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Development Of Nutrition Application Prototype (REGIZI) As A Stunting Control Strategy

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ABSTRACT
This first phase of research aims to develop and test a prototype of a nutrition application called Regizi as a stunting prevention strategy. This application is designed to provide nutrition education features, nutritional status monitoring, and online consultations aimed specifically at parents and caregivers of children under five. App development is carried out through a user-centered design approach, which involves the stages of need identification, design, and application development. The results of the initial trial show that Regizi is effective in increasing users' understanding of the importance of nutrition in stunting prevention and facilitating regular monitoring of children's nutritional status. Thus, Regizi has great potential as a tool in efforts to combat stunting, especially in rural areas that have limited access to health services. The wider implementation of this application, accompanied by improvements based on the results of further evaluation, is expected to make a significant contribution to reducing stunting rates in Indonesia.

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INTRODUCTION

Currently, the development of information technology is going rapidly, so to get information easily with the internet which provides a lot of information that can be accessed anywhere and anytime which covers all aspects of life, one of which is about Health which is an important component in life. Nutrition has an important role for life that is useful for energy and facilitates metabolism in the body. Unbalanced consumption patterns can affect a person's nutritional health, including fast and ready-to-eat food and lack of knowledge about nutrition that causes getting used to an unhealthy lifestyle. For the adult group, nutritional health is important, especially for those who are already married because a healthy lifestyle affects healthy offspring as well (Muhammad et al., 2023)

The development of applications for nutrition measurement is very important, because proper and balanced nutrition has a crucial role in maintaining a person's health and well-being. Accurate nutritional measurements and proper dietary assessments are important elements in ensuring that individuals or groups of people receive the nutritional intake that suits their needs. Nutrition problems in Indonesia include malnutrition and overnutrition. Double Burden of Malnutrition (DBM) is a state of existence between malnutrition and excess macronutrients and micronutrients throughout life (Muhammad et al., 2023).

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Stunting, or the condition of failure to grow due to chronic malnutrition in children, has become one of the biggest challenges in the health sector in Indonesia. The high prevalence of stunting, especially in children under five years old, indicates a serious problem in meeting adequate nutritional needs. Factors such as unbalanced food intake, poor eating habits, and lack of access to correct nutritional information are the main causes of this condition.

The Government of Indonesia launched the "First 1,000 Days of Life Movement" known as 1,000 HPK. (First Day of Life) This movement aims to accelerate nutrition improvement to improve the lives of Indonesia's children in the future. Children's growth and development need to be considered after two years, because catch-up growth will still develop again until puberty. The first 1000 days of life (1000 HPK) is a critical node as the beginning of stunting growth, which on the contrary has a long-term impact to recur in the life cycle. Malnutrition as a direct cause, especially in toddlers, has a short-term impact on increasing morbidity. If this problem is chronic, it will affect cognitive function, namely low intelligence levels and have an impact on the quality of human resources (Muhammad et al., 2023).

The optimal growth and development process determines the quality of the nation's successors, which in the first 1,000 days of life greatly affects the development of the body starting from pregnancy, childbirth to the age of 2 years, followed by the next life. In addition to physical health, mental, emotional, intellectual, or intellectual health factors, which this period is also called the golden period which has a great influence on the quality of human resources. Malnourished children will be born with a low body weight (Premature) which is usually a body with a short posture (Stunting) which affects cognitive development. This also has a great influence on the next generation of adult groups. Assistance for pregnant women's nutrition is very important so that education from the Health Agency to prepare a brilliant generation so that malnutrition can be prevented with adequate nutrition which is still a problem for the lower middle class, especially for underprivileged pregnant women who are only enough for daily life.

The development of digital technology today has great potential to play a role in stunting prevention. Specially designed nutrition apps can be an effective tool in supporting parents and caregivers in ensuring their children get enough nutrition. This application not only serves as an educational platform but also as a monitoring tool that can provide timely interventions. This research aims to develop a prototype of a nutrition application designed to prevent stunting through monitoring the nutritional status of children and providing accurate and easily accessible information. This application is expected to be part of the national strategy in reducing stunting rates in Indonesia.

Based on the problems described above, nutritional health is an important component to prepare a quality generation. Unequal health services and lack of education, both digitally and through socialization, hinder the achievement of a healthy Indonesia society. Therefore, we developed the Nutrition Application (Regizi), a mobile application designed to provide education about nutritional health and can monitor the nutritional status of the community. This application aims to create a more conscious community of healthy lifestyles and improve access to nutritional health consultation services."

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METHODS

This research uses a prototype development approach that is exploratory and iterative. This approach was chosen to produce a nutrition application that can be used as a tool in stunting control efforts. The methodology applied is a user-centered design method, which emphasizes the involvement of the end user in each stage of development to ensure the application fits their needs and preferences.

RESULTS AND DISCUSSION

Proposed System Analysis (User)

The following is the proposed system for the Development of Nutrition Application Prototype (REGIZI) as a Stunting Control Strategy as shown in the following image:

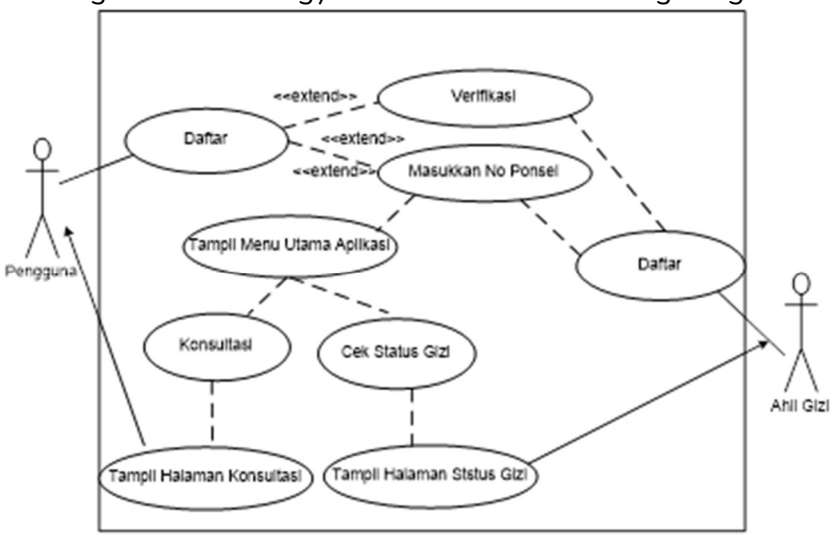

Figure 1 User Usecase Diagram

Figure 1 is a user for user and nutritionist use case diagram. In the first stage, users and nutritionists register and enter through a verification code by entering the mobile phone button, then verification will be carried out and appear on the main menu.

Usecase Diagram Admin

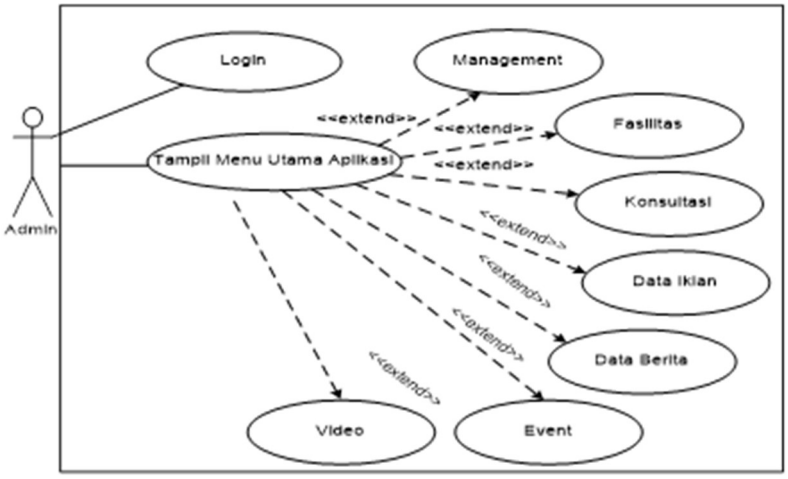

Figure 2 Admin Diagram Usecase

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Figure 2 is the Usecase Admin Diagram which functions to explain the workflow of the admin system consisting of several entities, namely when the application is run it will display the main menu of the nutrition application admin (REGIZI) which consists of several menus, namely Management, Facilities, Consultation, Advertising Data, News Data, Events and Inputs to display Videos.

Results and Discussion of the Initial Trial of Nutrition Application (Regigi)

1. Splash Screen Page

Figure 3. Splash Pages

Figure 3 of the splash screen page display that will appear when the system loads to access the Nutrition Application (REGIZI).

2. User Verification Page

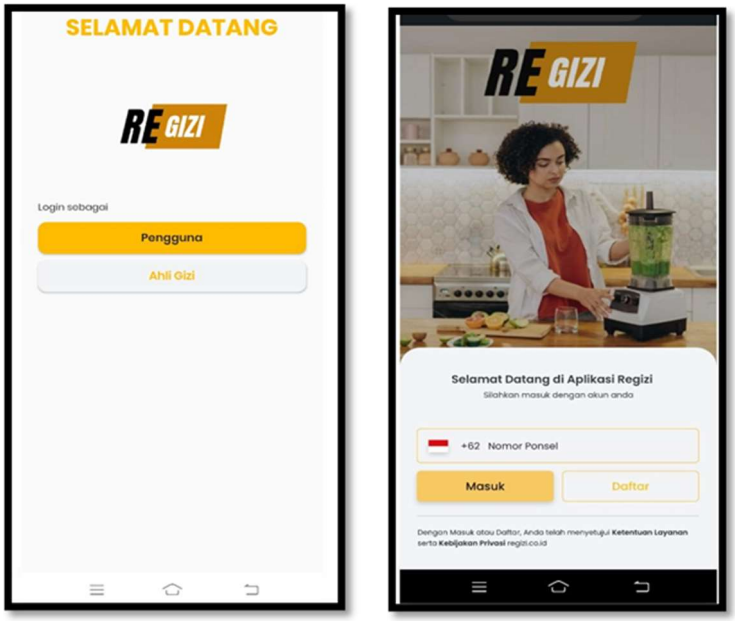

Figure 4 User Verification Page

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Figure 4 is a user verification page that functions to display the verification page when successful, it will display the user's main page.

3. Nutrition Consultation Application Display Page

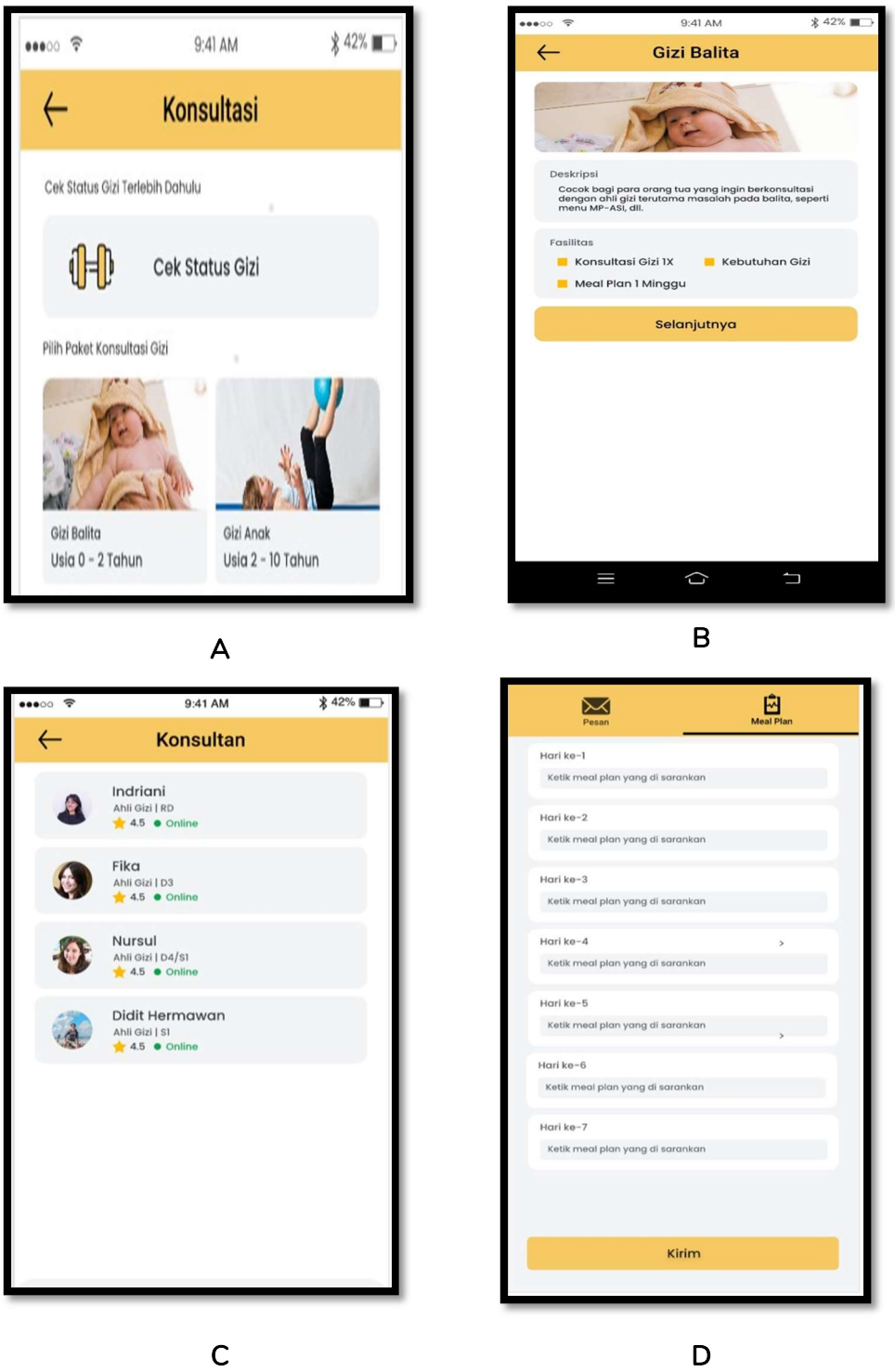

Figure 5 Nutrition Consultation

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Figure 5 is the Nutrition Consultation page where in Figure A you can choose the Type of Nutrition to be consulted as in Figure B select the Nutrition of Toddlers to be consulted and Column C will Display the Page For selection with a Nutritionist and Page D to display the Mean Plan.

4. Nutritional Status Check Display Page

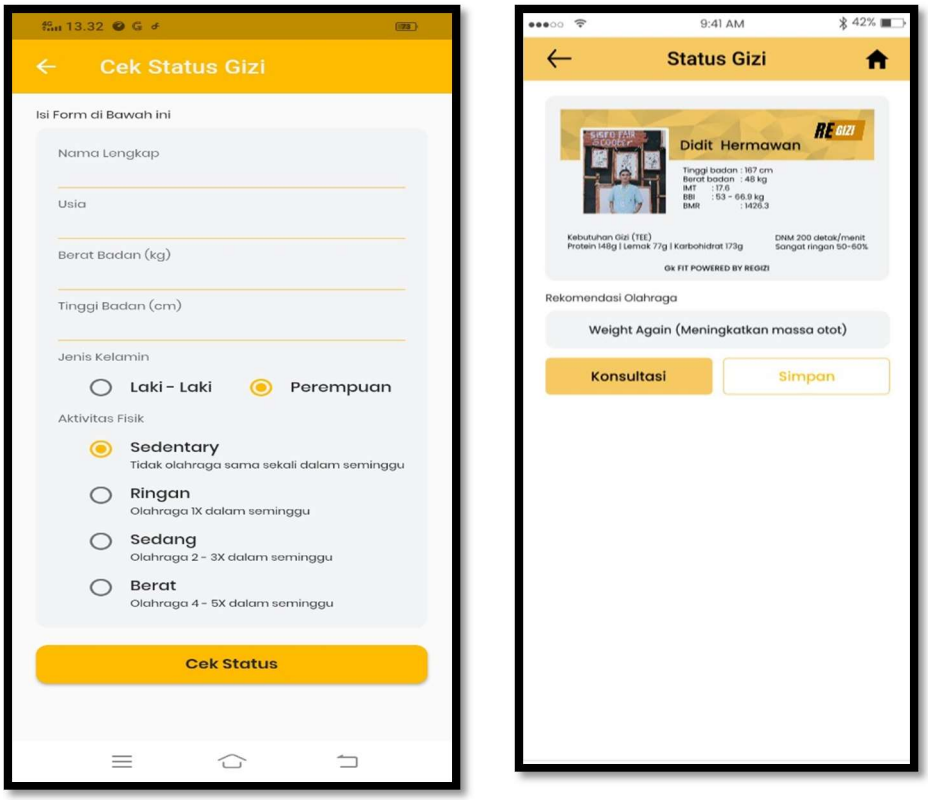

Figure 6 Check Nutritional Status

Figure 6 is a page to check nutritional status by filling out the Nutritional Status Check form, it will display the output for nutritional status.

5. Admin Home Page

Figure 7 Check Nutritional Status

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Figure 7 is the Web Admin page for the Nutrition Application (REGIZI) where when the application is run it will display the main menu of the nutrition application admin (REGIZI) which consists of several menus, namely Management, Facilities, Consultation, Advertising Data, News Data, Events and Inputs to display Videos. In the management menu, you can manage data in the form of nutritionist data, user data, and admin data to display information related to nutrition education, which can be displayed on the advertising menu and news menu, and can display nutrition education through videos.

CONCLUSION

In this first research stage, the development of nutrition applications and the initial trial of nutrition applications were carried out so that based on the development and initial trial of the application in this study, it succeeded in developing a prototype of a nutrition application called Regizi which was designed as a stunting prevention strategy. This application offers nutrition education features, nutritional status monitoring, and online consultations that can be accessed by users, especially parents and caregivers of children under five. The development process is carried out through a user-centered design approach, which involves needs identification, design, and Development. The results of the trial show that the Regizi application is able to increase users' understanding of the importance of nutrition in stunting prevention, as well as facilitate regular monitoring of children's nutritional status. The wider implementation of this application, accompanied by improvements based on advanced evaluation, is expected to contribute significantly to reducing stunting rates in Indonesia.

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