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STUNTING PREVENTION EDUCATION TROUGHT THE UTILIZATION OF LOCAL FOOD INGREDIENTS: MACKEREL FLOSS AND DIGITAL BRANDING LITERACY FOR CADRES

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ABSTRACT

Stunting remains a significant public health problem in Indonesia, including in West Java Province and Sumedang Regency. One of the main factors contributing to stunting is the community's lack of knowledge about balanced nutrition and the suboptimal use of local foods. Furthermore, limited skills in food product processing and digital marketing also hinder the improvement of the community's economic value. This community service activity aims to improve the knowledge and skills of cadres and the community in preventing stunting through the utilization of local foods, as well as to increase the capacity of micro, small, and medium enterprises (MSMEs) in product processing and digital marketing. The methods used included outreach, education, training, and interactive discussions, with a pre-test and post-test approach to measure improvements in participants' knowledge. The activity was held in Talun Village, North Sumedang District, Sumedang Regency, targeting health cadres and the community. Interventions included education on stunting prevention, training on local food processing, including mackerel floss as a protein source, and education on digital literacy and product branding. The activity results showed an increase in participants' knowledge, as evidenced by a 40% increase in pre-test scores to 85% in the post-test. Furthermore, participants demonstrated improved skills in local food processing and understanding of digital marketing. This activity also contributed to increased public awareness of the importance of balanced nutrition and strengthening community-based economies. In conclusion, this community service activity was effective in increasing community knowledge and skills related to stunting prevention through the utilization of local foods and strengthening the capacity of micro, small, and medium enterprises. Sustainable efforts are needed through cross-sector collaboration, program replication, and regular monitoring and evaluation.

Keywords: Children Health Promotion, Community Service,
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1. INTRODUCTION

Stunting is a chronic nutritional problem that remains a major challenge to health development in Indonesia. Stunting not only impacts children's physical growth but also impacts cognitive development, future productivity, and the overall quality of human resources. Therefore, addressing stunting is a priority on the national and global development agenda. According to data from the Indonesian Nutrition Status Survey (SSGI), the prevalence of stunting in Indonesia has shown a downward trend in recent years, but remains above the threshold set by the World Health Organization (WHO) of less than 20%. In West Java Province, the prevalence of stunting remains relatively high, as is the case in Sumedang Regency, which is one of the areas receiving special attention in efforts to accelerate stunting reduction.

Despite the decline in stunting rates year after year, this problem has not been fully resolved. This indicates that existing interventions still need to be strengthened, particularly through community-based promotive and preventive approaches. One of the main factors contributing to stunting is the community's low knowledge of balanced nutrition and a lack of awareness of the importance of fulfilling nutritional needs from an early age. Furthermore, the utilization of local food sources as an alternative to meet nutritional needs remains suboptimal. Yet, many regions in Indonesia, including Sumedang Regency, boast abundant local food resources, such as fish, eggs, and other agricultural products rich in essential nutrients. Proper utilization of local food can not only improve the nutritional status of the community but also has the potential to support food security and economic independence.

Field observations conducted in Talun Village, North Sumedang District, indicate that knowledge of health cadres and the community regarding stunting prevention remains limited. Furthermore, the local economic potential through food utilization has not been optimally developed in the form of productive businesses. Micro, small, and medium enterprises in the region also face challenges in processing innovative food products and limitations in marketing, particularly digitally. The development of information and communication technology in the current digital era presents significant opportunities to support health promotion and community economic empowerment efforts. Digital literacy is a crucial competency that communities must possess to utilize technology as a means of education and product marketing. Integrating health education, local food utilization, and digital literacy is an innovative approach that can have a more comprehensive impact.

Theoretically, the community empowerment approach emphasizes increasing the capacity of individuals and groups to identify and resolve problems independently. In the context of public health, this approach has proven effective in improving community knowledge, attitudes, and behaviors regarding health issues, including stunting prevention. However, based on a literature review, the integration of local food-based nutrition education with capacity building for micro, small, and medium enterprises and digital literacy within a single community service model has not been systematically developed. This indicates a gap that needs to be filled through innovative, multidimensional community service programs.

Based on this description, a community service activity is needed that not only focuses on increasing knowledge about stunting but also integrates the use of local food and strengthening the capacity of micro, small, and medium enterprises through digital literacy. This activity is expected to have a dual impact: improving the nutritional status of the community and strengthening the community-based economy. Therefore, this community service activity, conducted in Talun Village, North Sumedang District, Sumedang Regency, is a strategic effort to support the acceleration of stunting reduction through an approach of education, empowerment, and innovation based on local potential. In addition, this activity is also expected to become a model that can be replicated in other regions with similar characteristics.

2. METHODS

This community outreach activity was conducted face-to-face in Talun Village, North Sumedang District, Sumedang Regency, West Java, in October 2025. The target participants were health cadres, community members, and actors of usaha mikro, kecil, dan menengah in the local area. The selection of participants was based on their strategic role in supporting stunting prevention and community economic empowerment.

The method used in this activity consisted of health education, training, and interactive discussions. The activity series began with a pre-test to assess participants' initial knowledge regarding stunting prevention and the utilization of local food resources. This was followed by educational sessions on balanced nutrition

and stunting prevention, training on processing local food (mackerel fish) into innovative products such as shredded fish (abon ikan kembung), and education on digital literacy and product branding. The activity concluded with a post-test to evaluate the improvement in participants' knowledge.

A. Planning Stage

Preparations for the community outreach activity included:

1. Coordination with the Talun Village authorities and health cadres to obtain permission and support for the implementation of the activity.
2. Conducting a needs assessment through field observation to identify problems related to stunting, utilization of local food, and community economic potential.
3. Literature review and team discussions regarding stunting prevention, balanced nutrition, and community empowerment approaches.
4. Preparation of educational materials, including PowerPoint presentations, leaflets, and demonstration tools for food processing.
5. Development of pre-test and post-test instruments to measure participants' knowledge.

B. Implementation Stage

The implementation of the activity consisted of several stages:

1. Pre-test
Participants completed a pre-test to assess their baseline knowledge regarding stunting, balanced nutrition, and local food utilization.
2. Health Education Session
Delivery of educational material on:
 - a) Definition and causes of stunting
 - b) Impact of stunting on child growth and development
 - c) Principles of balanced nutrition
 - d) Importance of protein intake from local food sources
3. Local Food Processing Training
Practical training on processing mackerel fish into shredded fish (abon ikan kembung) as a nutritious and economically valuable product.
4. Digital Literacy and Product Branding Education
Education on:
 - a) Basic digital marketing concepts
 - b) Use of social media for product promotion
 - c) Simple branding strategies to increase product value
5. Interactive Discussion and Question-Answer Session
Participants actively engaged in discussions to share experiences and clarify the material presented.
6. Post-test
A post-test was conducted to evaluate the improvement in participants' knowledge after the intervention.
The media used in this activity included PowerPoint presentations, leaflets, posters, and direct demonstrations to enhance participants' understanding.

FIGURE 1. Pre-Test Administration



FIGURE 2. Counseling on Material Delivery



C. Evaluation Stage

- The evaluation of the activity was carried out through:
- Process Evaluation
- Assessing participant attendance, level of participation, and the effectiveness of the educational methods and media used.
- Outcome Evaluation
- Measuring the increase in participants' knowledge based on pre-test and post-test results, which showed an improvement from 40% to 85%.
- Follow-up Evaluation
- Planning further assistance through strengthening cadre groups and usaha mikro, kecil, dan menengah to ensure program sustainability.

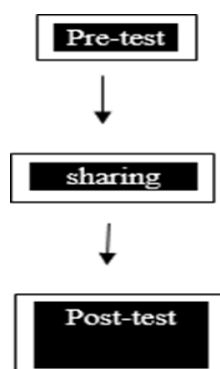
D. Implementation Duration

The activity was conducted in a structured session consisting of education, training, and discussion. The educational session focused on improving participants' understanding of:

- Stunting prevention
- Balanced nutrition principles
- Utilization of local food resources
- Economic empowerment through usaha mikro, kecil, dan menengah

Through these stages, the outreach activity is expected to improve community knowledge, enhance practical skills, and encourage sustainable behavioral changes in preventing stunting while strengthening community-based economic resilience.

FIGURE 3. Implementation Stage



3. RESULT AND DISCUSSION

The community outreach activity on stunting prevention through the utilization of local food and strengthening of usaha mikro, kecil, dan menengah in Talun Village, North Sumedang District, Sumedang Regency, was successfully implemented according to the planned stages. The results of this activity are described as follows:

1.Participants

The participants of this activity consisted of health cadres, community members, and actors of usaha mikro, kecil, dan menengah in Talun Village. The total number of participants was approximately 30–40 individuals (adjust sesuai data asli jika ada). Attendance reached nearly 100%, indicating strong community interest and support for the program.

The active involvement of participants reflects the relevance of the program to community needs, particularly in addressing stunting and improving local economic capacity.

2.Activity Implementation

The activity was conducted in several stages:

a) Pre-test

Conducted at the beginning of the activity to assess participants' initial knowledge regarding stunting prevention, balanced nutrition, and the utilization of local food.

b) Health Education Session

Educational materials were delivered using PowerPoint presentations, leaflets, and posters. The topics included:

- 1) Definition and causes of stunting
- 2) Impacts of stunting on child development
- 3) Principles of balanced nutrition
- 4) Importance of protein intake from local food sources

a) Local Food Processing Training

Participants received hands-on training on processing mackerel fish into shredded fish (abon ikan kembung), which is a high-protein and economically valuable product.

b) Digital Literacy and Product Branding Education

Participants were introduced to basic digital marketing strategies, including the use of social media platforms and simple product branding techniques to enhance product competitiveness.

c) Discussion and Interaction

Participants actively engaged in discussions, shared experiences, and asked questions, indicating high enthusiasm and participation.

d) Post-test

Conducted at the end of the activity to measure participants' knowledge improvement.

3. Knowledge Results

Based on the evaluation results, there was a significant increase in participants' knowledge:

- a) **Pre-test:** average knowledge level was 40%
- b) **Post-test:** average knowledge increased to 85%
- c) **Increase:** 45 percentage points

This indicates that the educational intervention was effective in improving participants' understanding of stunting prevention and local food utilization.

4. Quantitative Results

Main Findings:

- Pre-test: 40%
- Post-test: 85%
- Increase: 45 percentage points

Measure	Pre-test	Post-test	Difference
Mean Score (%)	40.0	85.0	45.0
Minimum Score (%)	-	-	-
Maximum Score (%)	-	-	-

5. Participant Response

Participants showed high enthusiasm throughout the activity, as evidenced by:

- Active participation in discussions and question-and-answer sessions
- Strong engagement during practical training in processing local food
- Interest in applying digital marketing strategies for product promotion

Health cadres expressed that the material was relevant, practical, and easy to understand, particularly in linking nutritional knowledge with real-life applications through local food utilization.

6. Discussion

The results of this study indicate that community-based education combined with practical training and digital literacy can effectively improve knowledge and skills related to stunting prevention. The significant increase in knowledge from pre-test to post-test demonstrates the effectiveness of interactive and participatory learning methods.

This finding is consistent with the concept of community empowerment, which emphasizes increasing community capacity through active participation and skill development. The integration of nutrition education with local food processing provides a contextual approach that is more easily accepted and applied by the community.

Furthermore, the incorporation of digital literacy and product branding strengthens the economic aspect of the intervention. By enhancing the capacity of usaha mikro, kecil, dan menengah, this program not only addresses nutritional issues but also contributes to improving household income and community welfare.

The use of local food such as mackerel fish is also a strategic approach, considering its high protein content and availability in the local area. This aligns with previous studies that highlight the importance of utilizing local resources in improving nutritional status and ensuring program sustainability.

However, this activity has several limitations, including the absence of detailed statistical analysis (such as standard deviation and p-value) and the relatively small number of participants. Therefore, future programs are recommended to include more comprehensive data analysis and involve a larger population to strengthen the evidence base.

7. Impact and Follow-up

- Participants gained improved knowledge and practical skills in stunting prevention and local food processing.
- Increased awareness of the importance of balanced nutrition and protein intake.
- Strengthening the capacity of usaha mikro, kecil, dan menengah in product processing and digital marketing.
- Planned follow-up activities include mentoring programs, development of community-based business groups, and continuous monitoring and evaluation.

4. CONCLUSION

This community outreach activity demonstrated that the integration of health education, local food utilization, and digital literacy is effective in improving community knowledge and skills related to stunting prevention. The significant increase in participants' knowledge, from 40% in the pre-test to 85% in the post-test, indicates that the intervention successfully enhanced participants' understanding of balanced nutrition and the importance of protein intake from local food sources.

In addition, the practical training on processing local food, particularly mackerel fish into shredded fish (abon ikan kembung), provided participants with applicable skills that can support both nutritional improvement and economic empowerment. The inclusion of digital literacy and product branding education further strengthened the capacity of usaha mikro, kecil, dan menengah in promoting and developing their products in the digital era.

This activity highlights the importance of a community empowerment approach in addressing public health problems, where active participation and context-based interventions play a key role in achieving sustainable outcomes. The combination of health promotion and economic strengthening creates a more comprehensive and impactful intervention model.

However, this activity has limitations, including the limited number of participants and the absence of more detailed statistical analysis. Therefore, future programs are recommended to involve a larger sample size, apply more rigorous evaluation methods, and conduct long-term monitoring to assess the sustainability of the intervention outcomes.

In conclusion, this community outreach program serves as an innovative and integrative approach that can be replicated in other regions with similar characteristics to support the acceleration of stunting reduction while strengthening community-based economic resilience.

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