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Development of a Local Food-Based MPASI Kitchen Integrated with the Golden1000 Application to Enhance Skills of Cadres and Mothers of Infants Aged 6-12 Months in Stunting Prevention

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ABSTRACT

Background: Bungursari Health Center led stunting cases in Tasikmalaya City in 2022 due to low exclusive breastfeeding rates and poor complementary feeding practices. This study addressed these issues through PMBA training, the Golden1000 app, and posyandu kitchen development.
Contribution : PMBA training improved knowledge and skills in baby food preparation, promoted the Golden1000 app for 1000 HPK education, and fostered entrepreneurial posyandu kitchens.
Metode: Training covered complementary food preparation, Golden1000 app use, and posyandu kitchen development.
Results: The training and Golden1000 app usage improved knowledge and skills, leading to the formation of a posyandu kitchen.
Conclusion: The program enhanced complementary food preparation skills and established a lasting posyandu kitchen initiative.

1. Introduction

The prevalence of global stunting has increased significantly in recent years and Indonesia has one of the highest rates of stunting Stunting is a condition in which toddlers have less length or height when compared to their age, the impact is that children get sick easily, cognitive abilities are reduced, body functions are not balanced, posture is not optimal as an adult, and suffer economic losses. In 2022, the Bungursari Health Center ranked first in the stunting rate in Tasikmalaya City, the results of the analysis obtained low coverage of exclusive breastfeeding, the provision of complementary foods provided was fortified food, the knowledge and skills of cadres and mothers of babies were low about the procedures for processing complementary foods at home with local ingredients.

Food intake as a source of nutrition for children up to 2 years old is obtained from breast milk (breast milk) and complementary foods (MPASI). Based on WHO recommendations on correct feeding practices for infants, the fulfillment of adequate infant nutritional needs is to provide breast milk as soon as possible after giving birth (< 1 hour) and exclusively for 6 months, then supplemental feeding at the age of 6 months while continuing breastfeeding for up to 24 months. In general, there are two types of complementary foods used in the community, namely commercial or factory-made complementary foods and local or home-based complementary foods. Both types of complementary foods have advantages and disadvantages in meeting the nutritional needs of babies [7]

According to the Ministry of Health in 2019, the practice of giving complementary foods to infants aged 6-23 months to poor families in West Java, especially in Tasikmalaya City, showed that out of 3,109 families with infants, only 299 infants (9.62%) received MPASIPSI [11] Riskesdas in 2018 reported the percentage of nutritional status of infants aged 0-23 months in Tasikmalaya City, West Java Province based on the weight index according to height (BB/TB) for the very thin, thin, normal, and more by 3.7% each; 4,3%; 89,8%; and 38% [12] However, in 2019 there was an increase in the percentage for the skinny (5%) and more (16.6%) categories. In contrast, the percentage for the very thin (0.7%) and normal (77.7%) categories decreased. Based on the report, it is known that in West Java, especially Tasikmalaya City, the level of nutritional status is still quite high below normal and the rate of supplementary feeding is still low[13]

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Figure 1. Sales of Fortified Complementary Foods in the community

Previous studies have mentioned that feeding homemade complementary foods can increase diversity in food intake during the first year of life and reduce adiposity [8] An experimental study comparing commercial and government program supplementation for 90 days reported that the average weight and body length of infants aged 6–11 months were significantly higher on commercial complementary foods than on complementary foods programs [9] Complementary foods for breast milk made in factories and homes are the choice of the community in meeting the nutritional needs of babies aged 6-9 months (10). . In dealing with these problems, there needs to be education for cadres and mothers of babies on how to prepare complementary foods from home, which can be accessed at any time.

The Golden1000 application is an android-based application available online as an educational medium that contains topics about 1000 HPK for stunting prevention. In the application, there is a menu of articles containing the importance of processing complementary foods prepared from home, recipes for making high-protein complementary foods and video tutorials for cooking complementary foods. The golden 1000 application is a guide that can be accessed by cadres and baby mothers in the Bungursari area in helping to prepare complementary foods at home.

The purpose of community service activities in posyandu groups and communities in the work area of the Bungursari Health Center is to provide training to cadres and mothers of babies on how to prepare complementary foods from home, the use of the golden1000 android application as an educational medium that can be accessed online, and the establishment of a posyandu MPASI kitchen as a form of independent entrepreneurship for cadres. Community service activities as an outcome of IKU 2 are students gaining experience outside the campus by doing activities, IKU 3 is lecturers who are active outside the campus, IKU 4 has a certificate that is recognized by the world of work and industry, IKU 5 Lecturers' work is used by the community.

2. Method

This method of implementing community service can be carried out with the following steps as shown in Figure 2.

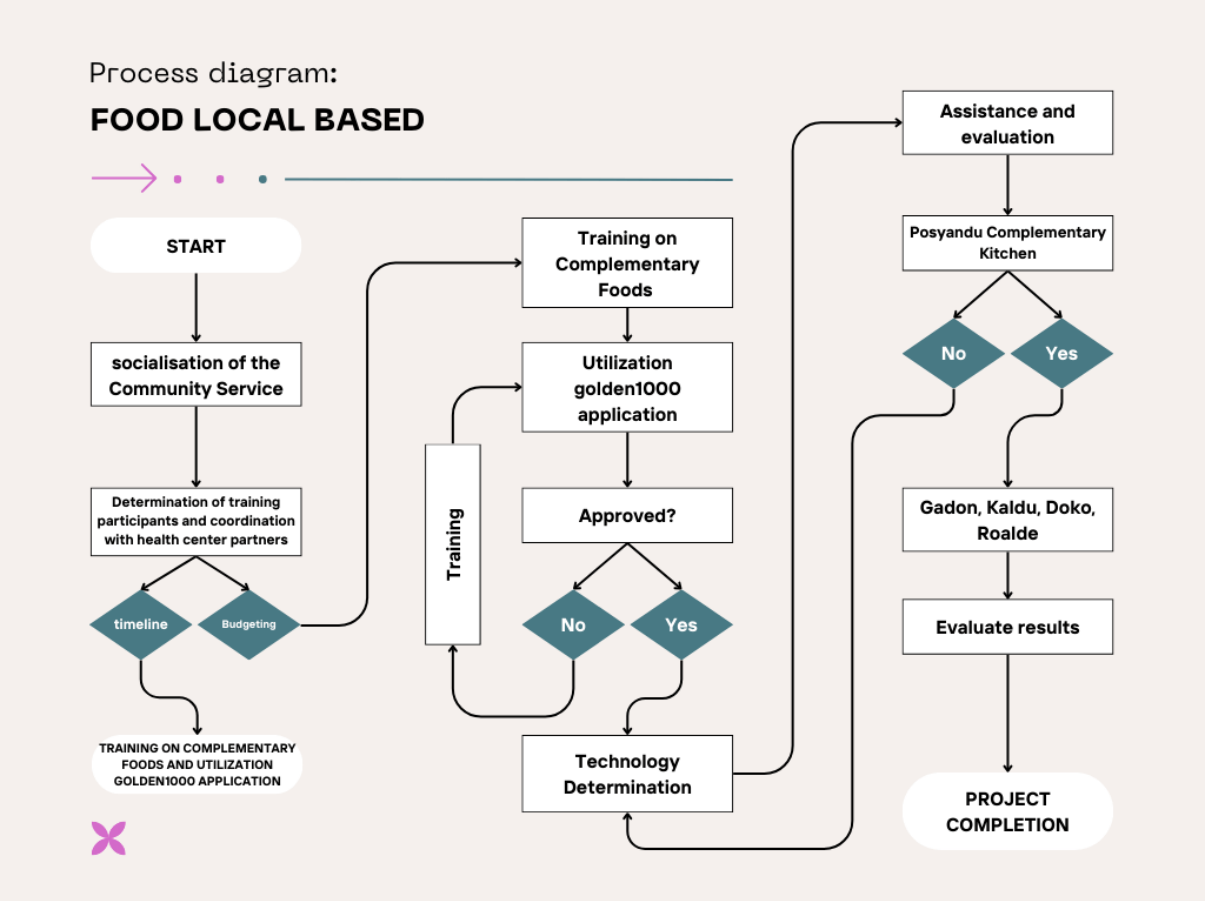

Figure 2. Flow Chart Of Community Service Activities

2.1. Preparation

Preparation for the activity was carried out at the Bungursari Health Center with the aim of socializing to cadre health center partners about the purpose of the activity, namely improving the skills of baby mother cadres in processing MPASi at home and the use of the golden1000 application for MPASI educational media. The activity plan includes timeline, cost budget, material and tool needs and activity participants.

2.2. Training

The MPASI kitchen training activity was carried out for 3 days with a total of 50 participants including cadres and baby mothers, the resource persons brought in were the perinasia licensed MPASI counselor and the nutrition field of the Tasikmalaya City Health Office, and the founder of the golden1000 application.

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2.3. Application of technology

In this activity, technology and innovation are applied, namely in the form of complementary food training to improve participants' knowledge and skills in processing complementary foods based on local food from home and the use of golden 1000 android-based applications as educational media for participants

2.4. Monitoring Evaluation

After the training activities are completed, 10 selected cadres will be appointed to manage the MPASI Kitchen, the formation of the organizational structure of the MPASI Kitchen and the explanation of their respective roles and duties. The MPASI Kitchen Team and PKM Proposers ensure the need for tools and materials to start a complementary food kitchen, compile a complementary food menu for 1 month, and select a target, namely 25 babies aged 6-12 months to be given free complementary food for 1 month with the main priority coming from RTs with poor economic status.

2.5. Program Sustainability

The operation of complementary kitchens managed by cadres and becoming independent entrepreneurs for cadres and increasing the number of users of the Golden1000 application. An evaluation was carried out to ensure the success of the MPASI Kitchen training in supporting the increase of infants given complementary foods based on local food and improving the nutritional status of infants to prevent stunting. In addition, the results of this community service can be disseminated through social media, online media and YouTube videos to expand its influence and encourage the adoption of similar technology in other health centers.

3. Result and Discussion

3.1. Preparation

This Community Service activity is in collaboration with the Bungursari Health Center of Tasikmalaya City with the target of cadres and mothers of babies aged 6-12 months. The results of the situation analysis showed that the incidence of stunting was still high, the coverage of exclusive breastfeeding was low, and the high level of MPASi fortification for infants aged 6-12 months. Providing inadequate nutrition can increase the risk of stunting in the future. The low knowledge and skills of cadres in processing complementary foods, the lack of educational media about complementary foods, are the core problems at the Bungursari Health Center related to the high incidence of stunting. In preparation for the implementation, a 3-day training activity plan was prepared, a cost budget plan, participants and resource persons for the activity consisted of a Perinasia licensed MPASI counselor, the Nutrition field of the Tasikmalaya City Health Office and the founder of the golden1000 application.

3.2 .Training

The training was carried out continuously for 3 days by conducting a pre-post to measure participants' knowledge and skills related to complementary foods. The material provided was related to stunting, 1000 HPK, the basics of processing complementary foods, the Golden1000 Application, live cooking demonstrations of complementary foods and the use of golden1000 media as an educational medium for cadres.Cadre training can see in Figure 3.

Figure 3. Cadre training activities and MPASI kitchen operations

3.3. Application of technology

The application of technology in this community service activity is training to improve participants' knowledge and skills about the basics and processing of complementary foods, then the use of the golden1000 application as an educational medium that can be used at any time related to complementary foods, namely the MPASI article menu, complementary food cooking videos. The application can see in Figure 4. The formation of complementary food kitchens managed by cadets

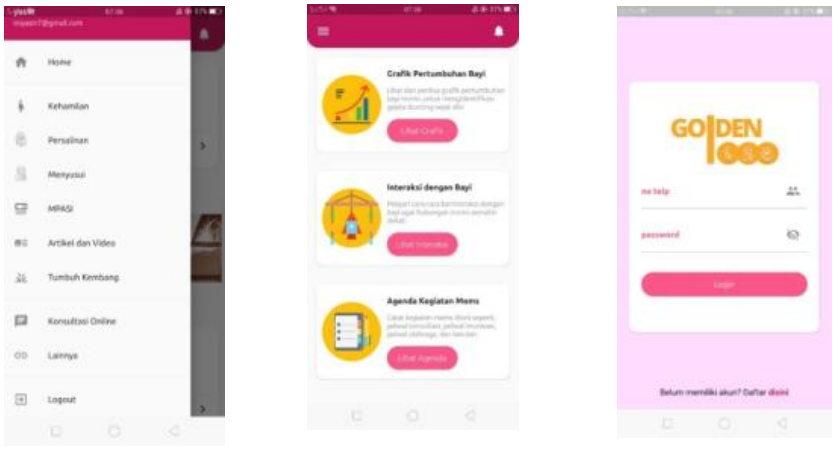

Figure 4. Golden 1000 App Menu

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Figure 5 Complementary Food Management and Complementary Products Kitchen Geulis

Improvement of Knowledge and Skills of Mothers and Cadres Based on the evaluation before and after the activity, there was an increase in knowledge and skills related to the processing of local material-based complementary foods. The following Figure 5 is the results of improving mothers' skills in processing complementary foods, measured through questionnaires given before and after training:

Tabel 1. Scores before and after training

VARIABEL	BEFORE	AFTER
A mother who understands the importance of local ingredients	60 %	90%
Mothers who are able to use the Golden1000 application	55 %	85%
Cadres who are able to provide complementary cooking guidance	50 %	80%

The community service program conducted focused on increasing knowledge and skills related to the importance of utilizing local ingredients for complementary feeding (MPASI) and the effective use of the Golden1000 application. The results, as shown in Table 1, indicate a significant improvement after the training sessions. Initially, only 60% of mothers understood the importance of using local ingredients, but this figure increased to 90% post-training. Similarly, the percentage of mothers who were able to use the Golden1000 application improved from 55% before the training to 85% afterward. Furthermore, cadres' abilities to provide proper guidance in complementary feeding preparation also showed a notable enhancement, rising from 50% to 80%. These results demonstrate the effectiveness of the training program in empowering both mothers and cadres with the necessary knowledge and practical skills to support better nutritional practices, which is crucial for preventing stunting in children. The increased scores reflect the program's success in promoting sustainable

community-based solutions through the use of technology and local resources. Use of the Golden1000 Application The use of *the Golden1000* application helps mothers and cadres in accessing information on locally sourced complementary food recipes and nutritional guidelines for stunting prevention. Most participants (85%) stated that the app is easy to use and provides practical guidance.

Tabel 2. Golden1000 Application Usage Frequency Rating Score

Frequency of Using the Golden1000 Application	(%)
Using every day	70 %
Using once a week	20 %
Not using the app	10 %

The community service program also assessed the frequency of Golden1000 application usage among mothers and cadres, as shown in Table 2. The results reveal that 70% of participants reported using the Golden1000 application daily, demonstrating high acceptance and integration of the app into their daily routines. Additionally, 20% of participants used the application once a week, indicating occasional but still purposeful engagement. However, 10% of participants did not use the application, suggesting a need for further outreach or support to ensure full utilization. These findings highlight the application's effectiveness in becoming a valuable tool for mothers and cadres in improving complementary feeding practices. The high daily usage rate signifies its practicality, accessibility, and relevance in supporting efforts to prevent stunting by providing easy-to-follow guidance on utilizing local ingredients and preparing nutritious meals. Further efforts could focus on increasing adoption among the remaining 10% to maximize the program's impact.

3.4 Monitoring, Evaluation and sustainability of the program

An evaluation was carried out to ensure the success of complementary food training and the use of the golden1000 application to partners. The community service team always maintains an open line of communication with the Bungursari Health Center regarding the implementation of activities and the impact that has been given. The existence of a complementary food kitchen that continues to operate is an indicator of the success of the program. Figure 6 can see the distribution of complementary foods. This community service program is disseminated through interesting and informative content through YouTube videos (Figure 7) and online media by highlighting key aspects.

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Figure 6. Distribution of complementary foods

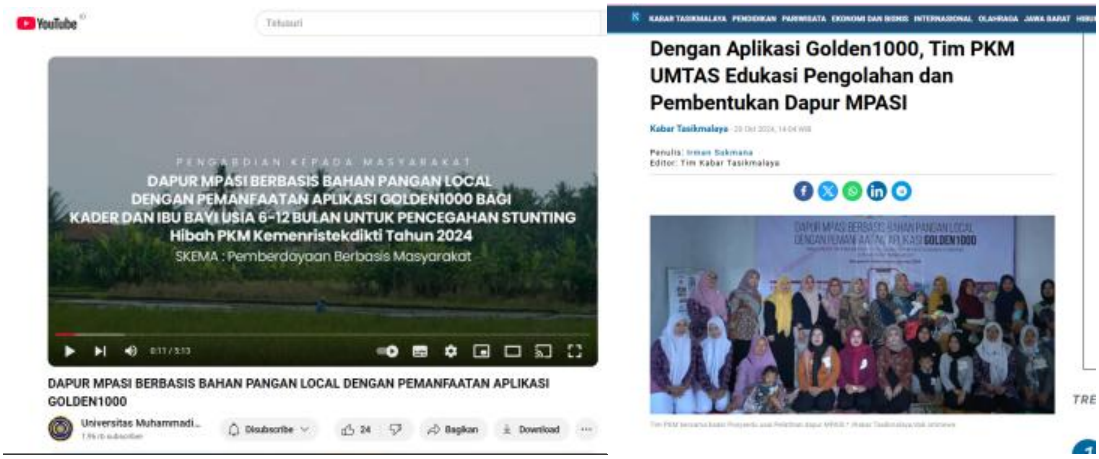

Figure 7. publications the community service

4. Conclusion

This study highlights the potential of the MPASI Kitchen training combined with the Golden1000 application to enhance cadres' and mothers' knowledge and skills in preparing locally sourced complementary feeding (MPASI). The program improved participants' competence and emphasized sustainability through the establishment of a replicable MPASI Kitchen model for other healthcare centers. The findings contribute to understanding community-based nutritional interventions, demonstrating the role of digital tools in addressing public health challenges like stunting. Despite its contributions, the study faced limitations, including a small sample size and geographic focus, which may affect generalizability. The short program duration also limited the ability to track long-term impacts on stunting prevention. Future research should conduct longitudinal studies with larger, diverse populations and explore integrating digital tools like Golden1000 into national health programs and policies. In summary, the MPASI Kitchen training and Golden1000 application effectively improved MPASI preparation skills while supporting sustainable community-based stunting prevention initiatives. This study offers a scalable model that combines local food-based interventions with digital innovation, aligning with global efforts to reduce

childhood malnutrition and providing a foundation for future research and policymaking in maternal and child health.

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