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THE EFFECT OF USING THE ELSIMIL APPLICATION ON THE READINESS OF PROSPECTIVE BRIDES AND GROOMS IN STUNTING MITIGATION EFFORTS

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ABSTRACT
Reproductive health is a crucial aspect of preparing for a healthy married life. Sometimes, prospective brides and grooms don't realize the importance of maintaining their health before pregnancy. This lack of knowledge can increase the risk of stunting. Accessing health education and support through mobile apps is an effective way. One application developed by the BKKBN for health screening of prospective brides and grooms is the 'Elsimil' (Electronics Ready for Marriage and Pregnancy). The purpose of study was to determine the effectiveness of the use of the 'Elsimil' on the readiness of prospective brides and grooms. The type of research is Quasi-experiment with One group pre-posttest design. The sample was taken using a Purposive sampling with a sample size of 36 people. Data collection of health behaviour of prospective brides and grooms using questionnaires to measure the level of knowledge and attitudes of prospective brides and grooms regarding pre-marital health screening as well as observation sheets for monitoring the health of prospective brides and grooms. Data analysis using the Wilcoxon test. The results of this statistical analysis indicate that there is an effect of the use of the 'Elsimil' application on the readiness of prospective brides and grooms in stunting mitigation efforts, with the results obtaining a p-value of 0.000.

Keywords: application; brides and grooms; elsimil; readiness; stunting

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INTRODUCTION

Preparing a quality generation must begin early. Prospective brides and grooms are part of a group preparing to enter family life, so they need to adopt healthy reproductive and nutritional behaviors, starting with pregnancy planning and pre-conception care (Bahkali et al., 2022). Marriage and reproductive health are crucial aspects of community life. This is because one of the most valuable assets for a nation and state is the creation of capable human resources. The role of the family must be optimized to shape a generation of quality and character (Liang et al., 2019). Within the framework of developing the quality of human resources, the problem of stunting, which is a part of the double burden of malnutrition, has a very detrimental impact both in terms of health and economic productivity in the short and long term (Barry M. Popkin, Camila Corvalan, 2020). Expectant mothers who don't understand the importance of maintaining health before pregnancy can increase the risk of stunting in children (Kiosia et al., 2024).

Stunting is a global health problem that can impact people's quality of life. Stunting not only indicates nutritional deficiencies and health at the individual level, but also reflects broader issues related to human development (Nugent et al., 2020). In this challenge, the prospective bride and groom are identified as a critical group on the journey towards forming a healthy family (Valizadeh et al., 2021). Stunting affects approximately a quarter of children under five worldwide, mostly due to nutritional deficiencies and infectious diseases (Mustakim et al., 2022). Chronic malnutrition causes growth disorders so that the child's height does not match his age or linear growth retardation occurs, which has an impact on physical health, including mental, emotional and

intellectual health (Vaivada et al., 2020). Therefore, stunting prevention efforts must be carried out early to break the chain of stunting transmission.

The prospective bride is a prospective mother who is the spearhead of children's health, so she needs to know things related to fulfilling nutritional needs during the first 1000 days of life, which starts from 270 days of pregnancy to 730 days after birth (Mulyaningsih et al., 2021). A mother's knowledge about nutrition affects her health, the health of her unborn baby, and the quality of her unborn baby. However, nutritional education is typically provided during pregnancy, whereas nutrition education should be provided before pregnancy, or during preconception. Education for prospective brides and grooms on stunting prevention can significantly reduce the risk of stunting (Ramakrishnan, 2020). Information and communication technology in today's digital era has become an integral part of daily routines. Access to health education and support through mobile apps is an effective way for prospective brides and grooms to increase their knowledge regarding pregnancy preparation and early detection of complications (Rehana A. Salam et al., 2020). An example of the progress of science and technology in one of the developed countries that has implemented mobile health is 'SmartMoms Canada' which aims to manage the health behaviour of prospective pregnant women Adamo et al, 2023).

The use of mobile applications to support healthy pregnancy preparation has been attempted in Indonesia, pioneered by the National Population and Family Planning Board for health screening of prospective brides and grooms, namely the 'Elsimil' (Electronic Ready for Marriage and Pregnancy) application. Although the majority of the public strongly supports the 'Elsimil' program as one of the requirements applied in marriage procedures, several regions in Indonesia have not been maximally exposed to the use of the 'Elsimil' application, so significant results regarding its effectiveness in preventing stunting are not yet known (FITRIAMI & Galaresa, 2021). This is also because the 'Elsimil' program was only socialized in the middle of the year and implemented only in several large cities at the end of 2022 (Ayu et al., 2024).

Based on data from Office of Religious Affairs in the Darul Imarah region of Aceh Besar Regency, in 2024 there were 78 target prospective brides and grooms, but only around 46% or around 36 people participated in pre-marital assistance seriously and according to the schedule available at the Office of Religious Affairs. Therefore, it is necessary to increase the understanding of prospective brides and grooms about early detection of reproductive health, pregnancy planning, and care during the pre-conception period through the use of the 'Elsimil' application. The presence of the 'Elsimil' application is an innovative solution in changing the health behavior of prospective brides and grooms. The purpose of study was to determine the effectiveness of the use of the 'Elsimil' application on the readiness of prospective brides and grooms in efforts to mitigate the risk of stunting in the working area of the Darul Imarah Religious Affairs Office, Aceh Besar Regency.

METHOD

The type of research is quasi-experiment with one group pretest-posttest design. This research was conducted at the Office of Religious Affairs in the Darul Imarah region of Aceh Besar Regency in April-May 2025. Samples were taken using purposive sampling technique with a total sample of 36 people. The research respondents were prospective brides and grooms who were identified as not having been exposed to the Elsimil application and were registered at the Office of Religious Affairs. Data collection of health behaviour of prospective brides and grooms using questionnaires to measure the level of knowledge and attitudes of prospective brides and grooms regarding pre-marital health screening as well as observation sheets for monitoring the health of prospective brides and grooms, especially pre-marital nutritional status related to preventing anaemia by measuring haemoglobin levels, preventing chronic energy deficiency by measuring upper arm circumference, checking body mass index, body weight and abdominal circumference, and exposure to cigarette smoke.

This study aimed to determine the initial health conditions and health behaviors of prospective brides and grooms. Furthermore, the experimental group received premarital counselling using the Elsimil application. After each group received treatment, a postmarital test was conducted to assess changes in health conditions (free from anaemia, free from chronic energy deficiency, and free from cigarette smoke exposure) and the health behaviors of prospective brides and grooms, as assessed by scores on a questionnaire evaluating the level of knowledge and attitudes of prospective brides and grooms through premarital and postmarital tests.

Picture 1. ELSIMIL application

The research data were analysed descriptively to describe each variable. The Wilcoxon test was used to assess differences in the average (mean) within the same group for the behaviour of prospective brides and grooms before and after receiving premarital mentoring intervention through the Elsimil application in the treatment group.

RESULTS

Table 1.
Frequency distribution of respondent characteristics (n=36)

Respondent Characteristics	f	%
Age		
21-25 years	11	30.6
26-30 years	21	58.3
31-35 years	4	11.1
Level of education		
Senior high school	8	22.2
University	28	77.8
Job level		
Work	31	86.1
Doesn't work	5	13.9

Table 1 shows that the majority of respondent characteristics are based on age, namely at the age of 26-30 years were 21 respondents (58.3%), while based on the category level of education the majority of respondents are at university level were 28 respondents (77.8%), and the largest employment level category is working, namely 31 respondents (86.1%).

Table 2.
Frequency distribution of the knowledge level of prospective brides and grooms regarding pre-marital screening (n=36)

Level of knowledge about premarital screening	f	%
High	11	30.6
Low	25	69.4

Table 2 shows that the majority of respondent have low knowledge about premarital screening were 25 respondents (69.4%).

Table 3.
Frequency distribution of attitudes of prospective brides and grooms towards premarital screening (n=36)

Attitude towards premarital screening	f	%
Positive	13	36.1
Negative	23	63.9

Table 3 shows that the majority of respondents had a negative or indifferent attitude towards premarital screening were 23 respondents (63.9%).

Table 4.
Frequency distribution of medical examination for prospective brides and grooms (n=36)

Medical examination	f	%
Haemoglobin levels		
Normal	11	30.6
Less	25	69.4
Chronic energy deficiency		
Yes	25	69.4
No	11	30.6
Body mass index		
Ideal	11	30.6
Underweight	25	69.4
Overweight	0	0
Total	36	100
Abdominal circumference		
Normal	11	30.6
Risk	25	69.4
Exposure to cigarette smoke		
Yes	28	77.8
No	8	22.2

Table 4 shows that the majority of respondents with low haemoglobin levels, chronic energy deficiency, body mass index in the underweight category and abdominal circumference at risk were 25 respondents (69.4%). The majority of respondents exposure to cigarette smoke were 28 respondents (77.8%).

Table 5.
Frequency distribution of the level of readiness of prospective brides and grooms before intervention (n=36)

Level of readiness	f	%
Ready	11	30.6
Not ready	25	69.4

Table 5 shows that the majority of respondents, before being given information about the benefits of 'Elsimil', were in the category of not being ready for stunting mitigation efforts, as many as 25 respondents (69.4%).

Table 6.
Frequency distribution of the level of readiness of prospective brides and grooms after intervention (n=36)

Level of readiness	f	%
Ready	36	100
Not ready	0	0

Table 6 shows that all 36 respondents (100%), after being given information about the benefits of 'Elsimil', were in the ready category in stunting mitigation efforts.

Table 7.
Data normality test results

	Statistic	df	Sig
Before giving 'ELSIMIL'	0.792	36	0.002
After giving 'ELSIMIL'	0.611	36	0.000

The requirement before parametric statistical tests in experimental research is that data normality tests are carried out first using the Shapiro-Wilk test. Based on table 7, the value of Sig. in the Shapiro-Wilk column has a value of less than 0.05, namely before the ELSIMIL' application intervention of 0.002 and after the ELSIMIL' application intervention of 0.000. The conclusion is that the data is not normally distributed. Therefore, a test used to determine the average difference in variables before and after the intervention in the same group used the Wilcoxon test.

Table 8.
The effect of using the elsimil application on the readiness of prospective brides and grooms in efforts to mitigate stunting

Treatment		N	Mean Rank	Sum of Ranks	Sig (2-tailed)
After Elsimil Before Elsimil	Negative Ranks	34[a]	8.00	120.00	0.000
	Positive Ranks	0[b]	.00	.00	
	Ties	2[c]			
	Total	36			

Table 8 shows that there is a difference in the average level of readiness of prospective brides and grooms before and after the intervention, with the Wilcoxon test results obtaining a p-value of 0.000. The results of this statistical analysis indicate that there is an effect of the use of the 'Elsimil' application on the readiness of prospective brides and grooms in stunting mitigation efforts in the work area of the Religious Affairs Office, Darul Imarah District, Aceh Besar Regency.

DISCUSSION

The research results show that the use of the Elsimil application is effective in increasing the readiness of prospective brides and grooms in stunting mitigation efforts such as premarital screening. The 'Elsimil' application is designed to provide guidance and support to prospective brides and grooms to ensure successful wedding preparations, with the hope of reducing the risk of stunting in children born in Indonesia. Launched in December 2021, the application is accessible via Android smartphones, tablets, smartwatches, websites, and smart TVs. Adequate storage space is required for Android smartphones and tablets (Ayu et al., 2024).

Elsimil is a government effort to reduce stunting rates from the upstream, regulated by Presidential Regulation No. 72 of 2021 concerning the acceleration of stunting reduction (Secretariat for the Acceleration of Stunting Reduction, Ministry of National Development Planning/ Bappenas, 2022). Therefore, prospective brides and grooms must have an 'Elsimil' certificate and undergo a series of health examinations to meet the criteria outlined in the application. Registration for the application can be done independently or through the Family Companion Team, consisting of family welfare empowerment members, midwives, and family planning counselors (Ayu et al., 2024). There are several benchmarks for filling out the 'Elsimil' application, namely body mass index, where prospective brides who are underweight are at risk of not being able to meet the nutritional needs of their fetus. Therefore, upper arm circumference measurements are used to determine the risk of chronic malnutrition; hemoglobin levels for prospective brides to determine whether they are anemia; age at marriage, where according to the National Population and Family Planning Board the marriage age is 21 years for women and 25 years for men; if a bride is pregnant before 21, she is at risk of giving birth to a low-birth weight baby. 20% of babies with low birth weight are at risk of stunting; and active smoking or exposure to secondhand smoke for brides is at risk of giving birth to premature and low birth weight babies (Shukla et al., 2023).

Research by (Ayu et al., 2024) shows that use of the 'Elsimil' application is driven by the desire to have healthy offspring. Use of this application is seen as a step to ensure optimal child health and development by properly preparing for pregnancy and preventing stunting in future babies. This reflects respondents' awareness of the well-being of future generations and their desire to create an environment that supports children's growth and development. Motivation to have healthy offspring or prepare well for pregnancy are reasons why people actively use the 'Elsimil' application as a tool

to achieve their desired health goals. Strong motivation is also a key factor in application adoption. The stronger motivation, the greater its influence on application usage behaviour.

Premarital counseling provides prospective brides and grooms with knowledge, understanding, skills, and awareness about married life and preparing to become parents. Premarital counseling is crucial before a bride and groom get married, as it helps them create a happy and successful family (Soeiro et al., 2023). This statement is in line with the results of observations carried out by researchers that the next form of guidance is to use the interview method. Premarital counseling can certainly be challenging at first, but this isn't as daunting as it seems. During this process, the couple is learning about previously unknown issues to avoid misconceptions. Therefore, the 'Elsimil' application facilitates the provision of premarital education, offering engaging and accessible features (Nasution & Zulkarnain, 2023).

Information and communication technology in this digital era has become an integral part of daily routines. Access to health education and support through mobile applications is an effective means for prospective brides and grooms to increase their knowledge regarding pregnancy preparation and early detection or screening (R. A. Salam et al., 2020). An example of technological advancement in one developed country that has implemented mobile health is 'SmartMoms Canada', which aims to manage the health behaviors of expectant mothers (Adamo et al, 2023). This is also in line with the results of research which revealed that through the use of technological advances in the health sector, such as the use of a simple alarm 'PERMISI GANDU' as a reminder for compliance in consuming iron tablets in adolescent girls in overcoming anemia from an early age, the results of the showed p-value < 0.05, indicating that the telemidwife-based 'PERMISI GANDU' alarm was effective in increasing compliance with iron consumption and hemoglobin levels in anemia adolescent (Zulisa, E., Fuady, K., & Handiana, 2024).

The 'Elsimil' application, developed by the National Population and Family Planning Agency, functions as Big Data, providing an analytical overview of the health status of prospective brides and grooms. Health screening efforts focus on variables that determine stunting (Becker et al., 2020). The screening results are then presented in the form of a prospective bride and groom card, which categorizes them as at or not at risk of giving birth to a stunted baby. If the screening results indicate a high-risk category, researchers, along with the Family Support Team, recommend postponing pregnancy until the desired health conditions for a healthy pregnancy are achieved (Ayu et al., 2024).

In this study, not only one health problem condition was observed, but also included several important things, especially those related to nutritional status, such as checking hemoglobin levels, measuring upper arm circumference, body mass index, body weight, abdominal circumference and exposure to cigarette smoke in prospective brides and grooms. The results (Enggardany et al., 2021) of the study showed that of the 19,888 premarital women with anemia, there was a difference or increase in Hb levels from before to after mentoring, namely 1.92 gr/dl. The results of the linear regression analysis showed that mentoring had an effect on increasing Hb levels in premarital women with anemia (p=0.000; RR 6.19).

CONCLUSION

The use of the 'Elsimil' application effective increases the readiness of prospective brides and grooms in stunting mitigation efforts as a premarital screening. It is hoped that health workers can continue to socialize the 'Elsimil' application to prospective brides and grooms, especially young adults in pre-marital preparations so that the possibility of giving birth to a stunted generation can be prevented.

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