

## Implementation of Pinggan Adintaku Nutrition Education for Elementary School Students

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### Abstract

Konawe District in Southeast Sulawesi Province, is one of the districts with a significant burden of malnutrition for school-age children and adolescents. As a response to this, we developed a nutrition education program for school children. Pinggan Adintaku nutrition education is an educational program that combines face-to-face counseling and educational games. The program aims to equip students with knowledge and skills in healthy food selection for themselves, which is expected to have a significant impact on their health and academic performance. The primary medium used was the School Children's Nutrition Diary module which was designed to be age and culture appropriate in the area where the program was implemented. Activities were carried out from August to September 2023 centered at Bajo Indah Elementary School (SD) in Soropia District, Konawe Regency, Southeast Sulawesi. Participants totaled 18 people, consisting of 17 5th grade students, and 1 class teacher. Qualitative evaluation results indicate that almost all aspects of Pinggan Adintaku nutrition education are effective, however, the School Children's Nutrition Diary module needs to be further developed by adding topics and narratives so that it becomes a complete and informative module according to the needs of school children.

**Keywords:** Malnutrition, Nutrition education, School-age children.

### Abstrak

Kabupaten Konawe di Provinsi Sulawesi Tenggara, merupakan salah satu kabupaten dengan beban malnutrisi yang cukup signifikan untuk kelompok anak usia sekolah dan remaja. Sebagai respon atas hal tersebut, maka kami mengembangkan program edukasi gizi pada anak sekolah. Edukasi gizi Pinggan Adintaku merupakan program edukasi yang mengkombinasikan penyuluhan tatap muka dan games edukatif. Program ini bertujuan untuk membekali siswa dengan pengetahuan dan keterampilan dalam pemilihan makanan sehat untuk dirinya, yang diharapkan akan berdampak signifikan pada kesehatan dan kinerja akademik mereka. Media primer yang digunakan adalah modul Diari Gizi Anak Sekolah yang dirancang sesuai dengan umur dan budaya di area tempat program dilaksanakan. Kegiatan dilaksanakan dari bulan Agustus sampai dengan September 2023 yang dipusatkan di Sekolah Dasar (SD) Bajo Indah di Kecamatan Soropia, Kabupaten Konawe, Sulawesi Tenggara. Peserta berjumlah 18 orang, yang terdiri dari siswa kelas 5 sebanyak 17 orang, dan guru kelas 1 orang. Hasil evaluasi secara kualitatif mengindikasikan bahwa hampir semua aspek dalam edukasi gizi Pinggan Adintaku adalah efektif, Namun, modul Diari Gizi Anak Sekolah perlu lebih dikembangkan dengan menambah topik dan narasi sehingga menjadi modul yang lengkap dan informatif sesuai dengan kebutuhan anak sekolah.

**Kata Kunci:** Malnutrisi, Edukasi gizi, Anak usia sekolah

### INTRODUCTION

Indonesia faces complex malnutrition challenges, including undernutrition such as stunting and wasting, micronutrient deficiencies resulting in conditions such as anemia, and overnutrition leading to obesity. Based on the 2018 Basic Health Survey data, an estimated 30% of children under the age of 5 are stunted, and 10% are wasted. Simultaneously, the incidence of obesity is also creeping up in the school-age group and adolescents with a prevalence of 20% and 14%. In addition, anemia affects 25% of adolescent girls and 14% of adolescent boys (Ministry of Health, 2018a;

UNICEF, 2019)..

Southeast Sulawesi (Sultra) is a province with significant *triple malnutrition* rates. Based on data from the Indonesian Nutrition Status Survey (SSGI) in 2022, the prevalence of stunting was 27%, wasting was 8.7%, and obesity was 2.6%. For micronutrient deficiencies, the latest data is not yet available, but it can be seen using a proxy indicator of micronutrient adequacy, namely minimum dietary diversity, which only reaches 52.5%. This means that almost half of children under five in Southeast Sulawesi do not have adequate micronutrient intake. Although this 2022 figure

shows a positive trend of decreasing malnutrition at the provincial level compared to 2021, several districts in Southeast Sulawesi actually show an increasing trend of malnutrition burden, including Konawe District. (Indonesian Ministry of Health, 2022).

In Konawe District, the prevalence of stunting among children under five has increased from 26.2% in 2021 to 28.3% in 2022. This area also has an under-five obesity rate that exceeds the obesity prevalence of Southeast Sulawesi province, which is 3% in 2022. Malnutrition does not only occur in the under-five group, but also in the school-age children group (5-12 years). In this group, the prevalence of stunting and obesity is 32.7% and 4.4% respectively. (Indonesian Ministry of Health, 2022) .

In response to the high rate of triple malnutrition in Konawe Regency, we developed the Healthy Family Program Free of Obesity, Stunting, and Anemia (Lugas Berstamina). One of the components in the *lugas berstamina* program is to conduct nutrition education in schools. This program aims to equip students with knowledge and skills in healthy food selection for themselves, which is expected to have a significant impact on their health and academic performance.

## IMPLEMENTATION METHOD

### Implementation Time, Location, and Target

The implementation of nutrition education was carried out from August to September 2023. The activity was centered at Bajo Indah Elementary School (SD) in Soropia District, Konawe Regency, Southeast Sulawesi. The distance from the activity location to the Regency capital is approximately 83 km. (Central Bureau of Statistics, 2020).

There were 18 participants, consisting of 17 5th grade students and 1 class teacher. For the students, the aim was to provide knowledge and skills in the selection of healthy foods which are expected to be translated into good eating practices. For teachers, the aim was to provide skills in measuring nutritional status parameters and how to classify them.



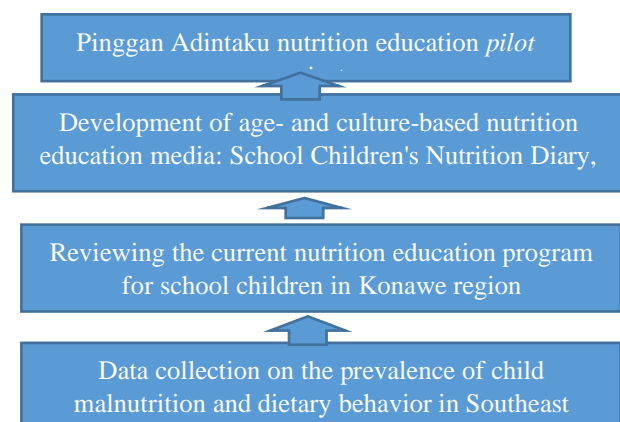
Map of Bajo Indah Village, Soropia District, Konawe Regency

## METHODS

To develop and implement nutrition education programs for school-age children, we use a structured approach based on the needs of the participants and the community context. The educational activities consist of 3 stages, namely:

1. Pinggan Adintaku nutrition education class for students and teachers. *Pinggane adintaku*, which means my plate, is taken from the language of the Bajo tribe who are indigenous to the program implementation location.
2. Fill My Plate and Jump Left Jump Right Games
3. Activity evaluation

The flow of program implementation can be seen in the following chart.



Framework for the Development of Pinggan Adintaku Nutrition Education

## RESULTS AND DISCUSSION

The Pinggan Adintaku nutrition education class is an education program that combines face-to-face counseling and educational games. Face-to-face counseling uses the School Children's Nutrition Diary module as the main media and posters and banners as secondary media to increase students' understanding of the topics presented in the education class. This module is a development of the Indonesian Ministry of Health's guidelines for the consumption of balanced nutrition and the contents of my plate. (Indonesian Ministry of Health, 2018b). The module, both in content and design, was adapted to the target age and local culture. To attract students' attention, the module design is made colorful and uses the characters of elementary school children. To adapt to the local culture, the food examples provided are foods that are available at the program location.

There are 6 topics namely: 1. Why I need nutritious food, 2. Obesity, stunting, and anemia: causes and effects, 3. Food pyramid: 5 food groups for school-age children, 4. Pinggan adintaku: to prevent obesity, stunting, and anemia, 5. Let's move, let's be healthy, and 6. Monitoring the growth of school-age children. Topics can be seen in figure 2 below.

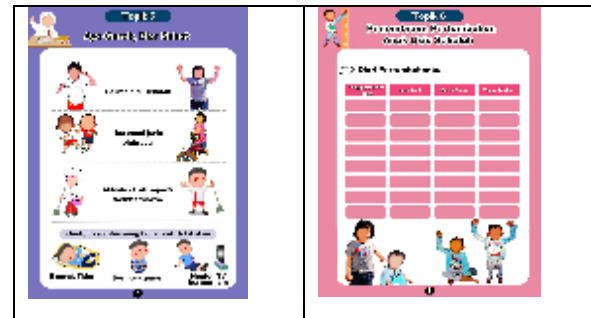


Figure 2: School Child Nutrition Diary Module

Isi Piringku is an educational game that aims to increase students' knowledge about food groups and choose healthy food for one-time meals. The media used in this game is a cartoon plate and a set of food picture cards. Students are divided into 3 groups to choose and take the food they will consume according to a balanced portion of food. After the plate is filled with food, each group will explain what foods are taken as well as the reasons for choosing these foods. At the end of the game, we will conclude the suitability of the types of food they take with the concept of the contents of my plate and balanced nutrition. The group whose plate contains 4 types of food, namely staple foods, proteins, fruits and vegetables will be the winner and get a prize.



Properties used in educational games

Another game that was given was Lompat Kanan Lompat Kiri. The way to play is that students must jump according to the direction of the game guide given by the guide, if the guide mentions healthy snacks (for example bread, milk, fruit, etc.) then students must jump to the right, if it is mentioned that the types of snacks that are bad for health (candy, chocolate, sweet cakes, etc.) then students must step to the left. This game will help students remember the

healthy and bad types of food and encourage students to exercise.

Various school-based nutrition education interventions using a combination of age- and culture-appropriate media conducted in various countries have been shown to increase children's knowledge about healthy food and also increase the self-efficacy of education participants. (Angeles-Agdeppa et al., 2019; Effendy et al., 2020; Meiklejohn et al., 2016; Salem & Said, 2018; Zaki et al., 2019).. For example, research conducted by Kameshwary Raikar et al (2020) concluded that a nutrition class intervention using flipcharts media containing 10 nutrition topics relevant to adolescents was able to improve the knowledge of nutrition class participants. (Raikar et al., 2020).. Another study conducted by Weybright et al using the "teenagers teach teenagers" method concluded that this method was able to improve the knowledge and healthy eating behavior of the intervention participants. (Yip et al., 2016). Furthermore, Moore et al (2003) using the online program Color My Pyramid, which was developed from the USDA food pyramid, also concluded a positive effect of nutrition education on participants' knowledge. (Moore et al., 2009).

In the final stage of the program, a qualitative evaluation was conducted to assess the implementation and media used in the nutrition education classes. The qualitative evaluation concluded that almost all aspects of the Pinggan Adintaku nutrition education program were effective. Furthermore, the benefits of nutrition education were not only felt by students in the pilot classes, but also by teachers, as recorded in the following statement:

"I just found out that a child's height and weight can be used to determine whether a child is obese or not".

There are several improvements recommended for this program. First, the school children's nutrition diary module which is the main media in the nutrition education class needs to be further developed by adding topics and narratives so that it becomes a complete and informative module according to the needs of school children. Development of the module by including topics on various types of nutrients

needed for school-age children, the dangers of unhealthy snacks, and knowledge evaluation in the form of games. Secondly, the intervention should be conducted in all grade levels from grade 1 to 6 and given special learning hours for nutrition education classes. Third, nutrition education classes need to be combined with nutrition classes for parents, in this case mothers as the main decision makers in terms of providing food at home. Without involving parents, nutrition education for school-age children may only change knowledge but not practice.

## CONCLUSIONS AND SUGGESTIONS

In general, almost all aspects of nutrition education classes are effective. Nutrition education classes should be integrated into the elementary school curriculum from grade 1 to grade 6 so that it can be a strong foundation for good eating behavior in adulthood.

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