






Prediction the Intentions of Behaviour of Prospective Brides Using Elsimil Applications on Stunting Prevention in Batu City

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Abstract. Results of Family Data Collection, 2021 Batu City, East Java states that there are 49.3% of families at risk of stunting, these results are predicted to increase the prevalence of stunting 15% if it is not prevented. Efforts to prevent stunting can be used in applications such as Elsimil who effort to reduce of stunting. The research is to predict behavioural intentions of brides using the Elsimil in preventing stunting in Batu City with three predictor variables, behaviour, normative belief, and control belief, how each of these influences' behavioural intentions. The method is a quantitative study with a cross-sectional study design and analysis using ordinal logistic regression. The results showed that the behavioural control had a significant effect on the high behavioural intention of brides using the elsimil in preventing stunting in Batu City ($p=0.034$) with a prediction classification accuracy of 31% in classifying behaviour intentions categories. Meanwhile, separately the positive behaviour was high ($p=0.003$), low ($p=0.015$), pressure from a normative belief ($p=0.011$), high ($p=0.000$) and low positive control belief ($p=0.046$) has a significant effect on behavioural intention. High control belief for brides using the Elsimil affects behavioural intentions in preventing high stunting in Batu City by 0.10 more than those who have low or moderate.

Keywords: Behavioural intentions, Elsimil applications, Stunting

1 Introduction

Stunting is a problem in the health sector, on the other hand stunting can also have long-term impacts including on the quality of human resources and the economy. The condition of stunting in children triggers cognitive disorders and physical development, which results in low performance and an increased risk of poverty. Children with stunting are more susceptible to developing degenerative diseases, such as obesity, diabetes mellitus, heart disease, stroke, and hypertension [1].

According to [2], the incidence of stunting is related to the low nutritional quality of children in Indonesia. Stunting is caused by a condition of chronic malnutrition that is cumulative and recurrent. The period before and after birth affects the prevalence of stunting. Stunting conditions are influenced by proper nutrition during the first 1000 days of life, starting from the time you are in the womb [3]. Research reveals that the most common factors associated with stunting cases include innate factors from the mother individually. There is a correlation between educational factors, height, maternal health and malnutrition during pregnancy on stunting [4]. In addition, according to [5], giving exclusive breastfeeding to children after birth is a factor in the incidence of stunting. Based on this, mothers play an important role in preventing stunting.

Stunting prevention efforts are urgently needed, especially in a massive and preventive manner. Stunting prevention can be influenced by several aspects, one of which is government initiatives, adjustments to mobilization and policies, public commitment, allocation of resources, to efforts to choose healthy food for the community [1,6]. The electronic application ready for marriage and pregnancy (Elsimil) was launched by the government through the BKKBN in 2021. The BKKBN was appointed as the front guard in efforts to accelerate the reduction in the prevalence of stunting in Indonesia in 2021 in achieving the target of reducing the prevalence of stunting, the Elsimil application was launched to assist the government in carrying out recording of the health condition of the bride and groom, before marriage and having children. The health information that will be recorded in the Elsimil application includes height, weight, upper arm circumference, and anemia. It aims to determine the tendency of mothers to experience anemia during pregnancy, as well as to detect cases of malnutrition in mothers. According to [7], anemia conditions can increase the risk of stunting. Pregnant women who suffer from anemia have a four times higher risk of giving birth to children with stunting conditions, compared to mothers who do not have anemia. In addition, the Elsimil application helps the government to assess the readiness of prospective brides, through the results of a questionnaire.

The World Health Organization (WHO) says that by 2020, there will be 149.2 million (22%) children under five years worldwide who are stunted. The prevalence of stunting in the Southeast Asia region is estimated at 27.4%. In each region, WHO sets a maximum limit for stunting sufferers, which is 20%. The prevalence of stunting in Indonesia has decreased by more than 10% from 1992 to 2013, cases of stunting in Indonesia are higher compared to other Southeast Asian countries, such as Malaysia (8.4%), Thailand (4.1-8.4%) and Vietnam (14-15%) [4], with a prevalence of more than 20%. According to data from the Ministry of Health of the Republic of Indonesia, West Sulawesi and East Nusa Tenggara were the provinces with the highest stunting rates in 2018, and East Java was the province with the second highest stunting rate on the island of Java. The prevalence of stunting in East Java still exceeds the national average prevalence of 19.3% from the 2018 Riskesdas data which reached 19.9% [8].

Indonesia is one of the countries with the highest cases of malnutrition, including cases of stunting with a prevalence of 30.8% [9]. East Java Province is one of the regions of the island of Java in Indonesia with the second highest stunting rate after Central Java, reaching 26.9% [10]. Batu City, which is one of the areas in East Java in 2022 based on data from the Indonesian National Population and Family Planning Agency

(BKKBN), is in the medium green zone category with a stunting prevalence of 14.6% [11]. Results of Family Data Collection (PK), 2021 Batu City states that there are 49.3% of families at risk of stunting, this result is predicted to increase the prevalence of stunting in Batu City if it is not prevented. Based on records of the prevalence of Technical Stunting (TA) stunting in Batu City in February 2022, there were three villages with the highest prevalence. The prevalence of stunting in Tulungrejo Village is 20.6%, Giripurno Village is 27.7%, and Sumberbrantas Village is 27.7%. These three villages are in the Bumiaji District area.

Various stunting prevention strategies have been carried out by the government, one of which is a behaviour change communication strategy with the successful achievement of reducing the prevalence of stunting in children under two years of age by 4.9%, from 32.9% to 28% at the end of 2019 in all districts/regencies/ city. In addition, the stunting prevention strategy through education in various media, including online platforms, such as the preventsstunting.com page, which can be accessed in general, has been used by many people in preventing stunting. Currently, online applications are considered as an effective medium for massively conveying information, including efforts to prevent stunting through the Elsimil application strategy. The Elsimil application is one of the online media applications launched by the BKKBN government as a form of efforts to accelerate the reduction of stunting cases in Indonesia. This application is used in all regions of Indonesia, through each Provincial Center. The East Java government, especially the BKKBN, is promoting the use of the Elsimil application program, targeting prospective brides, including the Batu city area, to prevent stunting. The Elsimil application has good interventions with the aim of reducing stunting rates in the future and is still in the socialization stage, especially by the Office of Women's Empowerment, Child Protection, Population Control and Family Planning (DP3AP2KB) in Batu City. However, until now, the effect of using the Elsimil application on behavioural intentions to prevent stunting cases, especially in the city of Batu, is unknown.

Based on this description, in this study an analysis will be carried out to predict the behavioural intentions of the prospective bride and groom when using the Elsimil application to prevent stunting cases in Batu City. Predictive analysis of the use of the Elsimil application is carried out through the Theory of Planned Behaviour approach, by measuring the behavioural intentions of the bride and groom who have downloaded and used the Elsimil application. The purpose of this study is to predict the behavioural intentions of the prospective bride and groom when using the Elsimil application to prevent stunting cases in Batu City with three predictor variables, namely attitude, social pressure, and behavioural control and how each of these variables influences the behavioural intentions of prospective brides using the Elsimil application.

2 Methods

This study used a quantitative research design with a cross-sectional analytic descriptive study which was conducted from November 2022 - January 2023 in the Batu City area, Malang, East Java. The population in this study were all prospective brides

and grooms who had downloaded the Elsimil application from 1 August to 26 October 2022 and samples were taken using a total purposive sampling technique, namely 60 couples or 120 research subjects. The research instrument uses a questionnaire that has been tested for validity and reliability on samples that have the same characteristics as the research subjects. Furthermore, the processed results of the questionnaire data were tested statistically with SPSS. The process of collecting data on research subjects was carried out after conducting validity and reliability tests. The statistical analysis used in this study is Ordinal Logistic Regression Analysis to determine the predictor variables that influence the behavioural intentions of prospective brides using the elsimil application in preventing stunting in Batu City, Malang. In addition, this research has been carried out an ethical test at the Ethical Eligibility Institute of the Faculty of Medicine, Airlangga University with number 033/HRECC.FODM/I/2023.

3 Results

3.1 Characteristic Respondents

The characteristics of the respondents were obtained from collecting primary data through a questionnaire which is shown as a description of the data from the variety of research subjects. The characteristics of the respondents include gender, age, last education, and address of the research subjects which have been presented in Table 1 below.

Table 1. Characteristic Respondents

| Characteristics | Category | Frequency | % |
|------------------|-------------|-----------|------|
| Sex | Man | 32 | 50 |
| | Woman | 32 | 50 |
| Age* | 18-25 years | 41 | 64.1 |
| | 26-35 years | 23 | 35.9 |
| Last education** | High School | 35 | 54.7 |
| | Diploma | 7 | 10.9 |
| | Bachelor | 22 | 34.4 |
| Subdistrict** | Batu | 36 | 56.3 |
| | Junrejo | 16 | 25.0 |
| | Bumiaji | 12 | 18.8 |

*Category by [12]

**Category from Processing Data, (2023)

Based on Table 1, from 64 respondents, 64.1% of them were 18-25 years of age. It also found that most respondents had graduated from high school education (54.7%) and undergraduate (34.4%). Based on their residence, most respondents lived in Batu City (56.3%).

3.2 Characteristics of prospective brides who use the Elsimil application in preventing stunting in Batu City

The characteristics of the attitude of the prospective bride and groom using the Elsimil application can be seen through Figure 1.

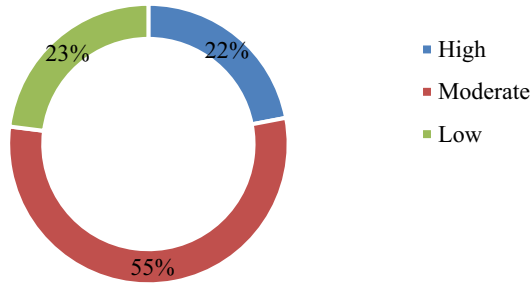


Fig. 1. The overall result of the attitude of prospective brides using Elsimil Application

Figure 1 shows the overall results of the attitude of the prospective bride and groom using the Elsimil application, namely 55% have a moderate attitude and the others have a low (23%) and high (22%) attitude.

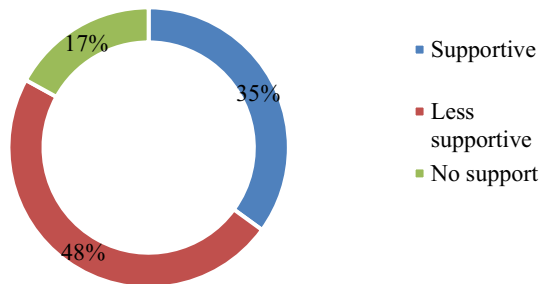


Fig. 2. Overall result of social pressure of potential Elsimil Application users

Based on social pressure that the bride and groom will experience when using Elsimil, as many as 48% respondents stated that they had less support from social pressure, while 35% respondents admitted that they had good support from the surrounding environment in preventing stunting (Figure 2).

Figure 3 explain that most respondents had high behavior control in preventing stunting. More than half of the total respondents (58%) confess those statement.

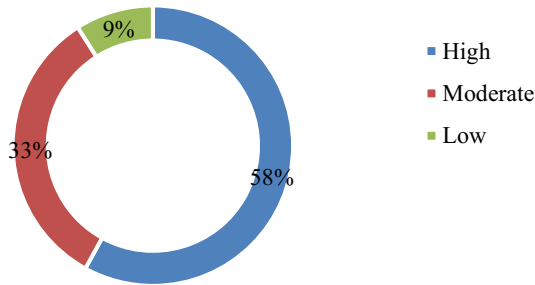


Fig. 3. The overall results of the Elsimil application user behaviour control of prospective brides and grooms

Based on Figure 4, it was known that overall result of the behavioural intention of the prospective bride and groom using the Elsimil application, which is high at 53%, moderate at 34%, and low at 13%. Therefore, this percentage shows that with the Elsimil application for prospective brides in Batu City, they already have a high intention/desire to prevent pre-wedding stunting.

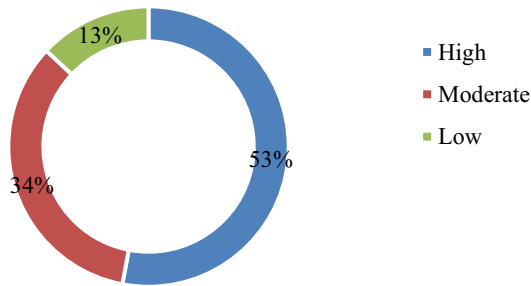


Fig. 4. The overall result of the behavioural intention of the prospective bride and groom using the Elsimil application

3.3 Goodness of Fit Test

This test aims to determine whether there is multicollinearity or whether the model equation formed is appropriate.

Table 2. Result Goodness of Fit Test

| | Chi-Square | df | P-value |
|----------|------------|----|---------|
| Pearson | 30.431 | 28 | 0.343 |
| Deviance | 26.575 | 28 | 0.541 |

Based on the results of the model fit test, it shows that the Chi-Square Pearson test is 30.431 and the p-value is 0.343 where the p-value > 0.05 means it fails to reject H_0 . So, it can be concluded that there is no significant difference between the observed results and the possible prediction results of the model, or it can be said that the model used is suitable and there is no multicollinearity. Thus, it can be said that there is no correlation between predictor variables.

Testing this model begins with determining the research baseline to determine the intentions/desires of the prospective bride and groom to use the Elsimil application in preventing pre-marital stunting and the behaviours that influence it. The baseline of this study is the high behavioural intention variable, the high category attitude, the subjective norm category of support, and the high behaviour control of prospective brides using the Elsimil application.

3.4 Prediction of the Behavioural Intentions of Prospective Brides Using the Elsimil Application for Stunting Prevention in Batu City

Partial Testing

Partial testing is carried out to determine the effect partially or individually between the predictor and response variables. This initial test was carried out by establishing a dummy variable as baseline data on the predictor variables (Attitudes, Subjective Norms, and Behavioural Control) to find out what influences the response variable (Behavioural Intentions).

Table 3. Factors Affecting the Behavioural Intentions of the Bride and Groom

| Predictor Variable | Category | Estimate | P-value |
|-------------------------|-----------|----------|---------|
| Attitude (X1) | Constanta | 1.460 | 0.040 |
| | High | -0.160 | 0.527 |
| Subjective Norm (X2) | Constanta | 1.990 | 0.002 |
| | Support | -0.486 | 0.127 |
| Behavioural Control(X3) | Constanta | 1.725 | 0.002 |
| | High | -0.865 | 0.040 |

Based on Table 3, it can be seen that the baseline predictor variable that has a statistically significant effect on the response variable partially is high behavioural control with a p-value < 0.05 . Thus, it can be concluded that the behavioural intentions of prospective brides using the Elsimil application in preventing pre-wedding stunting in Batu City are influenced by high positive beliefs compared to moderate and low behavioural controls.

Simultaneous Testing

Simultaneous testing was carried out to see the effect of the predictor variable simultaneously on the response variable. This test was conducted to determine the creation

of a regression model or prediction of the behavioural intentions of prospective brides using the Elsimil application for preventing pre-wedding stunting in Batu City.

Table 4. Prediction of Factors Influencing the Behavioural Intentions of the Bride and Groom

| Predictor Variable | Category | Estimate | P-value |
|---------------------------|-----------|----------|---------|
| Behavioural Intention (Y) | Constanta | -1.171 | 0.011 |
| Attitude (X1) | High | 0,692 | 0.393 |
| Subjective Norm (X2) | Support | 1.586 | 0.019 |
| Behavioural Control (X3) | High | 1.187 | 0.054 |

Based on Table 4, it can be seen that from the baseline data the predictor variable has a statistically significant effect on the response variable simultaneously, namely the subjective norm that supports it with a value of $p = 0.01$. Thus, it can be concluded that the behavioural intentions of prospective brides using the Elsimil application in preventing pre-wedding stunting in Batu City are significantly influenced by supportive subjective norms.

The logit function is used to calculate the probability of the logit model.

The behavioural intention of the prospective bride and groom using the Elsimil application = $-1.171 + 0.692$ (attitude) + 1.586 (subjective norm) + 1.187 (behavioural control)

From this prediction model, it can be explained that the high attitude of prospective brides who use the Elsimil application towards preventing pre-wedding stunting in Batu City is higher than the moderate and low attitudes. Likewise with subjective norms and behaviour control of prospective brides who use the Elsimil application, there is a higher intention to prevent pre-wedding stunting in Batu City. If the independent variables include attitude, subjective norm, and moderate and low behavioural control, then the prediction of the behavioural intention of the prospective bride and groom using the Elsimil application is -1.171 lower than predicted by high attitude variable, supportive subjective norm, and high behavioural control of 2.294 .

4 Discussion

This study found that most of respondents aged 18-25 years old. This age group is the productive age of late adolescents who are literate with digital development, meaning behavioural intentions at a productive age who are digitally literate to use the Elsimil application in preventing stunting can be said to be good. They also had higher education. It was predicted to have a high behavioral intention to use the Elsimil application in preventing stunting.

Based on measuring the bride's attitude regarding the use of the Elsimil application, more than $3/4$ of the total respondents had a moderate to good attitude regarding the

benefits of Elsimil in providing information to brides and grooms to prevent stunting. This finding was in line with previous study that was found that 83.5% young women had positive attitude [13].

This study showed that the intention of the bride and groom in finally wanting to use this application is quite good. The high intentions of the prospective bride and groom to use Elsimil application encourages them to apply the information they get from the application, especially behavior that can prevent stunting. Intention is an indication of a person's readiness to perform certain behaviours and is considered as a direct determinant or cause of behaviour. Family-based education programs were very effective in increasing attitudes, subjective norms, and perceptions of behavioural control to form a strong intention of pregnant women to improve the health of the mother and the unborn baby. The strong intention of stunting toddler mothers in the behaviour of providing healthy food to stunting toddlers provides great hope for improving the nutritional status of toddlers, so that they can grow and develop properly [14].

5 Conclusion

From the results of the prediction analysis, it was found that of the three predictor variables, namely attitude, subjective norm, and behavioural control, which significantly influenced the high behavioural intention of prospective brides using the Elsimil application for stunting prevention in Batu City, only subjective norm variable. In addition, the behavioural intentions of prospective brides using the Elsimil application in preventing pre-wedding stunting in Batu City were significantly influenced separately by high positive behavioural beliefs or controls. High control belief for brides using the Elsimil affects behavioural intentions in preventing high stunting in Batu City by 0.10 more than those who have low or moderate.

Author's Contribution

All authors participated in the design of this study. ARA conducted the study, analysis and data interpretation. SK and END were responsible for drafting manuscripts and reading intellectual content. All authors wrote the manuscript.

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