use of the Golden1000 application has succeeded in increasing the knowledge and practice of breastfeeding because it began to be given during the pregnancy period. This is in accordance with research by Pitts, et al who showed that tablet-based education has a positive influence on starting and maintaining breastfeeding if given during the antenatal period and a study conducted by Lau, et al, showed mHealth technology can improve the knowledge and practice of breastfeeding for 6 months if given in the perinatal period (22).

The results of **Table 2** the study show that there is an influence of the golden1000 application on the exclusive success. In the golden1000 application menu, there are features for preparing for breastfeeding and breastfeeding for pregnant women and before childbirth. In the breastfeeding preparation feature of the golden1000

application downloader (pregnant women) is explained in a simple and easy-to-understand manner about the importance of exclusive breastfeeding and the benefits for mothers and babies in the short and long term, understanding of every pregnant mother can definitely breastfeed because the physiology of the pregnant woman's body also prepares for the lactation process later. With an understanding of breastfeeding, it will increase the mother's confidence to breastfeed, then explained and given direct practice by watching videos on how to practice breastfeeding correctly and the obstacles that mothers may experience at the beginning of breastfeeding and how to solve them. So that when the baby is born, the mother is ready to breastfeed and understands to anticipate breastfeeding problems (27). There is an online consultation feature with midwives that allows mothers to address breastfeeding problems quickly and accurately, as well as homeservice services for problems that need immediate action.

#### **CONCLUSION AND RECOMMENDATION**

The Golden1000 application has proven effective in increasing the success of exclusive breastfeeding, so the right method is needed to promote the Golden1000 application to the wider community to be interested and actively use this application. With the results of research that shows the effectiveness of the Golden1000 application on the success of exclusive breastfeeding, researchers convince that the Golden1000

application is something that must be given by health workers when accompanying maternal labor.

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