Journal of Nursing Culture and Technology
July 2024; Volume 1 Number 2
https://journal.rifapublisher.id/index.php/JNC-Tech
ISSN: 3048-1066 (Print); ISSN: 3047-9045 (Online)

THE RELATIONSHIP BETWEEN NUTRITIONAL STATUS AND ACADEMIC ACHIEVEMENT OF FIFTH GRADE STUDENTS OF TEGALREJO 1 STATE ELEMENTARY SCHOOL

Desetria Cici Wolla Gole[1], Arimbi Karunia Estri[1], Cecilia Indri Kurniasari[1]
[1] Sekolah Tinggi Ilmu Kesehatan Panti Rapih Yogyakarta
Email: desetriacici12@gmail.com

ABSTRACT

Background: Nutrition is essential for school children's growth, development, energy, cognitive function, and immune system. High-quality nutrition optimizes brain growth and development. Objective: This study aims to determine the relationship between nutritional status and academic achievement among fifth-grade students at SD Negeri Tegalrejo 1, Yogyakarta. Method: This quantitative, correlational study was conducted from March to July 2023 at Jalan Bener No. 40, Tegalrejo, Yogyakarta. Nutritional status and academic performance were assessed using anthropometric measurements (BMI-for-age Z-scores) and final report card grades. The study included 56 students, with 53 ultimately participating due to exclusion criteria (absence during data collection). Data were analyzed using univariate and bivariate analysis with Spearman's correlation test. Result: The results showed no significant relationship between nutritional status and academic achievement (P-value = 0.642, P > 0.05). Conclusions: Factors such as dietary habits, physical activity, motivation, talent, interest, and learning willingness, along with external factors like school environment, family, and socio-economic status, may contribute more significantly. Schools should monitor students' nutritional status through regular height and weight measurements and collaborate with local health facilities. This study focused solely on cognitive aspects of academic achievement, suggesting future research should include a more comprehensive assessment of student performance.
Keywords: Academic Achievement, Nutritional Status, School Children.

Introduction

The progress of a country depends on its superior human resources, which include optimal health, high intelligence, physical fitness, and satisfactory achievements. Evaluating the development in the health sector can be seen from the public health level, including mortality rates, disease rates, and the nutritional status of the population. Adequate nutrition results in healthy, intelligent, physically strong, and productive individuals. Quality nutrition is essential from an early age, especially at the elementary education level, to support optimal growth and development of children.

Children who maintain good health and nutritional status, supported by a conducive learning environment, tend to experience a healthy and fulfilling life. Conversely, school-age children who are malnourished are more susceptible to illness and mortality. Nutrition is crucial for school children to support growth, development, energy, cognitive abilities, physical activities, and immune system function. Nutritional quality is especially significant during the rapid growth and development phases of school-aged children.

Nutritional problems involve health and well-being disorders due to the imbalance between food intake and the body's nutritional needs. In Indonesia, major nutritional issues include Protein-Energy Malnutrition (PEM), iron deficiency anemia, iodine deficiency disorders (IDD), and Vitamin A deficiency (VAD). Additionally, food consumption and health levels affect a person's nutritional status.

Globally, around 73 million children face challenges in obtaining adequate food intake at school, reducing their ability to benefit from education (UNESCO, 2023). In 2021, the number of undernourished individuals reached 767.9 million, a 6.4% increase from the previous year. Asia has the highest number of undernourished people, totaling 424.5 million. The WHO states that malnutrition is a serious global health threat, causing approximately 3.1 million child deaths each year (UNICEF & FAO, 2021).

In Indonesia, millions of children and adolescents face nutritional problems such as stunting, wasting, and both undernutrition and overnutrition. Data from the Basic Health Research (Riskesdas) 2018 shows significant improvements in nutritional status. The prevalence of undernutrition decreased from 19.6% in 2013 to 17.7% in 2018. The prevalence of stunting dropped from 37.2% to 30.8%, and the prevalence of wasting decreased from 12.1% to 10.2%.

According to the health profile report of the Special Region of Yogyakarta (DIY) Province, there is a problem of Protein-Energy Malnutrition (PEM) with a rate of 8.35% in 2019. Yogyakarta City recorded the highest PEM rate, at 8.46%, exceeding the provincial rate of DIY. Health workers continuously strive to improve nutrition and monitor the condition of malnourished individuals as part of their commitment to maintaining the health and well-being of the community, especially the nutritional status of children and adolescents.

The nutritional status of children aged 5-18 years can be categorized into three groups: ages 5-12 years, 13-15 years, and 16-18 years. Indicators of nutritional status involve anthropometric measurements, including weight (BW) and height (BH), as well as Body Mass Index for Age (BMI/A). Anthropometric measurements are crucial to understanding and monitoring the nutritional status of school-aged children, especially those aged 10-11 years in fifth grade. During this phase, children's growth, particularly in height, is rapid, thus increasing their energy needs compared to previous ages (Kumala, 2017).

Nutritional needs for school-aged children support optimal growth and development. Adequate nutrition is required for sufficient energy, good cognitive abilities, optimal physical activity, and a strong immune system. All these contribute to improved thinking abilities and learning performance in school (Rawung, Herlina, & Damanjanty, 2020).

School-aged children need macronutrients such as carbohydrates, proteins, and fats, as well as micronutrients such as vitamins and minerals. When nutritional intake is insufficient, its impacts can be felt in various aspects, such as changes in brain metabolism, reduced brain function, impaired physical growth, decreased intelligence development, weakened immunity, and increased susceptibility to illness. Therefore, providing sufficient and balanced nutrition is crucial in optimizing the development and performance of school children. Malnourished children tend to show symptoms of lethargy, fatigue, susceptibility to illness, excessive sleepiness, difficulty following lessons, and lack of enthusiasm, which disrupts the learning process and lowers academic performance (Abdullah and Norfai, 2019). Good nutritional status positively impacts the ability to achieve higher academic performance (Utama and Lina Yunita, 2019).

The quality of education affects student learning performance. The interaction between students, teachers, and the learning environment is important in determining good learning outcomes (Rosyid, 2021). The government focuses on equalizing and improving the quality of national education to enhance student learning performance. The Ministry of Education and Culture, along with the National Education Standards Board (BSNP), has introduced the Merdeka Curriculum, which provides

educators with the flexibility to create quality learning tailored to students' needs and learning environments, aiming to achieve better and more meaningful learning outcomes.

Based on an initial survey and preliminary study at SDN Tegalrejo 1 Yogyakarta City, it was found that nutritional problems among students were not very apparent. Of the 56 fifth-grade students, 25 appeared weak, pale, unenthusiastic, had decreased concentration, and were easily sleepy during lessons, one of the reasons being skipping breakfast. Most students bring food to school, such as rice with tofu, tempeh, fish, eggs, and water, while others bring bread and fruit. Observation of the school environment showed the presence of a healthy canteen without artificial coloring and preservatives, as well as street vendors selling unhealthy snacks. Incorrect nutritional behavior, such as skipping breakfast, consuming fewer vegetables and fruits, and eating fast food and junk food, needs attention.

Research by Fauzan, Yesi, & Anggunan (2021) showed a significant correlation between nutritional status and learning performance at SDN Teluk 13 Pandan, with a p-value of 0.039 and a correlation coefficient (r) of 0.739. Research by Maku, Ni Ketut, & Aan (2018) also showed a significant relationship between nutritional status and learning performance at SDN Ngringin, Depok, Sleman, Yogyakarta. However, research by Rawung and colleagues on students at SD Katolik St. Fransiskus Xaverius found no relationship between nutritional status based on BMI/A and learning performance, with a p-value of 0.951.

Based on this background, this research aims to determine the relationship between nutritional status and learning performance of fifth-grade students at SDN Tegalrejo 1 Yogyakarta City. This study involves 53 students as respondents, based on preliminary studies conducted and the support of the school to assess the nutritional status and learning performance of students. Fifth-grade students are in the 10-12 years age group, a phase of rapid growth and development with high physical activity that affects nutritional needs.

Method

In this study, the researcher collected data directly from the field using primary data. Specifically, the researcher gathered data on the weight and height of fifth-grade students at SD Negeri 1 Tegalrejo, Yogyakarta, using an electronic scale with an accuracy of 0.5 kg and a microtoise with an accuracy of 0.1 cm. Secondary data on the number of students, school environment description, complete student biodata, class teacher's notes, and student academic achievements were collected from report card documentation and relevant journal and book references. The research equipment used included writing tools such as pens and notebooks, a digital stepping scale with an accuracy of 0.5 kg, and a height measuring tool, namely a microtoise with an accuracy of 0.1 cm.

To assess the nutritional status of children at SD Negeri 1 Tegalrejo, Yogyakarta, the researcher used the Body Mass Index for Age (BMI/A) based on the Indonesian Minister of Health Regulation of 2020. This was used to classify children into categories of Malnutrition, Underweight, Normal Nutrition, Overweight, and Obesity based on their weight and height.

Regarding academic achievement, the researcher assessed the learning performance of fifth-grade students at SD Negeri Tegalrejo 1 Yogyakarta using secondary data from the students' report cards. The evaluation was based on the mixed curriculum of SD Negeri Tegalrejo 1, which includes the 2013 Curriculum and the Merdeka Curriculum, using four criteria: Needs Guidance (0-60), Sufficient (61-74), Good (75-80), and Very Good (81-100). This assessment focused on the cognitive aspects of the students based on their report card scores.

Results

Table 1.
Frequency Distribution of Respondents' Nutritional Status
At SD Negeri Tegalrejo 1, Yogyakarta City
March 24 - July 30, 2023

Nutritional Status	Frequency (n)	Percentage (%)
Malnutrition	0	0,0
Underweight	0	0,0
Obesity	1	1,9
Overweight	12	22,6
Normal	40	75,5
Total	53	100,0

Based on the frequency distribution of respondents' nutritional status in Table 1, it can be explained that the majority of fifth-grade students at SD Negeri Tegalrejo 1, Yogyakarta City, have a normal nutritional status, with 40 respondents (75.5%). The study results show that 1 respondent (1.9%) is classified as obese, 12 respondents (22.6%) are classified as overweight, and 40 respondents (75.5%) have a normal nutritional status. It is observed that normal nutritional status does not necessarily influence good academic performance, and poor nutritional status does not necessarily affect academic performance negatively.

Table 2.
Frequency Distribution of Respondents' Academic Performance
At SD Negeri Tegalrejo 1, Yogyakarta City
March 24 - July 30, 2023

Academic Performance Scores	Frequency (n)	Percentage (%)
Needs Guidance	0	0,0
Sufficient	0	0,0
Very Good	31	58,5
Good	22	41,5
Total	53	100,0

Based on the frequency distribution of respondents' academic performance in Table 2, it can be explained that fifth-grade students at SD Negeri Tegalrejo 1, Yogyakarta City, have very good academic performance with 31 respondents (58.5%). Additionally, 22 respondents (41.5%) have good academic performance.

Table 3.
The relationship between nutritional status and academic achievement among fifth-grade students at SD Negeri Tegalrejo 1, Yogyakarta City
March 24 - July 30, 2023

		Academic Performance
Nutritional Status	R	- 0.065
	P value	0.642
	N	53

Table 3 shows that the statistical test using the nonparametric Spearman test resulted in a p-value of 0.642 (p-value > 0.05). Since the p-value is greater than 0.05, it can be concluded that there is no significant, negative, and very weak relationship between nutritional status and academic achievement. The research results indicate that H0 is accepted and H1 is rejected, meaning there is no relationship between Nutritional Status and Academic Achievement of Fifth Grade Students at SD Negeri Tegalrejo 1, Yogyakarta City. The contingency coefficient value of 0.065 falls within the range of 0.0 - < 0.2, indicating a very weak level of association between nutritional status and academic achievement.

Discussion

Nutritional status is the condition of the body resulting from the balance between nutrient intake or the content of nutrients in food and the body's nutrient needs. Nutritional requirements help enhance children's immune systems. High activity levels and regular eating habits help achieve a balance between intake and nutrition. Adequate nutrient intake is crucial for school-age children. This is because inadequate nutrient intake in children can disrupt their growth and development, lower their immune system, making them susceptible to various infectious diseases, and even risk illness and death if not properly addressed (Septikasari, 2016). Insufficient nutrients can also impact brain development and intellectual capacity, leading to declining intelligence in children. Moreover, meeting nutritional needs in school-age children is also important to prevent overnutrition or obesity. This is because obesity can affect children's concentration during learning activities, causing decreased concentration, drowsiness, fatigue, and reduced activity levels, thus affecting their academic performance (Ulilalbab, A., 2017).

Nutritional problems caused by overweight (overeating) and obesity are primarily due to environmental factors, including imbalance in eating patterns, eating behaviors, and physical activity. Eating patterns contribute significantly to obesity or overeating (Rawung, 2022). Irregular eating habits involve consuming large amounts of high-energy, fatty, simple carbohydrate foods, and low fiber. In addition to poor eating habits, it is advisable to avoid foods that are detrimental to body health such as junk food, processed foods, and carbonated beverages. Lack of physical activity is also a cause of overweight and obesity among students. Limited playgrounds and facilities for physical activities make children prefer to play at home. Technological advances such as electronic devices like video games, PlayStations, televisions, and computers make children less active (Kristanti, 2019).

At SD Negeri Tegalrejo 1, Yogyakarta City, the school monitors and supports its students' nutrition through communal lunch activities every Wednesday and by providing a healthy canteen (offering food without artificial colors or preservatives, and no packaged snacks). The healthy canteen serves staple foods such as white rice with side dishes like tofu, tempeh, and various green vegetables such as spinach and Chinese cabbage. In the school's surrounding area, there are many street vendors selling snacks like meatballs, rolled eggs, various fried foods, and packaged cold drinks. Most students opt to buy snacks from these vendors after school. It's noted that some students at SD Negeri Tegalrejo 1, Yogyakarta City, have aversions to certain green vegetables and fruits such as apples, papayas, and bananas. Complaints regarding nutritional issues among students at this school are rare. Nutritional

status is the condition of the body resulting from the balance between nutrient intake or the content of nutrients in food and the body's nutrient needs. Nutritional requirements help enhance children's immune systems. High activity levels and regular eating habits help achieve a balance between intake and nutrition. Adequate nutrient intake is crucial for school-age children. This is because inadequate nutrient intake in children can disrupt their growth and development, lower their immune system, making them susceptible to various infectious diseases, and even risk illness and death if not properly addressed (Septikasari, 2016). Insufficient nutrients can also impact brain development and intellectual capacity, leading to declining intelligence in children. Moreover, meeting nutritional needs in school-age children is also important to prevent overnutrition or obesity. This is because obesity can affect children's concentration during learning activities, causing decreased concentration, drowsiness, fatigue, and reduced activity levels, thus affecting their academic performance (Ulilalbab, A., 2017).

Nutritional problems caused by overweight (overeating) and obesity are primarily due to environmental factors, including imbalance in eating patterns, eating behaviors, and physical activity. Eating patterns contribute significantly to obesity or overeating (Rawung, 2022). Irregular eating habits involve consuming large amounts of high-energy, fatty, simple carbohydrate foods, and low fiber. In addition to poor eating habits, it is advisable to avoid foods that are detrimental to body health such as junk food, processed foods, and carbonated beverages. Lack of physical activity is also a cause of overweight and obesity among students. Limited playgrounds and facilities for physical activities make children prefer to play at home. Technological advances such as electronic devices like video games, PlayStations, televisions, and computers make children less active (Kristanti, 2019).

At SD Negeri Tegalrejo 1, Yogyakarta City, the school monitors and supports its students' nutrition through communal lunch activities every Wednesday and by providing a healthy canteen (offering food without artificial colors or preservatives, and no packaged snacks). The healthy canteen serves staple foods such as white rice with side dishes like tofu, tempeh, and various green vegetables such as spinach and Chinese cabbage. In the school's surrounding area, there are many street vendors selling snacks like meatballs, rolled eggs, various fried foods, and packaged cold drinks. Most students opt to buy snacks from these vendors after school. It's noted that some students at SD Negeri Tegalrejo 1, Yogyakarta City, have aversions to certain green vegetables and fruits such as apples, papayas, and bananas. Complaints regarding nutritional issues among students at this school are rare.

In this study, the academic performance of fifth-grade students at SD Negeri Tegalrejo 1, Yogyakarta City, showed that 31 respondents achieved a very good academic performance (58.5%), while 22 respondents achieved a good performance (41.5%). The four categories used to assess academic performance in this research indicate that two categories, Good and Very Good, are more dominant than the others. This may be influenced by the support provided by the school, particularly teachers at SD Negeri Tegalrejo 1, Yogyakarta City, who implement intensive and contextual learning to enhance students' academic achievements. Intensive and contextual learning emphasizes the connection between the material learned and real-life situations that students can observe and analyze. In other words, this type of learning involves full student engagement to discover the material learned and apply it to real-life situations, thereby encouraging students to apply it in their lives.

Academic performance encompasses various aspects, including knowledge (cognitive aspect), attitudes and values (affective aspect), and skills (psychomotor aspect) acquired by students as a result of the learning process. This is often assessed in the form of grades or evaluations given by educators to measure students' achievements in various subjects or fields of study. Academic performance not only reflects how well students understand the subject matter but also how the learning process affects their attitudes, behaviors, and habits for the future. In other words, academic performance is not only related to mastery of knowledge but also to the holistic development of students towards achieving broader educational goals.

According to Fauzan (2021) and Rawung (2020), students' academic performance is influenced by two factors: internal and external. Internal factors, such as nutritional status and psychological factors, play a role in shaping students' ability to learn and develop. Meanwhile, external factors, such as socio-economic environment, school environment, and family support, also play a crucial role in determining students' academic performance. Nutritional status, as demonstrated in this study, is one of the important internal factors that can affect students' learning quality. Good nutrition is crucial for children's growth and development, including brain development and their learning abilities. Moreover, external factors such as the school and socio-economic environment also play crucial roles. Family and community social environments surrounding students can provide much-needed support. Parents' educational level, community knowledge, and access to facilities that support students' well-being (such as access to good nutrition) can influence academic performance. By understanding these factors, schools, parents, and policymakers can work together to create environments that support optimal student development. This includes providing adequate nutrition, motivation, and creating a conducive learning environment both at school and at home.

Evaluation is the final learning activity aimed at determining whether the achieved learning has produced the desired results or, in other words, is consistent with the educational goals set beforehand. Bloom's Theory or Bloom's Taxonomy is one tool that educators can use to assess students' achievements or learning outcomes. Bloom's Taxonomy is a framework used to organize and classify learning objectives into three different domains: First, the Cognitive Domain involves knowledge and understanding. This includes learners' ability to remember, understand, apply, analyze, synthesize, and evaluate information. Examples of evaluation activities in the cognitive domain include testing students' knowledge through multiple-choice questions or essay tests. Second, the Affective Domain relates to emotions, attitudes, and values. This encompasses feelings, attitudes, and values that develop during learning. Examples of evaluation activities in the affective domain include assessing changes in students' attitudes towards a topic or issue. Third, the Psychomotor Domain relates to physical abilities and motor skills. This includes students' ability to perform physical or practical tasks. Examples of evaluation activities in the psychomotor domain include measuring students' ability to perform practical tasks such as drawing, writing, or conducting experiments.

These three aspects of Bloom's Theory or Taxonomy determine a student's academic success if they can develop knowledge, skills, and attitudes. In practice, Bloom's theory can be applied to various subjects at all school levels, including primary school (SD). The cognitive, affective, and psychomotor aspects are criteria that educators can use to determine the success of a learning process. Therefore, the use of Bloom's Taxonomy is highly recommended as an assessment tool because these three aspects cover all aspects in the world of education or learning. By using this taxonomy, educators can plan evaluations that align with the intended learning goals. This helps in understanding the extent to which learners have achieved these goals and aids in improving learning in the future.

In this research, the evaluation of student learning outcomes at SD Negeri Tegalrejo 1, Yogyakarta City, focused solely on one aspect: the cognitive aspect. In this case, the cognitive aspect was evaluated based on the average semester-end grades across nine subjects: Islamic Education, Civic Education, Indonesian Language, Mathematics, Natural Sciences (IPA), Social Sciences (IPS), SBdP, Physical Education, and Javanese Language. Therefore, it is hoped that teachers at SD Negeri Tegalrejo 1, Yogyakarta City, can conduct evaluations to measure and assess their students' learning outcomes using Bloom's Taxonomy, which not only covers the cognitive aspect but also the affective and psychomotor aspects.

Conclusions

A study on the relationship between nutritional status and academic achievement of fifth-grade students at SD Negeri Tegalrejo 1, Yogyakarta City, showed that among the total sample, there was a balanced number of male and female students. Most students were twelve years old. The majority of

students had normal nutritional status, and many of them achieved very good academic performance. However, the study revealed that there was no significant relationship between nutritional status and students' academic achievement, with the P-value indicating statistical insignificance. This research contributes to the field by asserting that factors other than nutritional status may have greater influence on students' academic performance, thereby opening opportunities for further research into other factors affecting academic achievement.

References

Abdullah, A., & Norfai, N. (2019). Nutritional Analisis Status Gizi Dengan Prestasi Belajar Pada Siswa Di SDN Mawar 8 Kota Banjarmasin. *Jurnal Kesehatan Indonesia*, *9*(2), 53-58.

Abdullah, M. 2015. *Metode Penelitian Kuantitatif*. https://books.google.co.id. Dikases pada 12 Maret 2023 pukul 13.22 WIB

Alifariki. L. O. (2020). *Gizi Anak dan Stunting*. https://books.google.co.id. Diakses pada 12 Maret 2023 pukul 14.12 WIB.

Amalia, J. O., & Tyas, A. P. (2022). Edukasi Gizi Seimbang pada Anak-anak di Desa Bawuran Kecamatan Pleret, Kabupaten Bantul. *Jurnal PASOPATI, 4(1)*, 65-70.

Adawiah, N. J., Avianty, I., & Sari, M. M. (2019). Hubungan Faktor Sosiodemografi dengan Status Gizi pada Siswa di SDN Ciasmara 05 Kecamatan Pamijahan Kabupaten Bogor Tahun 2018. *Promotor*, *2*(1), 51-58.

Aziz, F., Nurjanah, F., & Sari, D. P. (2017). Aktualisasi ttb (teori taksonomi bloom) melalui drama kepahlawanan guna penanaman pendidikan karakter pada peserta didik. *FKIP e-PROCEEDING*, 715-724.

Budiman, L. A., Rosiyana, Sari, A. S., Safitri, S. J., Prasetyo, R. D., AlyaRizqina, H., Kasim, I. S. N. I., & Korwa, V. M. I. (2021). Analisis Status Gizi Menggunakan Pengukuran Indeks Massa Tubuh dan Beban Kerja dengan Metode 10 Denyut pada Tenaga Kesehatan. *NUTRIZONE (Nutrition Research and Development Journal), 1(1),* 6-15.

Banowati, L. 2015. *Ilmu gizi dasar (ed. 1)*. Yogyakarta: Budi Utama.

Cahyanto, E. B., Mulyani, S., Nugraheni, A., Sukamto, I. S., & Musfiroh, M. (2021). Hubungan status gizi dan prestasi belajar. *PLACENTUM: Jurnal Ilmiah Kesehatan dan Aplikasinya*, *9*(1), 124-128.

Chaerunisa, Z., & Latief, J. (2021). Pengaruh Disiplin Belajar Terhadap Prestasi Belajar IPS di Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(5), 2952-2960.

Dinas Kesehatan DIY. Profil kesehatan Daerah Istimewa Yogyakarta tahun 2019. Yogyakarta: Dinas Kesehatan DIY; 2020. https://dinkes.jogjaprov.go.id/profil. Diakses pada 14 Februari 2023 pukul 21.44 WIB.

Dicky. (2018). Hubungan indeks massa tubuh dengan prestasi belajar anak usia sekolah dasar [Skripsi, Medan: Universitas Sumatera Utara].

Djamaluddin, N., & Made, M. (2022). *Keperawatan paliatif dan menjelang ajal*. Kota Bandung-Jawa Barat: Media Sains Indonesia.

Food and Agriculture Organization (FAO). (2021). Jumlah penduduk yang kekurangan gizi di dunia pada tahun 2020. https://databoks.katadata.co.id/datapublish/2021/11/11/fao-768-juta-penduduk-dunia-menderita-kekurangan-gizi-pada-2020. Diakses pada 14 februari 2023 pukul 23.00 WIB.

Fauzan, M. A., Yesi, N., & Anggunan. (2021). Hubungan statu gizi dengan prestasi belajar. *Jurnal Ilmiah Kesehatan Sandi Husada, 10 (1),* 105 - 111.

Firdianti, A. (2018). *Implementasi manajemen berbasis sekolah dalam meningkatkan prestasi belajar*. books.google.co.id. Diakses pada 15 Maret 2023 pukul 15.30 WIB.

Ginting, L. A. (2019). Prinsip-prinsip etik yang dilakukan perawat berdasarkan persepsi pasien di RSUP H. Adam Malik [Skripsi, Medan: Universitas Sumatera Utara].

Harjatmo, T. P. 2018. *Buku ajar perencanaan program gizi*. Jakarta: Sagung Seto.

Hasrul, Hamzah, & Hafid, A. (2020). Pengaruh Pola Asuh Terhadap Status Gizi Anak. *Jurnal Ilmiah Kesehatan Sandi Husada, 9(2),* 792–797.

Hayati, F., Neviyarni., & Irdamurni. (2021). Karakteristik perkembangan siswa sekolah dasar : sebuah kajian literatur. *Jurnal Pendidikan Tambusai, 5 (1),* 1809 - 1815.

Sulaiman, Y. (2021). Hubungan Kebiasaan Sarapan Pagi Dan Status Gizi Terhadap Prestasi Belajar Siswa Di Sdn 58 Inpres Pangale Kelurahan Lembang Kabupaten Majene. *ENHANCEMENT: a journal of health science*, *2*(1), 48-54.

Indah Ainun Mardiyah. (2021). Hubungan status gizi dengan prestasi belajar siswa SMP Swasta al-manar kecamatan hamparan perak [Skripsi, Universitas Islam Negeri].

Idham, S., Hendri, N., Anton, K., Njung, H. S., & Damrah. (2022). Pengaruh kebugaran jasmani, status gizi, dan motivasi belajar terhadap hasil belajar PJOK. *Jurnal BASICEDU : Research & Learning in Elementary Education, 6 (3),* 4078-4089.

Kamilah, S. N., Supriati, R., Haryanto, H., & Atmaja, V. Y. (2022). Pemeriksaan Status Gizi berdasarkan Nilai Indeks Massa Tubuh pada Anak Usia 10-12 Tahun di SDN 159 Bengkulu Utara. *Indonesian Journal of Community Empowerment and Service (ICOMES)*, *2*(2), 95-100.

Kamila, A. D., Ani, M., & Nuryanto. (2018). Hubungan kecacingan dengan status gizi dengan prestasi belajar pada anak sekolah dasar kelas IV dan V di kelurahan bandaharjo semarang. *Journal of Nutrition College, 7 (2),* 77-83.

Kemenkes. (2020). Peraturan Menteri Kesehatan RI Nomor 2 Tahun 2020 Tentang Standar Antropometri Anak. *SELL Journal, 5(1),* 55. http://hukor.kemkes.go.id/uploads/produk_hukum/PMK_No__2_Th_2020_ttg_Standar_Antropom etri_Anak.pdf. Diakses pada 12 Februari 2023 pukul 20.00 WIB.

Kemenkes RI. (2018). *Laporan Nasional Riskesdas 2018*. Jakarta. Badan Penelitian dan Pengembangan Kesehatan Kemenkes RI. https://www.kemkes.go.id/article/view/18110200003/potret-sehat-indonesia-dari-rikesdas-2018.html. Diakses pada 27 Maret 2023 pukul 16.40 WIB.

Kemenkes. (2018). Buku saku pemantauan status gizi tahun 2017.

Kementerian Pendidikan dan Kebudayaan. Kurikulum Merdeka. (2021). https://kurikulum.kemdikbud.go.id/kurikulum-merdeka/#alur. Diakses pada 24 Februari 2023. Pukul 22.45.

Kemendikbud RI. (2019). Gizi dan kesehatan anak usia sekolah dasar. *Southeast Asian Ministers of Education Organization, Regional Centre for Food and Nutrition (SEAMEO RECFON).*

Kumala, T. 2017. *Dasar-dasar ilmu gizi: konsep dan penerapan pada asuhan keperawatan*. Yogyakarta: Tika Baru Press.

Laporan Hasil Riset Kesehatan Dasar. (2018). Badan LITBANGKES Kementerian Kesehatan Republik Indonesia. Diakses pada 18 Februari 2023. https://www.litbang.kemkes.go.id/laporan-riset-kesehatan-dasar-riskesdas/

Mauliya Widiastuti. (2020). *Hubungan status gizi dengan prestasi belajar siswa sekolah dasar* [Literature Review, Universitas 'Aisyiyah]

Maku, A., Ni Ketut, M. & Aan, D. (2018). Hubungan antara status gizi dengan prestasi belajar anak sekolah dasar di SDN ngringin depok sleman yogyakarta. *Caring: Jurnal Keperawatan, 7 (1),* 1-8. https://ejournal.poltekkesjogja.ac.id/index.php/caring/article/view/297. Diakses pada 23 Februari 2023 pukul 20.45 WIB.

Malykh, S. (2016). The role of personality traits and intelligence in academic achievement of Russian high school students. *Procedia - Social and Behavioral Sciences, 237,* 1304 - 1309.

Mann, J. & A. Stewart Truswell. 2016. *Essentials of human nutrition*. Jakarta: Buku kedokteran EGC.

Nuryanto, Pramono, A., Puruhita, N., & Muis, S. F. (2014). Pengaruh pendidikan gizi terhadap pengetahuan dan sikap tentang gizi anak Sekolah Dasar. Jurnal Gizi Indonesia, 3(1), 183.

Nurlan, F. (2019). *Buku Ajar: Metodelogi Penelitian Kuantitatif*. https://books.google.co.id. Diakses pada 9 Maret 2023 pukul 19.22 WIB

Nursalam. (2020). *Metodologi penelitian ilmu keperawatan: pendekatan praktis*. Jakarta: Salemba Medika.

Nawangwulan, K. 2020. *Buku saku gizi dasar bagi tenaga kesehatan*. Jakarta Timur: Trans Info Media

Priadana, S. H. (2021). *Metode Penelitian Kuantitatif*. https://books.google.co.id. Diakses pada 9 Maret 2023 pukul 20.34 WIB.

Par'i, H. M. (2019). *Penilaian status gizi: dilengkapi proses asuhan gizi terstandar*. Jakarta: EGC.

Rachmat, M. (2016). *Metodologi penelitian gizi dan kesehatan*. Jakarta: EGC.

Pakar Gizi Indonesia. 2017. *Ilmu gizi: Teori dan aplikasi*. Jakarta: Buku Kedokteran EGC.

Rawung, M. M., Herlina, I. S. W., & Damajanty, H. C. P. (2020). Hubungan status gizi dengan prestasi belajar siswa SD katolik st fransiskus xaverius kakaskasen kota tomohon. *E-Biomedik, 8 (1),* 11-18.

Ramdhan, M. (2021). Metode Penelitian. https://books.google.co.id. Diakses pada 15 Maret 2023 pukul 16.23 WIB.

Riset Kesehatan Dasar (Riskesdas). (2018). Badan Penelitian dan Pembangunan Kesehatan Kementrian RI tahun 2019. https://www.kemkes.go.id/article/view/19013100001/status-gizi-indonesia-alami-perbaikan.html. Diakses pada 18 Februari 2023 pukul 19.15 WIB.

Roflin, E., & Liberty, I. A. (2021). *Populasi, Sampel, Variabel Dalam Penelitian Kedokteran*. Penerbit NEM.

Rosyid, M. Z. (2021). Pretasi belajar. books.google.co.id. diakses pada 18 Februari 2023 pukul 22.44 WIB.

Sahid, M. H., Adisasmita, A. C., & Djuwita, R. (2022). Hubungan Status Gizi Dengan Prestasi Belajar Siswa Kelas 1-3 Sekolah Dasar. *Jurnal Epidemiologi Kesehatan Indonesia*, *5*(2), 77-84.

Sabani, F. (2019). Perkembangan anak-anak selama masa sekolah dasar (6–7 tahun). *Didaktika: Jurnal Kependidikan*, *8*(2), 89-100.

Septianti, N., & Rara, A. (2020). Pentingnya memahami karakteristik siswa sekolah dasar di SDN Cikokol 2. *Jurnal Islam Anak Usia Dini, 2 (1),* 7 -17.

Syafi'i, A., Tri, M., & Siti, K. R. (2018). Studi tentang prestasi belajar siswa dalam berbagai aspek dan faktor yang mempengaruhi. *Jurnal Komunikasi Pendidikan, 2 (2).*

Septikasari, M., (2018). Status gizi anak dan faktor yang mempengaruhi. https://books.google.co.id/. Diakses pada 13 Maret 2023.

Sugiyono. (2015). *Metode Penelitian Kuantitatif Kualitatif Dan R&D*. Bandung: Penerbit Alfabeta.

Siyoto. S. H. 2014. *Gizi, Pemantapan gizi, Diet, dan Obesitas*. Yogyakarta: Nuha Medika.

Suprapto, S. (2020). Nurse Compliance using Basic Personal Protective Equipment in Providing Health Services Nursing Actions. *International Journal of Medicine and Public Health, 10(3),* 119-121. https://doi.org/10.5530/ijmedph. Diakses pada 9 Maret 2023.

Sulistiawati, Y., Pratiwi, A. R., Fitriana, & Anasiru, M. A. (2019). Edukasi gizi seimbang pada anak usia sekolah di SD N 2 Wonosari kecamatan Gadingrejo kabupaten Pringsewu tahun 2019. *Jurnal Kesehatan Manarang, 1(1),* 43

Setyawati. (2018). *Buku ajar dasar ilmu gizi kesehatan masyarakat*. Yogyakarta: Grup penerbitan CV Budi Utama.

Umar, A., Syamsuar, A., & Syahrastani. (2018). Hubungan antara motivasi belajar dengan status gizi terhadap hasil belajar PENJASORKES di SD negeri 40 sungai lareh kota padang. *Jurnal Menssana, 3 (2),* 2622-0295.

Utama, L. J., & Lina, Y. (2019). Status Gizi, Pola Makan Dan Prestasi Belajar Siswa Sekolah Dasar Di Kota Kupang. *CHMK Health Journal, 3 (1).*

Utama. (2021). *Dasar-dasar penanganan gizi anak sekolah.* Kota Bandung: Media Sains Indonesia. https://books.google.co.id/. Diakses pada 1 April 2023 pukul 13.00 WIB.

Ulilalbab, A. (2017). Obesitas anak usia sekolah. Yogyakarta: Grup Penerbitan CV Budi Utama. https://books.google.co.id/. Diakses pada 17 Agustus 2023 pukul 22.30 WIB.

UNICEF Indonesia. (2019). Status Anak Dunia (Anak, Pangan dan Gizi). https://www.unicef.org/indonesia/id/status-anak-dunia-2019. Diakses pada 2 April 2023 pukul 21.20 WIB.

Waritsman, A. (2020). Hubungan motivasi belajar dengan prestasi belajar matematika siswa. *Tolis Ilmiah ; Jurnal penelitian, 2 (1),* 28 – 32

Widiastiwi, W., Ati, Z., & Ikha, D. (2021). Pelatihan Dan Sosialisasi Pemanfaatan Tik Penilaian Status Gizi Anak Berdasarkan Standar Antropometri. *IKRAITH-ABDIMAS : Jurnal Pengabdian Kepada Masyarakat, 4 (2).*

Yaco, N., & Urwatil, W. A. (2018). Hubungan status gizi dengan prestasi belajar pada siswa di SMK negeri polewali kecamatan polewali kabupaten polewali mandar. *Jurnal Kesehatan Masyarakat, 4 (2).* https://journal.lppmunasman.ac.id/index.php/jikm/article/view/252. Diakses pada 23 Februari 2023.

Yulianti, M. (2022). Faktor-faktor yang Berhubungan dengan Penerapan Gizi Seimbang pada Balita di Masa Pandemi COVID-19. *JIKSA - Jurnal Ilmu Keperawatan Sebelas April, 4(1),* 1-10.