THE RELATIONSHIP BETWEEN EATING HABIT AND NUTRITIONAL STATUS IN SPORTS SPECIAL CLASS STUDENTS

[*1]**Dinda Nafilla**,[2]**Yulia Lanti Retno Dewi**,[3]**Intan Suraya Ellyas**

[1]*Master of Nutrition Science, Faculty of Graduate study, Sebelas Maret University, Indonesia*
[2]*Medicine Department, Faculty of Medicine, Sebelas Maret University, Indonesia*
[3]*Sport Education Department, Faculty of sport science, Sebelas Maret University, Indonesia*

Author's email:
dindanafilla@student.uns.ac.id [2]yulialanti@live.com;[3]Intan_penkepor@staff.uns.ac.id

Abstract. *Eating habits are the way individuals and groups choose, consume, and use available food based on the social and cultural factors in which they live. Sport special class student are students in their early teens who undergo special programs, where students run training programs according to specialization sports and academic activities. This study aims to analyze the relationship of food choice with the nutritional status of sport special class students, Eating habits were examined with the Adolesence Food Habit Checklist (AFHC) questionnaire developed and validated by Johnson et al (2002). From filling out the questionnaire, the results can be categorized based on the truth in answering into healthy eating habits and unhealthy eating habits. The research design is cross sectional, conducted at SMPN 1 Surakarta in January 2023. The sampling technique was carried out with a simple random sampling technique so that 129 was obtained as the minimum number of research samples. The collection of personal data such as age, gender and address was filled in by the respondents themselves. Nutritional status data using anthropometry, and determined based on BMI / U. Nutritional knowledge data using the Adolesence Food Habit Checklist (AFHC). Nutritional status data is carried out weight and height weighing with strature meters and digital body scales that have been calibrated. Data analysis using the Chi Square test. The results showed that there was no relationship between eating habit and nutritional status (p>0.05). Meanwhile, eating habits in KKO students found 77.4% to have healthy eating habits and 22.6%. The results of this study may have a tendency for research subjects to answer not in accordance with their daily eating habits, this can happen because the research questionnaire option is closed, so that research subjects tend to answer what is considered right, not what is actually done.*

Keywords: *Food Choice, Nutritional Status, Sport Special Class*

1. INTRODUCTION

Many adolescent nutrition problems occur due to wrong nutritional behavior such as imbalance between nutrition and recommended nutritional adequacy. Nutritional knowledge is basic information related to energy, proportions, types of nutrients, and eating habits applied by individuals based on information sources received until adopted into a daily habit. (Kesztyüs et al., 2017). In adolescence, problems related to adolescent nutrition are caused mainly by wrong eating behavior, so there is a nutritional imbalance in their food intake against the recommended nutritional adequacy figures. Adolescence is the transition from childhood to adulthood. Therefore, fulfilling nutrition during adolescence is essential; in certain conditions, adolescents need special nutrition, such as adolescents with high physical activity (active in sports) and other physical activity activities (Firmansyah & Muhammad, 2021). Adolescents who engage in sports have an increased need for nutritional needs in infancy, but many do not meet adequate daily nutrient intake recommendations (Bingham et al., 2015).

The formation of adolescent eating habits starts from parents, especially when children are toddlers. When children reach adolescence, eating habits are also influenced by the environment, peers, social life, and activities outside the home. The results of research conducted by (Farah Husna Fadhilah, Bagoes Widjanarko, 2018) on junior high school students in Semarang found that 72.8% of malnourished children have poor eating habits. Research conducted by (Hitendre et al., 2022) shows that many athletes have suboptimal food intake and inadequate dietary knowledge, which can translate into poorer food choices. Good nutritional knowledge goes hand in hand with good nutritional

behavior, as evidenced by healthy eating choices (Noronha et al., 2020). Therefore, the level of nutritional knowledge will affect attitudes, behaviors, and eating habits in choosing foods related to the focus of a person's nutritional condition. A habit is something that is learned and done repeatedly for the same thing. Habits are patterns of behavior obtained from the silver patterns that occur. So it can be interpreted that eating habits are a pattern of consumption habits obtained due to behavior that occurs repeatedly. Therefore, eating habits can be learned and measured according to the principles of nutrition science through education, exercise and counseling for their survival as early as possible (Syahroni et al., 2021). This paper aims to analyze the relationship between food choice and the nutritional status of particular sports class students. This research is expected to provide an overview of eating habits in special sports class students and provide an overview of the factors of eating habits that affect nutritional status.

3. RESEARCH METHODS

This research is observational analytic with a Cross-sectional research design. This research will be conducted in the Special Sports Class of SMP Negeri 1 Surakarta. The population of this study was all Special Sports Class students at SMPN 1 Surakarta. Three classes consist of classes 7, 8, and 9. The Sports Special Class in each batch amounted to 64 students. So the total student population amounts to 192 students. Calculation of sample size using OpenEpi software, which is an application for calculating sample size in cross-sectional research with Margin of error (α) = 5%, Confidence Level (CI) = 95%, Population size (N) = 192, and Response distribution = 50%, so that the minimum sample size from the calculation is 129.

The sampling technique in this study was carried out by simple random sampling. The inclusion criteria in this study are Sports Special Class Students who actively participate in school activities academically and regularly exercise, and are willing to follow the research to the end. In contrast, the Exclusion criteria are students who must fill in the required data completely. The instrument used is the Adolesence Food Habit Checklist (AFHC) to assess eating habit. The AFHC questionnaire has been adapted, translated by a sworn translator, and through a series of tests of the questionnaire's validity and reliability.

The interpretation of the assessment of eating habit using AFHC is classified into two categories, namely scores ≤8 and above as Unhealthy eating habits, and if the score ≥8 then it is interpreted as healthy eating habits. Measurement of nutritional status in adolescents is influenced by their age period; age-related disorders are influenced by puberty in adolescents. With changes in age, changes in body composition and body density occur. The calculation of body mass index in adolescents uses BMI / U indicator. BMI / U nutritional status data use anthropometry by measuring student weight and height. The results of the BMI calculation are included in the Z-Score formula, with a body mass index with a BMI / U index for children aged 5-18. Calculating the Z score formula will produce a value that can be used to interpret categories and nutritional status thresholds by category. Physical changes in height and weight gain occur during puberty. Adolescents are one of the age groups in the nutrition-vulnerable, nutrition-prone adolescents category. High-speed growth and development require more energy. On the other hand, changing the lifestyle and eating habits of young people following the correction of energy input and nutrition is not appropriate, so young people develop nutritional problems the elderly (Widnatusifah et al., 2020)

Table 1. Categories and Thresholds of Nutritional Status of Children 5-18 years old, Regulation of the Minister of Health of the Republic of Indonesia Number 2 of 2020 concerning Child Anthropometry Standards. Jakarta : Indonesian Ministry of Health

Nutritional Status Categorize	z-score
Severely thinnes	<-3 SD
Underweight	-3 SD s.d. <- 2SD
Normal	-2 SD s.d. +1 SD

Overweight	>+ 1SD s.d. +2SD
Obese	>+ 2SD

The data were analyzed bivariate to determine the relationship between eating habit and nutritional status in the Special Sports Class students at SMPN 1 Surakarta. Statistical test using Chi-Square test with 95% meaningfulness. This research received a research permit from the Health Research Ethics Committee (KEPK) Faculty of Medicine UNS (No: 04/UN27.06.11/KEP/EC/2023)

4. RESULTS AND DISCUSSION

4.1 Respondence Characteristicts

The total number of research respondents was 133, with male respondents totaling 82 people (61.7%) and women amounting to 51 people (38.3%). The percentage of nutritional status of respondents was categorized into three based on the findings of the z-score calculation, with the category of undernutrition amounting to 4 respondents (3%), good nutrition 104 respondents (78%), and nutrition more than 25 respondents (19%). The respondents of the study were students in the early adolescent category, ranging from the age of 12-16 years, with a distribution of 12 years old 12 people (9%), 13 years old 42 people (31.6%), 14 years old 48 people (36.1%), 15 years old 29 people (21.8%) and 16 years old two people (1.5%).

The special sports class has 11 sports with different distributions; the sports with the most students are football 29 (21.8%) and volleyball 27 (20.3%). During the characteristics of nutritional knowledge, 35.3% of special sport class students have adequate nutritional knowledge, and 64.7% have inadequate nutritional knowledge

Tabel 2. Characteristics of Respondents

Characteristict	sum	
	n	%
Gender		
Male	82	61.7%
Woman	51	38.3%
Age		
12 Years	12	9%
13 Years	42	31.6%
14 Years	48	36.1%
15 Years	29	21.8%
16 Years	2	1.5%
Nutritional Status		
Undernutrition	4	3%
Normal	104	78%
Overweight	25	19%
Sports		
Table tennis	8	6%
Swimming	6	4.5%
Taekwondo	11	8.3%
Football	29	21.8%
Volly	27	20.3%
Judo	4	3%
Athletics	16	12%
Karate	7	5.3%
Archery	7	5.3%
Tennis	4	3%
Fencing	6	4.5%
Silat	8	6%
Nutrition Knowledge		
Adequate	47	35.3%
Inadequate	86	64.7%

Eating habits are behaviors carried out by individuals or groups towards a food that is often eaten. Eating habits in a group will have an impact on the nutritional status of the local community (Kadir A, 2016). Adolescents are one of the categories of old age for nutritional problems. Adolescents need coaching from the point of physical, intellectual, mental, social development and insightful ways related to their food consumption (Kadir A, 2016). Nutritional information influences attitudes and behaviors in food selection. Nutritional knowledge will lead individuals to overall health, represented by their nutritional status (Oktavia &; Amelia, 2022).

Eating habits are analyzed and pursued with a change in perspective and better eating habits because habits are repetition of activities and choices (Gagar M A, Sintha F S, 2022). Habits are patterns of behavior obtained from the silver patterns that occur. So it can be interpreted that eating habits are a pattern of consumption habits obtained due to behavior that occurs repeatedly. Therefore, eating habits can be learned and measured according to the principles of nutrition science through education, exercise and counseling for survival as early as possible (Syahroni et al., 2021).

4.2 Nutritional Knowledge

In this study, distribution data is shown in Table 3 based on nutritional status. In the category of Healthy Eating Habit, there were four students (3%) in the undernutrition category, 80 students (60.2%) in the normal category, and as many as nine teen students (14.3%) in the more nutrition category. Meanwhile, in the category Unhelathy Eating Habit, there is no respondent have unhealthy Eating habit in the undernutrition category, 24 students (18 %) in the normal nutrition category, and six students (4.5%) in the overweight category. In general, based on the results of filling out the nutrition knowledge questionnaire for KKO students, most students (77.4%) are in the category of healthy eating habit, and 22.6% have unhealthy eating habit.

Table 3. Distribution of Eating Habit on Nutritional Status

Eating Habit	Sum		Total
	N	%	%
Healthy Eating Habit			
Undernutrition	4	3%	77.4%
Normal	80	60.2%	
Overweight	19	14.3%	
Unhelathy Eating Habit			
Undernutrition	0	0%	22.6%
Normal	24	18%	
Overweight	6	4.5%	

Based on the results of this study in table 4.5 characteristics of eating habits in KKO students, it was found that 77.4% had healthy eating habits and 22.6% had unhealthy eating habits. From the results of the distribution of eating habits with nutritional status, it was found that all research subjects with the undernourished category had healthy eating habits, 60.2% of research subjects in good nutrition had healthy eating habits, followed by 14.3% in the nutrition category had more healthy eating habits. The results of this study may have a tendency for research subjects to answer not in accordance with their daily eating habits, this can happen because the research questionnaire option is closed, so that research subjects tend to answer what is considered right, not what is actually done. The results of this study are in line with research conducted by (Sary et al., 2021) which examined the relationship between eating consumption habits and nutritional status, from the results of the study obtained statistically the results of the spearman correlation analysis showed that there was no relationship between food consumption habits and nutritional status pvalue = 0.116 (p > 0.05). The same results

were obtained from a study conducted by (Hafiza et al., 2021) entitled The relationship between eating habits and nutritional status in adolescents of SMP YLPI Pekanbaru Statistical test results were obtained (p = 1 > α (0.05), this shows no relationship between eating habits and nutritional status. The majority of adolescents have healthy eating habits, but consumption behavior in adolescents always changes, both healthy and unhealthy changes in consumption behavior. Adolescent eating behavior is strongly influenced by external factors such as peer influence, information exposure and family eating habits (Hafiza et al., 2021).

Table 4. Eating Habit Analysis
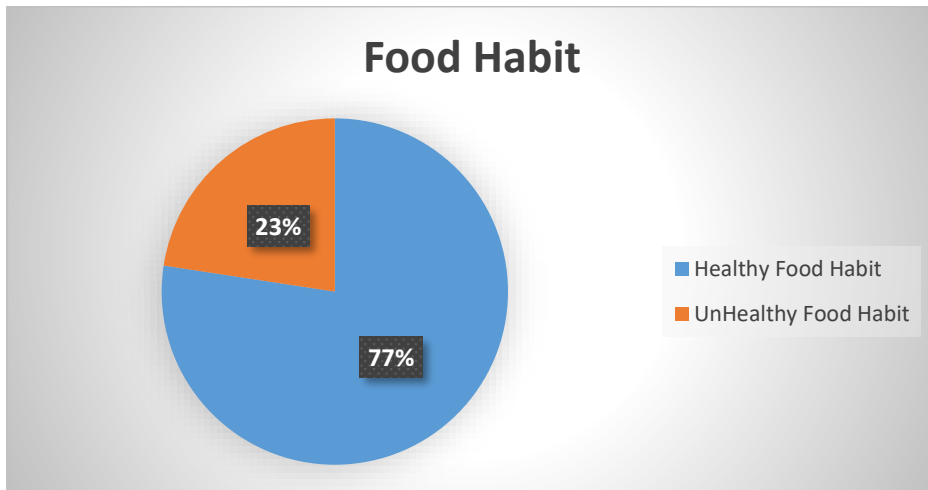
The description of healthy eating habits from the results of this study does not represent good nutritional status directly, this is due to the many other external influences and interactions that affect nutritional status

4.3 The Relationship of Eating habit with the Nutritional Status of Sports Special Class Students

Bivariate analysis is used for variables that are thought to be related or have a correlation. This study uses bivariate analysis to analyze independent variables against dependent variables. In this study, the relationship between eating habit and nutritional status was measured by bivariate analysis. In this study, a test was carried out using the chi-square test. The chi-square test result was obtained at p0.05. Therefore, it can be concluded that there is no relationship between the independent and dependent variables. The following are the results of testing the relationship between nutritional knowledge and nutritional status.

Table 5. Bivariate test of Eating Habit with nutritional status in sport special class students

Variabel	Nutritional Status			P-value
	Undernutrition	Normal	Overweight	
Eating Habit				0,848
Healthy Eating Habit	4(3%)	80(60.2%)	19(14.3%)	
UnHealthy Eating Habit	0(0%)	24(18%)	6(4.5%)	

The bivariate analysis results in the table showed that eating habit was not related to nutritional status (p = 0.848>0.05). Eating habits are the way individuals and groups choose, consume, and use available food based on the social and cultural factors in which they live (Głąbska et al., 2021). Research related to eating habits in a community group will have an impact on the nutritional status of the local community. One of the important and fundamental factors in decreasing nutritional status is the wrong eating consumption behavior by individuals, families or communities that do not follow the rules of nutrition

and health science (Kadir A, 2016). Therefore, in programs with the aim of improving nutrition, analysis of eating habits is analyzed and pursued with changes in perspectives and better eating habits because habits are repetition of activities and choices (Gagar M A, Sintha F S, 2022). Eating habits are the result of assemblies of various aspects that are multidimensional. Although the majority of respondents have healthy eating habits, this is not proven by improving nutritional status, this is evidenced by the category of healthy eating habits 4 respondents in the undernutrition category and 19 respondents in the overweight category.

CONCLUSION

In the adolescent age period, there is a period of physical growth and development so that adolescence really needs more nutrients, especially in adolescents with high physical activity. Nutritional status is a measure of success in meeting nutritional needs. Nutritional status that is not within the normal range in adolescents is caused by certain factors. Direct causative factors of nutritional problems such as unhealthy food, misconception of nutrition and infectious diseases that may be suffered. In this study, an analysis of the relationship between eating habits in special sports class students was conducted, from the results of data analysis it was found that the variable of eating habits was not related to nutritional status. Nutritional status in adolescents is influenced by many things, in addition to a high percentage of junk food consumption, lack of knowledge and awareness, among adolescents peer analysis factors can influence eating choices and eating habits. Habit is a pattern of behavior obtained from the silver pattern that occurs, so eating habits are a pattern that an individual learns repeatedly for the same thing (Kadir, 2016). Based on the survey results through questionnaires 77.4% of students have healthy eating habits, although students have healthy eating habits this is not proven by knowledge and good food selection. Habits are an accumulation of the application of science and various 71 aspects that are multidimensional, habits are formed from a long time so that to change a habit requires an effort through education, and practice since humans began to recognize eating for their survival (Kadir A, 2016). So from the results of this study it can be concluded that healthy eating habits do not guarantee the fulfillment of optimal nutritional status in adolescent athletes, many factors influence the formation of eating habits. Screening of the food choice with proper instrument could be recommendation for optimize analyzing eating habit of sport special class student.

REFERENCES

Bingham, M. E., Borkan, M. E., & Quatromoni, P. A. (2015). Sports Nutrition Advice for Adolescent Athletes: A Time to Focus on Food. American Journal of Lifestyle Medicine, 9(6), 398–402. https://doi.org/10.1177/1559827615598530

Emilia, E. (2009). Perilaku Hidup Sehat. Media Pendidikan, Gizi Dan Kuliner, 1(1), 1–10.

Firmansyah, A., & Muhammad RAP. (2021). The nutrition needs of adolescent athletes: A systematic review. Jurnal SPORTIF : Jurnal Penelitian Pembelajaran, 7(3), 400–418. https://doi.org/10.29407/js_unpgri.v7i3.16716

Farah Husna Fadhilah, Bagoes Widjanarko, Z. S. (2018). JURNAL KESEHATAN MASYARAKAT (e-Journal). Faktor-Faktor Yang Berhubungan Dengan Perilaku Makan Pada Anak Gizi Lebih Di Sekolah Menengah Pertama Wilayah Kerja Puskesmas Poncol Kota Semarang, 6, 1–23.

Gagar M A, Sintha F S, U. W. (2022). The Relationship Between Eating Habits, Social Media Exposure and Peers With Nutritional Status of Nutrition Students at UPN Veteran Jakarta. 14(2).

Głąbska, D., Skolmowska, D., & Guzek, D. (2021). Food preferences and food choice determinants in a polish adolescents' covid-19 experience (Place-19) study. Nutrients, 13(8), 1–12. https://doi.org/10.3390/nu13082491

Hafiza, D., Utmi, A., & Niriyah, S. (2021). Hubungan Kebiasaan Makan Dengan Status Gizi Pada Remaja Smp Ylpi Pekanbaru. Al-Asalmiya Nursing Jurnal Ilmu Keperawatan (Journal of Nursing Sciences), 9(2), 86–96. https://doi.org/10.35328/keperawatan.v9i2.671

Hawk, M. F. (2014). Assessing Sports Nutrition Knowledge of Adolescent Atheltes and their

Parents: An Intervention Approach. Electronic Theses and Dissertations, 1176. https://digitalcommons.georgiasouthern.edu/etd/1176

Hitendre, S., Jordan, R., Theodorakopoulos, C., & White, L. (2022). Dietary Intakes, Knowledge, and Perceptions of Semi-professional Rugby Athletes in Scotland. Journal of the International Society of Sports Nutrition, 19(1), 49–69. https://doi.org/10.1080/15502783.2022.2036436

Kesztyüs, D., Traub, M., Lauer, R., Kesztyüs, T., & Steinacker, J. M. (2017). Skipping breakfast is detrimental for primary school children: Cross-sectional analysis of determinants for targeted prevention. BMC Public Health, 17(1), 1–10. https://doi.org/10.1186/s12889-017-4169-z

Kadir A, A. (2016). Kebiasaanmakan Dan Gangguan Pola Makan Serta Pengaruhnya Terhadap Status Gizi Remaja. Jurnal Publikasi Pendidikan, VI(1), 49–55.

Mangieri, H. R. (2017). Fueling Young Athletes (First Edit). Human Kinetic.

Noronha, D. C., Santos, M. I. A. F., Santos, A. A., Corrente, L. G. A., Fernandes, R. K. N., Barreto, A. C. A., Santos, R. G. J., Santos, R. S., Gomes, L. P. S., & Nascimento, M. V. S. (2020). Nutrition Knowledge is Correlated with a Better Dietary Intake in Adolescent Soccer Players: A Cross-Sectional Study. Journal of Nutrition and

Oktavia, L., & Amelia, W. (2022). Hubungan Pengetahuan Gizi Seimbang Dengan Perilaku Gizi Seimbang Pada Mahasiswa Tingkat 1. Babul Ilmi Jurnal Ilmiah Multi Science Kesehatan, 14(1), 69–75. https://doi.org/10.36729/bi.v14i1.822

Parmadibet, B. N. (2020). Profil Kelas Khusus Olahraga Sekolah Menengah Pertama Negeri 1 (SMPN 1) Surakarta Dinas Pendidikan dan Dinas Kepemudaan dan Olahraga Tahun 2018. Universitas Sebelas Maret.

Pruneti, C. A., Montecucco, M., Fontana, F., Fante, C., Morese, R., & Lento, R. M. (2010). Eating behaviour and body image in a sample of young athletes. Acta Biomedica, 81(3), 171–184.

Syahroni, M. H. A., Astuti, N., Indrawati, V., & Ismawati, R. (2021). Faktor-faktor yang mempengaruhi kebiasaan makan. Jurnal Tata Boga, 10(1), 12–22.

Sary, N. L., Rahmawati, S., Yusni, Y., Husnah, H., & Saminan, S. (2021). Hubungan Kebiasaan Konsumsi Makanan dengan Status Gizi Pegawai Sekretariat Daerah Kabupaten Aceh Barat. Jurnal Kedokteran Syiah Kuala, 21(1), 21–28. https://doi.org/10.24815/jks.v21i1.19436

Laily Ni'matul Aliyah. (2021). Hubungan Penguasaan Pengetahuan Gizi , Frekuensi Konsumsi Susu Rendah Lemak dengan Status Gizi Atlet Futsal Klub Bluemosphere Kabupaten Jombang Laily Ni ' matul Aliyah Siti Sulandjari Abstrak Aspek penting pendukung performa atlet yaitu memiliki status gi. Jurnal Gizi Universitas Negeri Surabaya, 1(2), 82–88.

Widnatusifah, E., Battung, S., Bahar, B., Jafar, N., & Amalia, M. (2020). Gambaran Asupan Zat Gizi Dan Status Gizi Remaja Pengungsian Petobo Kota Palu. Jurnal Gizi Masyarakat Indonesia: The Journal of Indonesian Community Nutrition, 9(1), 17–29. https://doi.org/10.30597/jgmi.v9i1.10155

Zahra, S., & Muhlisin, M.-. (2020). Nutrisi Bagi Atlet Remaja. Jurnal Terapan Ilmu Keolahragaan, 5(1), 81–89. https://doi.org/10.17509/jtikor.v5i1.25097