



THE EFFECT OF THE SCHOOL NUTRITION PROGRAM (NGTS) ON THE NUTRITIONAL STATUS OF PRIMARY SCHOOL STUDENTS IN CIMAHY CITY

Winda Novita Ramadhan^{1*}, Millyantri Elvandari², Mona Fitria³, Witri Priawantiputri⁴

^{1,2} Program Studi Gizi, Fakultas Ilmu Kesehatan, Universitas Singaperbangsa Karawang,
Jl. HS.Ronggo Waluyo, Puseurjaya, Telukjambe Timur, Karawang, Jawa Barat 41361, Indonesia

Email: wnovita170@gmail.com

^{3,4} Jurusan Gizi, Poltekkes Kemenkes Bandung,
Jl. Babakan Loa, Pasirkaliki, Kec. Cimahi Utara, Kota Cimahi, Jawa Barat 40514, Indonesia

Abstrak

As a form of support for the nutritional concerns of school-age children, SEAMEO RECFON initiated a flagship program for the development plan for the next five years called Nutrition Goes to School (NGTS). The study aims to see how the impact of the NGTS program on the nutritional status of elementary school students. This study used a cross sectional design. By using two sample groups, namely the school group that ran NGTS for two years and the Non-NGTS school group. Both sample groups have the same characteristics, namely private schools, and both are located in Cimahi city. Based on the results of sample determination, after conducting several sampling stages with quota sampling. Then obtained a minimum sample size of 100 students from each group with a total sample size in this study of 200 elementary school students. Furthermore, the data were tested with an independent t-test, the results showed that there was a significant difference between the mean value of nutritional status (IMT / U) in the school group with the NGTS program and the NGTS Non-Program with a p-value = 0,004 ($p < 0,005$). These results are in line with the student nutritional status data found in this study, where undernutrition and overnutrition were much higher in Non-NGTS schools compared to NGTS schools. This shows that there is an effect of the NGTS program on the nutritional status of primary school students.

Keywords: Nutrition Goes to School, Nutritional Status, School-Age Children

Introduction

Children are the next generation and investment of the Indonesian state in carrying out development towards a developed country and being able to compete at the global level. Growth and development in children is a characteristic of a good generation so as to create a smart, healthy, and productive person. [1]. This can be supported by adequate food needs to achieve optimal nutritional status [2]. Fulfillment of nutritional adequacy for school-age children must be sorted out appropriately. This is because school-age children are one of the groups that are vulnerable to nutritional problems [3]. Lack of intake can affect the nutritional status of children [4]. At this age there is also motoric development, and the formation of body functions, as well as emotions that can affect the personality and self-confidence of children [5].

According to the World Health Organization (WHO), the age of school children ranges from 7-15 years old. The age of school children in Indonesia itself generally has an age range of 7-12 years. Where at the age of the body requires more energy intake than other needs, the energy needed reaches 80-90 kcal / kgBB / day with the need for protein intake of 1 gram / kgBB / day [6]. This amount of need is due to school-age children who do more activities that require a large amount of energy. [4].

However, the 2018 Basic Health Research (RISKESDAS) showed that nutritional problems in school-age children were 9,3% underweight, 20,6% overweight, and 23,6% short [7].

School-age children are a transition period from child to adult so they are at high risk of nutritional problems [8]. Child apathy, communication difficulties and other developmental disorders are among the short-term risks [9]. There are also risks that can occur, namely a decrease in the child's Intelligence Quotient, the occurrence of cognitive impairment, weakening sensory functions, difficulty controlling and understanding things, and resulting in a decrease in the child's learning achievement. [10].

In support of school-age children's nutrition, Southeast Asian Ministers of Education Organization (SEAMEO) the Regional Centre for Food and Nutrition (RECFON) initiated a flagship program in its five-year development plan called Nutrition Goes to School (NGTS). SEAMEO RECFON believes that proper nutrition education to the younger generation can create good opportunities and enable them to respond to the demands of the Industrial Revolution 4.0 and adapt to the vision of Society 5.0. This program is expected to respond and create students can determine healthier and more nutritious intake and can be available in and around the school. The program is also expected to ensure that students have access to safe, affordable, locally available and nutritious food supplies, such as clean water, as well as learning materials and facilities conducive to learning [11].

The program also has a practical and easy-to-implement implementation to create a conducive environment for students to adopt good health and nutrition habits in schools. SEAMEO RECFON also created an information system to facilitate the NGTS program with the creation of a communication platform to share, monitor and evaluate program experiences and learnings for eventual improvement and scale-up. The NGTS program is expected to create AWESOME students which stands for active, well-nourished, and smart of me which means active, well-nourished, and smart students. There is a decline in physical abilities in school-age children, with a range of thin students at 9.3% and short students at 23,6% [12]. Looking at the background above, this study was conducted to see if there is an effect of the Nutrition Goes To School (NGTS) program on the nutritional status of school-age children.

Method

This type of research is quantitative with nutritional status measured through IMT/U, using a cross sectional design with the aim of seeing whether there is an influence and impact of the NGTS program on the nutritional status of students at school. This study was conducted in Cimahi City with two groups of elementary schools, namely elementary schools that implemented NGTS for approximately 2 years and a group of elementary schools that did not implement the NGTS program with the same school characteristics criteria, namely program and non-program schools are private schools, and are schools located in Cimahi City. Data collection in this study was carried out from March to May 2024.

Based on the results of sample determination, after conducting several sampling stages with quota sampling, namely: (1) grouping the population into subgroups; (2) Determine the allotment of each subgroup as a representative of the population; (3) Determination of subjects based on subgroups; (4) ensuring the sample represents the entire population. Then the minimum sample size is obtained at 100 students from each group. So that the total sample is 200 students.

Sample criteria in this study, the sample can be included: (1) Elementary school students in grades 2-6; (2) Active students at the school for at least 1 year; (3) Willing to take Height and Weight measurements. Samples were excluded if: (1) There are physical abnormalities; (2) Not present during the measurement so that they do not have BMI data.

The data collected in this study looked at nutritional status through IMT / U data, age data obtained through collecting the date of birth of students in the IMT measurement sheet. Calculation of

quantitative analysis data with SPSS, then testing differences in nutritional status of school groups that run NGTS and non-NGTS is tested using an independent t-test. Calculation of students' nutritional status by determining z-scores using the WHO AnthroPlus 2007 program.

Result

The characteristics of the respondents include gender, age, and class

The results of the univariate analysis can be seen in the table below.

Table 1. Characteristics of Respondents

Characteristic	School Groups			
	NGTS		Non-NGTS	
	n	%	n	%
Gender:				
Man	56	56	73	73
Woman	44	44	28	28
Age:				
8-9 Years	42	42	41	41
10-11 Years	50	50	55	55
11-12 Years	8	8	4	4
Class:				
2	15	15	17	17
3	27	27	24	24
4	30	30	32	32
5	20	20	23	23
6	8	8	4	4

Source: Primary Data, 2024

Table 1 shows that the group of primary school students running the NGTS program had 56 (56%) female students and 44 (44%) male students, while in the NGTS non-program school group there were 72 (72%) female students and 28 (28%) male students. Most respondents in the NGTS school group were aged 10-11 years old (50%), while most respondents in the NGTS non-program school group were aged 10-11 years old (55%). While the most respondents in the school group with the NGTS program were grade 4 students (30%), and the respondents in the non-NGTS school group were mostly grade 4 students (32%).

The frequency distribution of respondents based on nutritional status is as follows.

Table 2. Nutritional Status

Nutritional Status	School Groups			
	NGTS		Non-NGTS	
	n	%	n	%
Undernutrition	11	11	36	36
Normal	82	82	53	53
More Nutrition	7	7	11	11

Source: Primary Data, 2024

Table 2 illustrates the data on the nutritional status of students from schools running the NGTS program and non-program NGTS. Based on nutritional status, the majority of students from the NGTS program group had more students with normal nutritional status, namely 82 students (82%) compared

to students with normal nutritional status from the NGTS non-program group, which amounted to 53 people (53%).

The Effect of the School Nutrition Program (NGTS) on the Nutritional Status of Primary School Students

Group	Min	Max	Mean	<i>p-value</i>
NGTS	13,12	23,8	18,05	0,004
Non-NGTS	12,84	24,17	16,84	

Table 3 describes the nutritional status of students based on IMT/U, showing the difference in the average value of nutritional status in schools with the NGTS program and non-NGTS program. The NGTS school group has an average IMT/U value of 18,05 with a minimum value of 13,12 and a maximum of 23,8. While the non-program NGTS school group had an average IMT/U value of 16,84 and a minimum of 12,84 and a maximum of 24,17.

The results of the independent t-test showed a significant difference between the mean value of nutritional status (IMT/U) in school groups with the NGTS program and the NGTS Non-Program. This can be seen from the T-test value which shows a significant difference with a p value of 0,004 ($p < 0,005$). This is relevant to the average value of the nutritional status of students in the school group with the NGTS program has a higher IMT / U value of 18,05 compared to the NGTS non-program school group of 16,84.

Discussion

The results of the study on the effect of the NGTS program on student nutritional status were found to be significant with $p = 0,004$ ($p < 0,005$). This value is in line with the objectives of the NGTS program which focuses on the strategic role of schools as a medium in educating student character centered on appropriate nutrition practices in the school environment and home environment with the involvement of various sectors. In addition, the NGTS program is designed to support and strengthen the UKS program, which is the umbrella of school-based nutrition and health activities. Several components in the Trias of UKS are closely related to nutrition, and are measurable in the evaluation of UKS implementation as indicators in the stratification of UKS [13]. For example, students have good nutritional status, schools have healthy canteens, schools run breakfast activities with a balanced nutrition theme, schools run literacy with health materials, provide health education related to classroom learning, schools carry out HWWS activities, and physical activity together [14].

Nutritional problems that are rampant in school-age children are generally malnutrition and overnutrition. During this period, macro and micronutrients are needed more to encourage growth and development in children. In addition, it can also be used as a source of energy, thinking, and support physical activities that can increase immunity in the body [15].

Conclusion

The results of data analysis with independent t-test obtained p-value 0.004 ($p < 0.05$) this result is in line with the respondent's nutritional status data where the problem of overnutrition and undernutrition is much higher in the Non-NGTS school group compared to the NGTS school group. Improving maximum health in children by cutting off the possibility of death at an early age is one of the focuses in the Sustainable Development Goals (SDG's). We can realize this through the NGTS program by targeting school-age children because at this age eating habits can be developed in the home and school environment, as well as the role of schools in influencing their nutritional status in adulthood.

References

- [1] Jukes MCH, Drake LJ, Bundy DAP. School health, nutrition and education for all : levelling the playing field. CABI Pub; 2018. 145 p.
- [2] Febriana Muchtar SRH. Pengukuran dan penilaian status gizi anak usia sekolah menggunakan indeks massa tubuh menurut umur. 2022;
- [3] Imama Yuda S- D, Jasmani Kesehatan dan Rekreasi P, Ilmu Keolahragaan F, Budi Prihanto S- J, Jasmani P, dan Rekreasi K. Jurnal Pendidikan Olahraga dan Kesehatan Volume 05 Nomor 01 Tahun [Internet]. 2017. Available from: <http://ejournal.unesa.ac.id/index.php/jurnal-pendidikan-jasmani/issue/archive>
- [4] Jihan Nabia Aulia. Masalah Gizi Pada Anak Usia Sekolah. Jurnal Ilmiah Kesehatan Media Husada. 2022 Dec 4;11(2):21–7.
- [5] Zuhriyah A, Indrawati V. KONSUMSI ENERGI, PROTEIN, AKTIVITAS FISIK, PENGETAHUAN GIZI DENGAN STATUS GIZI SISWA SDN DUKUHSARI KABUPATEN SIDOARJO. 2021.
- [6] Hasrul HAH. Pengaruh Pola Asuh Terhadap Status Gizi Anak Influence of Foster Pattern About the Status of Child Nutrition. 2020; Available from: <https://akper-sandikarsa.e-journal.id/JIKSH>
- [7] Ratna Palupi I, Nandya Rachmawati V, Prawiningdyah Y, Kesehatan G, Kedokteran F, Masyarakat K, et al. 632 HIGEIA 4 (4) (2020) HIGEIA JOURNAL OF PUBLIC HEALTH RESEARCH AND DEVELOPMENT Pemenuhan Gizi dari Penyelenggaraan Makan Siang Sekolah dan Konsentrasi Siswa Sekolah Dasar. 2020; Available from: <http://journal.unnes.ac.id/sju/index.php/higeia><https://doi.org/10.15294/higeia/v4i4/38344>
- [8] Aulia Qodrina HKSR. Faktor Langsung dan Tidak Langsung Penyebab Stunting di Wilayah Asia: Sebuah Review. 2021; Available from: <http://forikes-ejournal.com/index.php/SF>
- [9] Irnani H, Sinaga T. Pengaruh pendidikan gizi terhadap pengetahuan, praktik gizi seimbang dan status gizi pada anak sekolah dasar. Vol. 6, Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition). 2017.
- [10] Evelianti Saputri M, Widiastuti S, Naulia Pamela D. Journal of Community Engagement in Health Pemeriksaan Gizi Pada Anak Usia Sekolah dan Penyuluhan Perilaku Hidup Bersih dan Sehat (PHBS) di Sekolah Dasar Terpadu Al-Farabi Pondok Terong Cipayung Depok. 2021;4(1):82–5. Available from: <http://jceh.org><https://doi.org/10.30994/jceh.v4i1.119>
- [11] Fernandez JC. Securing a Nutrition-Conscious Young Generation Through A School Based Intervention: The SEAMEO RECFON Nutrition Goes to School Program Experiences. 2020.
- [12] Regina Maria, Hasan T, Fanny L, Studi P, Gizi T, Dietetika D, et al. PERBEDAAN STATUS GIZI DAN PRESTASI BELAJAR SISWA SD YANG MENDAPAT PROGAS DAN YANG TIDAK MENDAPAT PROGAS DI KABUPATEN KUPANG-PROVINSI NTT. Vol. 30, Media Gizi Pangan. 2023.
- [13] Sella S, febriawati H, Muhammadiyah Bengkulu U, Corresponden Author E. Peran Usaha Kesehatan Sekolah (UKS) Dalam Pembinaan Sekolah Sehat. Jurnal Pengabdian Masyarakat. 2023;5(2):167–76.
- [14] Lahinda J, Jamlaay FS, Sumarsono A, Betaubun M, Keguruan F, Pendidikan I, et al. SURVEI TINGKAT PEMAHAMAN SISWA TERHADAP USAHA KESEHATAN SEKOLAH (UKS) DI SMK SE-KOTA MERAUKE. 2022;2(3):327–226.
- [15] Fauzan MA, Nurmalasari Y, Anggunan A. Hubungan Status Gizi dengan Prestasi Belajar. Jurnal Ilmiah Kesehatan Sandi Husada. 2021 May 14;10(1):105–11.