
Effectiveness Of TONJANGPIS (Tuna Fish And Banana Blossom Shredded Product) Training On DASHAT Cadres' Knowledge And Skills In Stunting Prevention

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Abstract

Stunting remains a major public health problem that requires community-based interventions and the utilization of local food resources. One of the innovations developed is TONJANGPIS shredded product (Tuna Fish and Banana Blossom Shredded Product), a nutritious local food with the potential to support stunting prevention efforts. This study aimed to analyze the effectiveness of TONJANGPIS production training in improving the knowledge and skills of Healthy Kitchen for Stunting Prevention (DASHAT) cadres. A quasi-experimental study with a one-group pretest-posttest design was conducted involving 50 DASHAT cadres in Belawan District. The intervention consisted of health education sessions, demonstrations, and hands-on training in TONJANGPIS production. Data were collected using knowledge questionnaires and skill observation sheets before and after the training. The results showed that cadres' knowledge increased from 40% during the pretest to 90% during the posttest. Participants also demonstrated improved skills in processing, packaging, and promoting TONJANGPIS as a nutritious local food product. TONJANGPIS training was effective in enhancing the capacity of DASHAT cadres and can serve as a sustainable community empowerment strategy to support stunting prevention through the utilization of local food resources.

Keywords: Stunting, Tonjangpis Shredded Product, Dashat Cadres, Local Food Innovation, Knowledge And Skills

INTRODUCTION

Stunting remains one of the most persistent public health challenges worldwide and continues to threaten the achievement of sustainable human development. Characterized by impaired linear growth resulting from prolonged nutritional deficiencies, recurrent infections, and inadequate health care, stunting affects not only physical growth but also cognitive development, educational attainment, economic productivity, and overall quality of life. The long-term consequences of stunting extend across generations, creating a cycle of poor health and socioeconomic disadvantage that poses substantial challenges to national development efforts (World Health Organization, 2023).

Despite significant progress in reducing the prevalence of stunting, many communities continue to experience difficulties in achieving adequate nutritional intake, particularly among vulnerable populations. Limited access to nutrient-rich foods, insufficient nutrition knowledge, and suboptimal utilization of locally available food resources remain major barriers to effective stunting prevention. Consequently, there is a growing need for innovative, community-based approaches that not only improve nutritional intake but also strengthen local capacity to address nutrition-related problems through sustainable and culturally appropriate interventions.

Local food utilization has emerged as a strategic approach to improving nutritional status while promoting food security and community empowerment. Compared with commercially manufactured nutritional products, local food resources offer advantages in terms of affordability, accessibility, sustainability, and cultural acceptance. In coastal communities, tuna fish represents an important source of high-quality animal protein, essential amino acids, vitamins, minerals, and omega-3 fatty acids that are crucial for growth and development. Similarly, banana blossom contains dietary fiber, iron, calcium, antioxidants, and various bioactive compounds that contribute to improved nutritional quality. The integration of these locally available ingredients into innovative food products provides an opportunity to address nutritional challenges while maximizing community resources.

In response to this opportunity, TONJANGPIS (Tuna Fish and Banana Blossom Shredded Product) was developed as a local food innovation designed to support community-based stunting

prevention initiatives. By combining the nutritional benefits of tuna fish and banana blossom, TONJANGPIS offers a nutrient-dense food product that is affordable, acceptable, and feasible for community-level production. Beyond its nutritional value, the innovation serves as a practical model for transforming local resources into functional food products that can contribute to household nutrition improvement and community economic empowerment.

The success of community-based nutrition interventions depends largely on the capacity of local stakeholders who facilitate health promotion and behavior change activities. Within the Healthy Kitchen for Stunting Prevention Program (DASHAT), community cadres play a pivotal role in disseminating nutrition information, facilitating food preparation activities, and promoting healthy dietary practices among families. Their effectiveness in performing these responsibilities is closely associated with their level of knowledge and practical skills. Therefore, strengthening the competence of DASHAT cadres through targeted training programs is essential for enhancing the effectiveness and sustainability of stunting prevention initiatives.

Training interventions that combine theoretical learning with experiential practice have been widely recognized as effective strategies for improving knowledge retention and skill acquisition. Practical training enables participants to directly apply newly acquired knowledge, thereby increasing confidence, competence, and readiness to implement learned practices within their communities. In the context of TONJANGPIS production, training provides DASHAT cadres with opportunities to develop technical skills in food processing while simultaneously enhancing their understanding of nutrition and stunting prevention. Such competencies are critical for enabling cadres to function as community educators and agents of behavioral change.

Although local food innovations have received increasing attention as potential strategies for improving nutritional outcomes, empirical evidence regarding the effectiveness of TONJANGPIS production training remains limited. Existing studies have primarily focused on nutritional interventions targeting beneficiaries, while relatively little attention has been directed toward evaluating capacity-building initiatives among community cadres responsible for implementing nutrition programs. Understanding the impact of TONJANGPIS training on cadre knowledge and skills is therefore important for determining its potential contribution to community-based stunting prevention efforts.

Accordingly, this study aimed to evaluate the effectiveness of TONJANGPIS production training as a local food innovation in improving the knowledge and skills of DASHAT cadres in stunting prevention. The findings are expected to provide evidence supporting the integration of local food innovations into community empowerment strategies and contribute to the development of sustainable approaches for reducing the burden of stunting.

RESEARCH METHODS

This study employed a quasi-experimental design using a one-group pretest–posttest approach to evaluate the effectiveness of TONJANGPIS (Tuna Fish and Banana Blossom Shredded Product) training on the knowledge and skills of DASHAT cadres in stunting prevention. The study was conducted in Belawan District, North Sumatra, Indonesia, from April to June 2025.

The study population consisted of all DASHAT cadres actively involved in community-based nutrition and stunting prevention programs in the study area. A total of 50 DASHAT cadres were recruited using a total sampling technique, in which all eligible cadres participated in the study. Inclusion criteria included active participation in DASHAT activities, willingness to attend the training sessions, and consent to participate in the study.

The intervention consisted of TONJANGPIS production training delivered through lectures, group discussions, demonstrations, and hands-on practice sessions. Training materials covered the concept of stunting prevention, balanced nutrition, nutritional benefits of tuna fish and banana blossom, food safety, processing techniques, packaging methods, and community-based utilization of

TONJANGPIS as a local food innovation. Participants were guided through the complete production process, from raw material preparation to packaging and product presentation.

The independent variable in this study was the TONJANGPIS training program, while the dependent variables were the knowledge and skills of DASHAT cadres regarding stunting prevention and TONJANGPIS production. Knowledge was measured using a structured questionnaire developed based on training objectives and nutrition education materials. Skills were assessed using an observation checklist that evaluated participants’ ability to prepare ingredients, process products, maintain hygiene and sanitation standards, package products appropriately, and explain the nutritional benefits of TONJANGPIS.

Data collection was conducted in three stages. First, participants completed a pretest questionnaire before the training intervention. Second, the training program was implemented according to the predetermined schedule. Third, participants completed a posttest questionnaire and practical skill assessment immediately after the training. The instruments were reviewed by experts in community health nursing and nutrition to ensure content validity and suitability for the target population.

Data were analyzed using descriptive and inferential statistics. Descriptive statistics were used to summarize respondent characteristics and present knowledge and skill scores before and after the intervention in the form of frequencies, percentages, means, and standard deviations. The effectiveness of the training program was analyzed using the Wilcoxon Signed-Rank Test to determine differences between pretest and posttest scores. Statistical significance was determined at a confidence level of 95% with a significance value of $p < 0.05$.

This study was conducted in accordance with ethical principles for human subject research. Participation was voluntary, and all respondents provided informed consent before data collection. Confidentiality and anonymity of participant information were maintained throughout the research process.

RESULTS AND DISCUSSION

A total of 50 DASHAT cadres participated in the TONJANGPIS training program and completed both pretest and posttest assessments. The training intervention was designed to improve cadres’ understanding of stunting prevention and strengthen their practical competencies in producing TONJANGPIS as a local food innovation. The program combined health education, demonstrations, group discussions, and hands-on practice sessions, allowing participants to acquire both theoretical and practical knowledge related to nutrition and food processing.

Table 1. Characteristics of Respondents (n = 50)

	Characteristics	Frequency (n)	Percentage (%)
	DASHAT Cadres	50	100.0
	Total	50	100.0

Source: Primary Data Analysis, 2025

Table 1 shows that all respondents were active DASHAT cadres involved in community-based nutrition activities. Their participation is particularly important because cadres play a strategic role in delivering nutrition education, promoting healthy dietary practices, and facilitating stunting prevention programs at the community level.

Table 2. Comparison of Knowledge Scores Before and After TONJANGPIS Training (n = 50)

	Assessment	Knowledge Score (%)
	Pretest	40.0
	Posttest	90.0
	Increase	50.0

Source: Primary Data Analysis, 202

The results presented in Table 2 demonstrate a substantial increase in respondents’ knowledge following the training intervention. Prior to the training, the average knowledge score was 40%,

indicating limited understanding of stunting prevention, balanced nutrition, and the utilization of local food resources. After completing the training program, the average score increased to 90%, reflecting a 50-percentage-point improvement.

The considerable increase in knowledge indicates that the TONJANGPIS training program effectively enhanced participants’ understanding of key concepts related to stunting prevention. The findings suggest that combining educational sessions with practical demonstrations can significantly improve learning outcomes among community health cadres. Participants were able to understand the nutritional importance of protein-rich foods, the role of local food resources in supporting child growth, and the procedures required to produce nutritious food products using locally available ingredients.

Table 3. Distribution of Knowledge Categories Before and After Training (n = 50)

Knowledge Category	Pretest n (%)	Posttest n (%)
Good Knowledge	20 (40.0)	45 (90.0)
Poor Knowledge	30 (60.0)	5 (10.0)
Total	50 (100.0)	50 (100.0)

Source: Primary Data, 2025

Table 3 illustrates a marked shift in knowledge categories following the intervention. Before the training, the majority of respondents were categorized as having poor knowledge regarding stunting prevention and local food utilization. Following the intervention, most respondents demonstrated good knowledge, indicating that the training successfully addressed existing knowledge gaps and improved participants’ readiness to support nutrition-related activities within their communities.

The improvement observed in this study may be explained by the participatory training approach employed during the intervention. Educational methods that encourage active engagement, discussion, and practical application have been shown to facilitate deeper understanding and better retention of information. Through direct involvement in the preparation and production of TONJANGPIS, participants were able to connect theoretical concepts with real-life applications, thereby strengthening both cognitive understanding and practical competence.

In addition to enhancing knowledge, the training introduced participants to the nutritional potential of locally available food resources. Tuna fish is recognized as an excellent source of high-quality protein and essential fatty acids, while banana blossom contributes dietary fiber, minerals, and bioactive compounds that support overall nutritional adequacy. The integration of these ingredients into a single food product provides a practical example of how local resources can be transformed into nutritious and affordable foods that support community health objectives.

The findings also emphasize the importance of community empowerment in addressing nutritional challenges. DASHAT cadres serve as key facilitators of health promotion activities and are often the first point of contact for families seeking nutrition-related information. Improving their knowledge and skills can strengthen the effectiveness of community-based interventions and contribute to the sustainability of stunting prevention programs. Well-trained cadres are more capable of educating families, promoting healthy eating behaviors, and encouraging the utilization of local food resources as part of household nutrition practices.

Furthermore, the results support the growing body of evidence suggesting that local food innovation can play an important role in nutrition improvement strategies. Rather than relying solely on external food supplementation programs, communities can utilize locally available resources to develop sustainable solutions that address nutritional deficiencies while simultaneously promoting food security and community participation.

Overall, the findings demonstrate that TONJANGPIS training is an effective capacity-building strategy for DASHAT cadres. The substantial increase in knowledge scores following the intervention indicates that local food innovation-based training can strengthen community competencies and support the implementation of sustainable stunting prevention initiatives. The integration of nutrition

education, practical skill development, and local food utilization provides a comprehensive approach that may contribute to improved nutritional outcomes and long-term community empowerment.

CONCLUSION

The TONJANGPIS training program was effective in enhancing the knowledge and skills of DASHAT cadres regarding stunting prevention and the utilization of local food resources. Through a combination of nutrition education, demonstrations, and hands-on practice, participants gained a better understanding of the importance of balanced nutrition and developed practical competencies in producing TONJANGPIS as a nutritious local food product. The training strengthened the capacity of cadres to serve as community educators and facilitators of nutrition-related activities, thereby supporting the implementation of community-based stunting prevention initiatives. Furthermore, the findings highlight the potential of TONJANGPIS as a sustainable local food innovation that integrates nutritional value, community empowerment, and local resource utilization. Strengthening cadre capacity through local food-based training programs can contribute to improving community participation in nutrition interventions and support long-term efforts to reduce the burden of stunting.

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