



ANALYSIS OF NUTRITIONAL STATUS AMONG ADOLESCENT GIRLS

Surani*, Vivi Silawati, Rukmaini

Faculty of Health Science, Universitas Nasional, Jl. Sawo Manila No.61, Pejaten Barat, Ps. Minggu, Jakarta Selatan, Jakarta 12520, Indonesia

*ranihandoko12@gmail.com

ABSTRACT

Nutrition is a crucial component and plays a central role in achieving 13 of the 17 Sustainable Development Goals (SDGs). Through improving nutrition, many other goals can be achieved, leading to the betterment of a nation. The general objective of this study is to determine the influence of nutritional status and its impact on the health of adolescent girls in the Tapos District, Depok City. The type of research used is quantitative, where the results of calculations or measurements are in numerical form. This study employed a cross-sectional approach. The population in this study were all female adolescents in grades X, XI, XII at SMK Mutiara and SMKN 1 Tapos Depok, which were 254 people. The sampling technique used in this research is total sampling. The sample used in this study was the total population, namely female adolescents in grades X, XI, XII of SMK Mutiara and SMKN 1 Tapos Depok. The research data collection procedure begins with the researcher taking several steps, namely taking care of the research permit letter at the National University, collecting data, both primary data and secondary data in the Tapos Depok District Area, requesting research permission from the Principal of the Tapos Depok District Area, explaining to potential respondents about the research and signing informed consent if they are willing to be respondents, explaining how to fill out the questionnaire to respondents, respondents fill out all the questions in the questionnaire that have been given by the researcher, and if they have finished the questionnaire is submitted to the researcher. After the data is collected, data collection is carried out, then data processing and data analysis are carried out, and the research results report is prepared. Univariate analysis is the analysis of each variable from the research results to create a frequency distribution and percentage of each variable. Bivariate analysis is an analysis carried out on two variables that are suspected to be related or correlated, namely using chi square. The multivariate data analysis technique used in this study is multiple logistic regression analysis.. Body image on nutritional status in female adolescents obtained a p value of 0.001. Eating patterns on nutritional status in female adolescents obtained a p value of 0.001. Nutrition knowledge on nutritional status in female adolescents obtained a p value of 0.001. Snacking behavior on nutritional status in female adolescents obtained a p value of 0.001. Parental income on nutritional status in female adolescents obtained a p value of 0.001. Health worker support on nutritional status in female adolescents obtained a p value of 0.001. Parental support on nutritional status in female adolescents obtained a p value of 0.001. Nutritional status on physical health in female adolescents obtained a p value of 0.001. Nutritional status on mental health in female adolescents obtained a p value of 0.001. Based on the 10 variables, the most significantly correlated variable is body weight, based on the chi-square statistical test, which showed a p-value of 0.001.

Keywords: body image; eating patterns; healthcare professional support; knowledge; mental health nutrition; nutritional status; parental income; physical health; snacking behavior

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INTRODUCTION

Nutrition plays a pivotal role in achieving 13 out of 17 Sustainable Development Goals (SDGs), with nutritional interventions for adolescents being particularly crucial as habits established during this period often persist into adulthood (Femyliati & Kurniasari, 2021; Hayati et al., 2023). Adolescence is a time of rapid growth, demanding a significant increase in energy, protein, and micronutrient intake. However, many adolescents are currently facing a "triple burden" of malnutrition, encompassing undernutrition (stunting and wasting), obesity, and micronutrient deficiencies such as anemia (Parewasi, 2021). Data from the 2023 Indonesian Health Survey (SKI) highlight the high prevalence of these issues among adolescents, confirming the severity of this public health challenge in Indonesia (Badan Kebijakan Pembangunan Kesehatan, 2024). Inadequate nutrition and healthcare for adolescent girls, in particular, elevate the risk of pregnancy and birth

complications in their future, perpetuating a vicious cycle of poor health outcomes (Bimantara et al., 2019).

The etiology of nutritional problems in adolescents is multifaceted, stemming from both indirect factors like insufficient adolescent-friendly and gender-responsive programs and inadequate school facilities, and direct factors such as poor dietary habits and physical inactivity (Juzailah & Ilmi, 2022). Irregular eating patterns, a preference for unhealthy foods, and psychosocial factors—including distorted body image—are major contributors (Salwa Shalimar et al., 2024; Azkaa Khairunnisa et al., 2023). Numerous studies have established a significant relationship between dietary patterns and body image and the nutritional status of adolescents. For instance, findings from Triwahyuningsih et al. (2024) and Margiyanti (2021) demonstrate a strong correlation between eating habits and body image with nutritional status, underscoring the need for interventions that address behavioral and psychological aspects in addition to simply improving nutrient intake (Rahayu & Fitriana, 2020).

In response to these challenges, the government has implemented various initiatives, including School Health Services (UKS) and Adolescent-Friendly Health Services (PKPR) (Pramardika et al., 2022). The concept of the First 1000 Days has been expanded to the First 8000 Days, emphasizing the critical importance of early nutritional intervention in adolescence, especially for girls, to break the intergenerational cycle of malnutrition (Sari et al., 2022). A preliminary study at SMK Mutiara in Depok revealed a significant prevalence of underweight and overweight students, alongside misconceptions about body image. This highlights the urgent need for comprehensive research and effective, multi-sectoral interventions that take into account the complex interplay of dietary habits, physical activity, and body image to improve the nutritional status and overall health of adolescent girls. The general objective of this study is to determine the influence of nutritional status and its impact on the health of adolescent girls in the Tapos area of Depok City.

METHOD

This study employed a quantitative cross-sectional design to analyse the nutritional status and associated factors among 254 female students in grades X–XII at SMK Mutiara and SMKN 1 Tapos, Depok, in 2024. A total population sampling technique was used, with inclusion criteria being students who were present and willing to participate, while exclusion criteria included illness or absence. The dependent variable was nutritional status measured using Body Mass Index (BMI), while independent variables included body image, eating patterns, nutritional knowledge, snacking behaviour, parental income, health worker support, and parental support. Data were collected using structured questionnaires and anthropometric measurements, then analysed descriptively and with chi-square tests, which showed significant associations between nutritional status and all variables ($p = 0.001$), with body weight demonstrating the strongest correlation.

RESULT

The study found a high prevalence of abnormal nutritional status (59.3%) and negative body image (58.9%) among the female adolescents. While most participants reported healthy eating patterns (58.1%), a significant majority still engaged in unhealthy snacking (60.1%). Knowledge of nutrition was almost evenly split between good (51%) and poor (49%). More than half of the adolescents experienced illness (51.7%) during the study period. Family and community support were identified as key issues. The majority of parents had high income (59.3%), but parental support was low (72.5%), as was support from health workers (61.6%). The overall health outcomes were nearly balanced, with physical and mental health being reported as good in 50.8% of cases and poor in 49.2%.

Table 1.
Distribution of Respondents' Characteristics (n = 258)

Variable	Category	f	%
Nutritional Status	Normal	105	40.7
	Abnormal	153	59.3
Body Image	Positive	106	41.1
	Negative	152	58.9
Eating Patterns	Healthy	150	58.1
	Unhealthy	108	41.9
Snacking Behaviour	Healthy	103	39.9
	Unhealthy	155	60.1
Nutrition Knowledge	Good	132	51.0
	Poor	126	49.0
Illness	Yes	133	51.7
	No	125	48.3
Parental Income	High	153	59.3
	Low	105	40.7
Parental Support	High	71	27.5
	Low	187	72.5
Health Worker Support	High	99	38.4
	Low	159	61.6
Physical Health	Good	131	50.8
	Poor	127	49.2
Mental Health	Good	131	50.8
	Poor	127	49.2

Table.2

Bivariate Analysis on Factors Associated with Nutritional Status in Female Adolescents (n = 254)

Variable	p-value	Odds Ratio (OR)	95% CI
Body Image	0.001	344.0	120.5–980.2
Eating Patterns	0.001	4.9	2.1–11.2
Nutrition Knowledge	0.001	5.2	2.3–11.8
Snacking Behaviour	0.001	36.0	15.4–84.2
Illness	0.001	5.1	2.0–12.6
Parental Income	0.001	4.9	2.0–11.7
Parental Support	0.001	11.0	4.5–27.1
Health Worker Support	0.001	16.0	3.5–76.8

The bivariate analysis revealed a significant association between all studied variables and the nutritional status of female adolescents ($p = 0.001$). This finding confirms that these factors are not isolated but are interconnected and collectively influence the nutritional condition of adolescents. The most potent factor identified was body image, with an impressive odds ratio (OR) of 344.0. This indicates that female adolescents with a negative body image are extraordinarily more likely to have an abnormal nutritional status—up to 344 times more so. This finding is highly significant, underscoring the powerful impact of psychological factors on physical health.

In addition, several other factors showed significant associations, though to a lesser extent: Eating patterns (OR = 4.9), Nutrition knowledge (OR = 5.2), Snacking behavior (OR = 36.0), Illness (OR = 5.1), Parental support (OR = 11.0), Health worker support (OR = 16.0), Parental income (OR = 4.9). These results underscore that adolescent nutritional status is not solely determined by food intake but is also influenced by crucial psychosocial and environmental factors, such as self-perception, family support, and access to health services. Effective interventions, therefore, must adopt a holistic approach.

Table 3.

Multivariate Logistic Regression Analysis of Factors Associated with Nutritional Status among Female Adolescents (n = 258)

Variable	Adjusted OR (AOR)	95% CI	p-value
Body Image	210.5	75.2 – 589.1	0.001
Snacking Behaviour	22.7	9.8 – 52.3	0.001
Health Worker Support	10.4	4.5 – 23.8	0.001
Parental Support	7.2	3.1 – 16.6	0.001
Nutrition Knowledge	3.8	1.6 – 8.7	0.002
Illness	2.9	1.3 – 6.2	0.005
Parental Income	2.6	1.1 – 6.0	0.021
Eating Patterns	2.4	1.0 – 5.6	0.045

The multivariate logistic regression analysis revealed that body image was the most dominant factor influencing nutritional status among female adolescents (AOR = 210.5; 95% CI: 75.2– 589.1; p = 0.001). Other significant predictors included snacking behaviour (AOR = 22.7), health worker support (AOR = 10.4), parental support (AOR = 7.2), nutrition knowledge (AOR = 3.8), illness (AOR = 2.9), parental income (AOR = 2.6), and eating patterns (AOR = 2.4). These findings indicate that both psychological and environmental factors play a crucial role in determining adolescents’ nutritional status.

DISCUSSION

This research confirms a powerful link between a negative body image and an abnormal nutritional status in adolescent girls. Our findings show that 96.1% of adolescents with a negative body image had an abnormal nutritional status. The statistical analysis supports this with an extremely high odds ratio (OR) of 344.143, meaning these girls are 344 times more likely to have nutritional problems. This result highlights that psychological factors are far more influential than previously thought and that interventions must address self-perception, not just diet. The study also found a significant connection between unhealthy eating patterns and poor nutritional status (OR = 4.843). A key finding here is the discrepancy between what adolescents say about their diet and what they actually do; despite reporting healthy eating, a majority (60.1%) engaged in unhealthy snacking. This behavior, often involving processed foods high in fat, sugar, and salt, is a major risk factor. Finally, while nutrition knowledge was a contributing factor (OR = 5.571), its impact was less pronounced. While having better knowledge generally leads to healthier choices, the study found that this knowledge isn't always put into practice, often due to external influences. Therefore, a holistic approach is crucial. Addressing psychological issues, like negative body image, is essential alongside providing nutrition education and promoting healthier eating habits.

CONCLUSION

Based on the findings and discussion, it can be concluded that a strong and significant relationship exists between various factors and the nutritional status of adolescent girls in the Tapos, Depok area. This connection is highly multidimensional, involving psychological, behavioral, and environmental aspects. Specifically, body image is the single most influential determinant. This finding highlights the importance of health interventions that not only provide dietary advice but also integrate psychological support to address self-perception and body dissatisfaction. Furthermore, other factors also play a crucial role. A lack of support from health workers and parents significantly increases the risk of abnormal nutritional status. Unhealthy snacking behavior is also a major contributor. These results confirm that even when adolescents possess good nutrition knowledge, the absence of a supportive environment and the presence of unhealthy habits can severely undermine their nutritional health. To effectively address this issue, health programs, especially in midwifery, must adopt a holistic approach. The focus should not solely be on educating adolescents about healthy eating, but also on empowering them to build a positive body image and providing a strong support network.

REFERENCES

- Azkaa Khairunnisa, Said, I., & Wikanti, C. Z. A. (2023). Hubungan Pola Makan, Aktivitas Fisik, dan Gangguan Menstruasi dengan Status Gizi Remaja Putri di SMAN 1 Tangerang Selatan. *Media Gizi Ilmiah Indonesia*, 1(2), 76–84. <https://doi.org/10.62358/mgii.v1i2.13>
- Badan Kebijakan Pembangunan Kesehatan. (2024). Survei Kesehatan Indonesia (SKI) 2023 Dalam Angka.
- Bimantara, M. D., Adriani, M., & Suminar., D. R. (2019). Hubungan Citra Tubuh dengan Status Gizi pada Siswi di SMA Negeri 9 Surabaya. *Amerta Nutr*, 85–88.
- Cash, T. F. (2002). *Multidimensional Body-Self Relations Questionnaire: Manual*. Retrieved from <https://www.body-images.com>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385–396.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Lawrence Erlbaum Associates.
- Damayanti, E. R. (2022). Hubungan Pola Makan, Aktivitas Fisik, Dan Citra Tubuh Dengan Status Gizi Lebih Pada Remaja Putri Di Sma Negeri 3 Tambun Selatan. *Indonesian Journal of Health Development*, 4(1), 35–45. <https://doi.org/10.52021/ijhd.v4i1.69>
- Dewi, M., & Ulfah, M. (2021). *Buku Ajar Remaja dan Pranikah untuk Mahasiswa Profesi Bidan*. Universitas Brawijaya Press.
- Dwilovianita, Y., Annisa, E., & Parlaungan, B. (2022). Hubungan Karakteristik Nyeri Dan Kecemasan Pasien Yang Menjalani Kemoterapi. *Jurnal Penelitian Perawat Profesional*, 4(1), 17–26.
- Epstein, J. L. (2001). *School, Family, and Community Partnerships: Preparing Educators and Improving Schools*. Routledge.
- Faridatus Sabiah, S., Saputra Nasution, A., & Jayanti, R. (2023). Analisis Status Gizi Remaja di SMP Miftahul Huda Ibs Bogor Tahun 2022. *Promotor*, 6(4), 425–430. <https://doi.org/10.32832/pro.v6i4.265>
- Femyliati, R., & Kurniasari, R. (2021). Pemanfaatan Media Kreatif Untuk Edukasi Gizi Pada Remaja (Literature Review). *Hearty*, 10(1), 16. <https://doi.org/10.32832/hearty.v10i1.4732>
- Fitriana, K. (2022). Hubungan Eating Disorder dan Tingkat Pengetahuan Diet dengan Status Gizi Remaja Putri. *Nutrizione: Nutrition Research And Development Journal*, 2(2), 1–9. <https://doi.org/10.15294/nutrizione.v2i2.58060>
- Ghozali, I. (2021). *plikasi Analisis Multivariat (edisi ke-10)*. Badan Penerbit Universitas Diponegoro. (10th ed.). file:///C:/Users/ASUS/Downloads/463-Article Text-856-1-10-20220719.pdf
- Gibson, R. S. (2005). *Principles of Nutritional Assessment*. Oxford University Press.
- Hafiza, D. (2020). The Correlation Between Eating Habits And Nutritional Status On Teenager In YLPI Junior High School Pekanbaru. *Jurnal Medika Utama*, 2(1).
- Hayati, A. W., Husnan, H., & Roziana, R. (2023). Pelatihan Pemanfaatan Buku “Gizi Seimbang Remaja: Cegah Stunting” untuk Meningkatkan Pola Konsumsi Pangan Remaja. *Jurnal Kesehatan Komunitas*, 9(1), 85–94. <https://doi.org/10.25311/keskom.Vol9.Iss1.1371>
- Herdiani, T. N., Manujung, V. H., & Mutiara, V. S. (2021). Study Literature Review Faktor-Faktor yang Berhubungan dengan Status Gizi Remaja Putri. *CHMK Midwifery Scientific Journal*, 4(1), 243–257.
- Ismayanti, D. (2020). The relationship of body shape perception, eating disorders, nutritional knowledge and food intake with nutritional status adolescent girls in Ayodya Pala. *ARGIPA (Arsip Gizi Dan Pangan)*, 4(2), 74–84. <https://doi.org/10.22236/argipa.v4i2.3829>
- Jatu Safitri Cahyahati, Apoina Kartini, M. Z. R. (2018). Hubungan Asupan Makanan (Lemak, Natrium, Magnesium) Dan Gaya Hidup Dengan Tekanan Darah Pada Lansia Daerah Pesisir (Studi Di Wilayah Kerja Puskesmas Tegal Barat Kota Tegal). 6.
- Johnson, F., Wardle, J., & Griffith, J. (2002). The Adolescent Food Habits Checklist: Reliability and validity of a measure of healthy eating behaviour in adolescents. *European Journal of Clinical*

- Nutrition, 56(7), 644-649.
- Juzailah, J., & Ilmi, I. M. B. (2022). Hubungan Emotional Eating, Citra Tubuh, dan Tingkat Stres dengan IMT/U Remaja Putri di SMK Negeri 41 Jakarta Tahun 2022. *Jurnal Gizi Dan Kesehatan*, 14(2), 271–284.
- Karno, D. A., Fitriani, A., & Iswahyudi. (2024). Faktor-Faktor yang Mempengaruhi Underweight pada Remaja SMA di Bekasi. *Jgk*, 16(1), 113–123.
- Litaay, C., Paotiana, M., Elisanti, E., Fitriyani, D., Agus, P. P., Permadhi, I., Indira, A., Puspasari, G., Hidayat, M., Priyanti, E., & Darsono, L. (2021). *Kebutuhan Gizi Seimbang*. Zahir Publishing.
- Maslakhah, N. M., & Prameswari, G. N. (2022). Pengetahuan Gizi, Kebiasaan Makan, dan Kebiasaan Olahraga dengan Status Gizi Lebih Remaja Putri Usia 16-18 Tahun. *Indonesian Journal of Public Health and Nutrition*, 2(1), 52–59.
- Ma'sunnah, K., Pribadi, H. P., & Agnesia, D. (2021). Hubungan Pengetahuan Gizi, Persepsi Citra Tubuh Dan Gangguan Makan Dengan Status Gizi Remaja Putri Sekolah Menengah Kejuruan di Kabupaten Gresik. *Ghidza Media Jurnal*, 3(1), 207. <https://doi.org/10.30587/ghidzamediajurnal.v3i1.3084>
- Octavia, Z. F. (2020). Frekuensi Dan Kontribusi Energi Dari Sarapan Meningkatkan Status Gizi Remaja Putri. *JURNAL RISET GIZI*, 8(1), 32–36. <https://doi.org/10.31983/jrg.v8i1.5749>
- Parewasi, D. F. R. (2021). Hubungan Asupan Energi Dan Asupan Zat Gizi Makro Dengan Status Gizi Remaja Putri Di Pondok Pesantren Darul Aman Gombara Makassar Tahun 2020. *Jurnal Gizi Masyarakat Indonesia*, 10(1).
- Pramardika, D. D., Kasaluhe, M. D., Tooy, G. C., & Bajak, C. M. A. (2022). *Buku Ajar Gizi dan Diet*. PT Nasya Expanding Management.
- Raharjati, T. M., Hidayati, L., & Muwakhidah. (2023). Asupan dan Status Gizi Remaja Putri di Kabupaten Sukoharjo. *Suara Forikes (Journal of Health Research Forikes Voice)*, 14(3).
- Rahayu, P. S., Suparman, S., Dewi, M., Agung, F., & Hastuti, W. (2022). Asupan Energi, Asupan Protein, Aktifitas Fisik Dan Status Gizi Pada Remaja Putri Putri Di Pondok Pesantren. *Jurnal Kesehatan Siliwangi*, 2(3), 995–1003. <https://doi.org/10.34011/jks.v2i3.888>
- Rahayu, T. B., & Fitriana. (2020). Analisis Faktor-Faktor Yang Mempengaruhi Status Gizi Remaja Putri. *Jurnal Vokasi Kesehatan*, 6(1), 46–51. <https://doi.org/10.30602/jvk.v6i1.158>
- Rorimpandei, C. Ch., Kapantow, N. H., & Malonda, N. S. H. (2020). Hubungan Antara Asupan Zat Gizi Makro Dengan Status Gizi Pada Remaja Putri Di Desa Kayuuwi Dan Kayuuwi Satu Kecamatan Kawangkoan Barat. *KESMAS: Jurnal Kesehatan Masyarakat Universitas Sam Ratulangi*, 9(4), 125–130.
- Rusdi, F. Y., Helmizar, H., & Rahmy, H. A. (2021). Pengaruh Edukasi Gizi Menggunakan Instagram terhadap Perubahan Perilaku Gizi Seimbang Untuk Pencegahan Anemia Pada Remaja Putri di SMAN 2 Padang. *Journal of Nutrition College*, 10(1), 31–38. <https://doi.org/10.14710/jnc.v10i1.29271>
- Salwa Shalimar, Intje Picauly, & Marselinus Laga Nur. (2024). Pengaruh Tingkat Konsumsi Zat Gizi Makro, Pengetahuan tentang Gizi dan Body Image terhadap IMT Remaja Putri di MAN 2 Manggarai. *SEHATMAS: Jurnal Ilmiah Kesehatan Masyarakat*, 3(1), 82–91. <https://doi.org/10.55123/sehatmas.v3i1.2555>
- Sari, P., Hilmanto, D., Herawati, D. M. D., Dhamayanti, M., & Ma'ruf, T. L. H. (2022). *Buku Saku Pelayanan Kesehatan Remaja*. PT Nasya Expanding Management.
- Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviors. *Journal of the American Dietetic Association*, 102(3), S40S51.
- Susyanto, B. E., & Fadhilah, W. (2023). *Edukasi Gizi Remaja*. CV Budi Utama.
- Triwahyuningsih, R. Y., Kumalasary, D., Hidayah, F. N., & Iskandar, S. F. (2024). Faktor –Faktor yang Mempengaruhi Status Gizi Pada Remaja Putri Di Desa Karang Anyar, Kecamatan Jati Agung. *Jurnal Kesehatan Tambusai*, 5(2), 4209–4216. <https://doi.org/10.21111/dnj.v8i1.10963>
- UNICEF. (2019). *The State of the World's Children: Children, Food and Nutrition*. United Nations Children's Fund (UNICEF).