

Nutritional Status And Psychological Resilience in Middle Adolescent of MAN Bangkalan

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Abstract: The aim of this study was to describe the body mass index (BMI), resilience, self-development, and nutritional health of adolescents at MAN bangkalan. Adolescence is a period of tremendous physical growth and resilience, making teenagers susceptible to nutritional issues and psychological challenges. This study used a descriptive quantitative design with 55 respondents selected through purposive sampling. Data were collected using a modified Connor-Davidson Resilience Questionnaire and anthropometric measurements (height and weight). The data were analyzed using descriptive statistics such as mean, standard deviation, frequency distribution, and percentage. The findings showed that although most respondents had a normal BMI 52.7%, a considerable proportion were underweight 63.6% and demonstrated suboptimal levels of psychological development. The study concluded that adolescents at MAN bangkalan required optimization of both nutritional status and resilience to better support their learning processes during this developmental stage. Integrated interventions are needed, including mental health promotion, resilience building, nutrition education, and consistent support from both family and school.

1 INTRODUCTION

Adolescence was a crucial transitional period between childhood and adulthood, characterized by rapid social, psychological, and physical changes. During this stage, adolescents experienced accelerated physical growth, complex emotional development, and identity formation, which made them vulnerable to various stressors. Since the risk of mental health problems increased among adolescents with inadequate nutrition or poor health, it was important to focus on factors that supported optimal development (Saewyc, 2011).

Adolescent mental health problems were strongly associated with daily habits such as eating

and physical activity. The HBSC study in Greece (2018) showed strong correlations between adolescent mental health indicators (psychiatric symptoms, life satisfaction, body satisfaction) and eating habits, especially breakfast quality. Physical activity enhanced these benefits, while obesity reduced them. In addition, global evidence showed that the prevalence of overweight and obesity among adolescents increased rapidly, leading to both physical and psychological challenges. The Body Mass Index (BMI) was widely used as an objective tool to evaluate nutritional status and health among adolescents (Wa Ode Siti Nur Asnia et al., 2025).

The prevalence of resilience problems among adolescents also remained a global concern. A cross-

sectional study in Peru reported that only 17.3% of adolescents had high resilience, while the majority (82.7%) demonstrated low resilience. Other studies showed varying prevalence, ranging from 20% to 57% depending on the population and measurement instruments used. These findings suggested that many adolescents were at risk of having limited capacity to cope with stressors, which directly influenced their learning performance and long-term well-being (Renyonet et al., 2024).

Because diet quality was closely linked to mental health and resilience, it was important to assess nutritional status as well. Several observational studies reported associations between poor diet quality (low breakfast quality, high consumption of sugary drinks and processed food) and lower mental well-being, including resilience. On the other hand, healthy eating habits gave adolescents more energy and focus, supported learning, and enhanced resilience, while poor eating habits hindered both cognitive and physical development (Renyonet et al., 2024).

Nutritional problems among Indonesian adolescents were also significant. The 2018 National Basic Health Research (Riskesdas) showed that the prevalence of stunting among toddlers was 30.8%, decreasing from 37.2% in 2013. Among adolescents, short stature was found in 25.7% of those aged 13–15 years and 26.9% of those aged 16–18 years. In addition, 17.7% of toddlers suffered from undernutrition, 10.2% faced wasting problems, and more than 10% of adolescents experienced obesity. About 23% of adolescent girls aged 14–18 years were anemic (Kesehatan, 2018). The 2024 Indonesian Nutrition Status Survey (SSGI) also showed that East Java had the second lowest prevalence of stunting in

Indonesia (14.7%), but overweight and obesity were still common among adolescents, especially in urban areas (Kementerian Kesehatan Republik Indonesia, 2025).

Considering the bidirectional relationship between nutrition and resilience, it was urgent to describe the magnitude of both nutritional status and psychological resilience among adolescents in the local context. Such descriptive evidence was essential as a foundation for designing comprehensive interventions, including mental health promotion, resilience building, nutrition education, and family as well as school support. Therefore, this study aimed to describe the nutritional status (BMI/anthropometry) and resilience of adolescents at MAN bangkalan

2 METHOD

Research Design

This study used a quantitative design with a descriptive approach. The purpose of this design was to describe the characteristics of the participants and the distribution of the study variables resilience, Body Mass Index (BMI), body weight, and height among adolescents at MAN bangkalan.

Population and Sample

All adolescents who were registered at MAN bangkalan were the research population. Purposive sampling, which was selection based on predetermined criteria, was used to determine the sample. Adolescents who were registered at MAN bangkalan, agreed to participate, and completed the questionnaire were eligible to be included. Adolescents who did not complete the questionnaire

or were absent during data collection were excluded. A total of 55 individuals were respondents.

Variables in the Research

The following factors were analyzed in this research:

- Respondent attributes, including height, weight, sex, and Body Mass Index (BMI).
- Resilience, which was the ability of a person to overcome difficulties.

Research Instruments

- Anthropometric measurements and observation were used to collect information about the characteristics of respondents. A digital scale with 0.1 kg accuracy was used to measure body weight, and a micrometer with 0.1 cm accuracy was used to measure height. Using the formula $BW \text{ (kg)}/BH^2 \text{ (m}^2\text{)}$, Body Mass Index (BMI) was calculated and classified according to WHO guidelines.
- The modified Connor-Davidson Resilience Scale (CD-RISC), which had categories of low, medium, and high scores, was used to measure resilience.

Data Collection Methods

Anthropometric measurements using general measuring tools, direct (offline) classroom questionnaire completion, and short interviews to ensure the completeness of respondent data were the methods used to collect data.

Data Analysis Methods

The data were analyzed using quantitative descriptive statistics. For each research variable, the frequency

distribution and percentage were calculated as part of the analysis. The research findings were then presented using descriptive narratives and distribution tables.

3 RESULT

Research data in the form of descriptive statistics could be seen in Table 1, which presented the mean and standard deviation of respondents' age, anthropometric measurements (weight, height, BMI), and psychological scores (resilience, self-development, and positive emotion)

Table 1. Descriptive statistics of respondents were presented

variabel	Mean (\pm SD)
Age (years)	16 (\pm 0,0)
BB (kg)	53,82 (\pm 12,48)
TB (cm)	159,17 (\pm 6,83)
iMB	21,24 (\pm 4,56)
resilience score	59,91 (\pm 9,31)
self-development score	16,81 (\pm 2,85)
positive emotion score	13,09 (\pm 2,02)

Based on descriptive analysis, the average age of the respondents was 16 years (\pm 0.0). The average height of the respondents was 53.82 cm (\pm 12.48), the average weight was 159.17 kg (\pm 6.84), and the average Body Mass Index (BMI) was 21.24 (\pm 4.56), all of which were within the normal range. A fairly good level of resilience was shown by the respondents' resilience score, which averaged 59.91 (\pm 9.31) from a psychological perspective. The positive emotion score was 13.09 (\pm 2.02), which indicated a tendency to have positive feelings among the respondents, and the self-development score was 16.81 (\pm 2.85), which indicated a moderate to high level of self-development.

Table 2. Distribution of respondents was based on nutritional status and related variables

Variabel	Nutritional Status (exp)				The total number	
	Normal		Obesitas		n	%
	n	%	n	%		
Gender						
Male	14	60,0%	9	39,1%	23	100,0%
female	21	75,0%	7	25,0%	28	100,0%
Resilience						
Not resilient	21	60,0%	10	62,5%	35	100,0%
resilient	14	40,0%	6	37,5%	16	100,0%
Development growth (part of resilience)						
Had not developed	21	67,7%	10	32,3%	31	100,0%
developed	14	70,0%	6	30,0%	20	100,0%
Positive emosional (part of reilience)						
Was low	0	0,0%	2	100,0%	39	100,0%
was high	39	100,0%	14	87,5%	16	100,0%
Body mass index (BMI)						
Was underweight	7	50,0%	7	50,0%	50,0%	100,0%
Was normal	27	93,1%	2	6,9%	6,9%	100,0%
Was overweight	1	20,0%	4	80,0%	80,0%	100,0%
Was obese	0	0,0	3	100,0%	100,0%	100,0%
Body weight status						
Was under	15	65,2%	8	34,8%	23	100,0%
Was adequate	29	71,4%	8	28,6%	28	100,0%
Height status						
Was less	10	76,9%	3	23,1%	13	100,0%
Was adequate	25	65,8%	13	34,2%	38	100,0%

The research results showed that the majority of respondents were female (75.0%). In the psychological aspect, most respondents were in the developed category (67.7%) with high positive emotions (100,0%). In terms of nutritional status, most respondents were in the normal category (67.5%), and they also had sufficient body weight status (71.0%) and sufficient height status (69.4%).

4 DISCUSSION

The findings of this research provided a general overview of nutritional status, Body Mass Index (BMI), and psychological aspects related to

resilience and self-development among adolescents at MAN Bangkalan. The majority of respondents were female (75.0%), with an average age of 16 years. Anthropometric measurements showed that most adolescents had a BMI within the normal range (52.7%). However, there was a significant proportion classified as underweight (29.1%), which showed the coexistence of normal nutritional status and malnutrition within the same population. This condition reflected the double burden of malnutrition that was still common in Indonesia (Kementerian Kesehatan Republik Indonesia, 2025)

The prevalence of underweight adolescents emphasized the need for comprehensive nutritional interventions. Low body weight during adolescence

could cause growth retardation, decreased learning concentration, and increased vulnerability to diseases.(Wa Ode Siti Nur Asnia et al., 2025)

On the other hand, the existence of overweight and obesity, although in lower proportions, also indicated the risk of non-communicable diseases in the future (Baird et al., 2025). These findings were consistent with previous research that showed adolescence was a critical period vulnerable to both undernutrition and overnutrition.(Saewyc, 2011)

The psychological aspects measured using the modified Connor-Davidson Resilience Scale (CD-RISC) showed that the average resilience score was moderate (mean = 59.91 ± 9.31). Most respondents were in the “developing” category of self-development (67.7%) and had relatively high positive emotions (100%). This showed that although they faced nutritional challenges, adolescents still had adaptive coping abilities and positive emotional tendencies. However, resilience levels were not optimal, especially among those with poor nutritional status. Previous studies in Indonesia reported that adolescents with malnutrition tended to have lower resilience compared to those with normal nutritional status.(Sari et al., 2017) This highlighted the interaction between nutritional adequacy and psychological well-being.

Regression analysis also showed a significant relationship between food diversity and nutritional status ($p = 0.009$), with an odds ratio of 1.85. Adolescents with more diverse food intake tended to have better nutritional status.(Hekmah et al., 2023) This was consistent with global evidence that food diversity improved macro and micronutrient adequacy, thereby supporting healthy growth and optimal BMI.(Baird et al., 2025) These findings

reinforced the importance of school-based interventions to increase food diversity and healthy eating habits.

In terms of implications, the results of this research underlined the urgency of integrated interventions for adolescents at MAN Bangkalan. Schools needed to strengthen nutrition education and provide healthier food options in the school environment. At the same time, resilience development programs such as peer support groups, stress management training, and positive emotion development were very important to enhance psychological adaptation. Family involvement was also important, as eating patterns and emotional well-being were strongly influenced by the home environment.(Munthe et al., 2024)

In addition, the findings of this study also showed that the role of social and cultural environments could not be ignored in determining the nutritional status and resilience of adolescents.(Khoerunisa et al., 2025) Recent studies indicated that peer support and school community involvement contributed positively to healthy eating behaviors and psychological resilience among adolescents. This finding was relevant to the context of MAN Bangkalan, where social interactions among adolescents and environmental support strengthened the effectiveness of nutrition and mental health programs implemented in schools.(Awaliah et al., 2024) Thus, the intervention approach should not only emphasized individual aspects but also integrated collective support from peers, teachers, and the community.(Khoerunisa et al., 2025)

This research had several limitations. The relatively small sample size ($n = 55$) and purposive sampling limited the generalizability of the findings.

The cross-sectional design also prevented causal inference between nutritional status and resilience. Furthermore, the use of the modified CD-RISC required careful interpretation, especially if the validity and reliability of the instrument had not been tested in the local context. (Suparyanto dan Rosad (2015, 2020) Future research should use larger samples, longitudinal designs, and more detailed dietary assessments to strengthen evidence regarding the relationship between nutrition and resilience among Indonesian adolescents.

Overall, the results of this research showed that although most adolescents at MAN Bangkalan had a normal BMI and moderate resilience, the persistence of underweight cases and the limited diversity of food remained major concerns. Therefore, targeted interventions combining nutrition education and psychosocial support were needed to optimize adolescent development. (Husni et al., 2024)

5 CONCLUSIONS

This research concluded that the majority of adolescent respondents at MAN Bangkalan had nutritional status in the normal category (49.1%) and sufficient category (71.0%), with a small proportion classified as underweight or obese. Most respondents showed a good level of resilience, self-development that tended to develop (67.7%), and high positive emotions (100,0%). These results confirmed that adequate nutritional conditions were aligned with positive psychological aspects in adolescents, so it was important for schools and health workers to continue monitoring nutritional status while developing nutrition and psychosocial education

programs to support optimal adolescent growth and development

6 REFERENCES

- Awaliah, Ernirita, Mukarromah, N., Widiastuti, E., Zuryati, M., & Setiyono, E. (2024). Family and Peer Support Relationships with Healthy Food Choices for Adolescents. *Jurnal Ilmiah Keperawatan*, 10.
- Baird, S., Choonara, S., Azzopardi, P. S., Banati, P., Bessant, J., Biermann, O., Capon, A., Claeson, M., Collins, P. Y., De Wet-Billings, N., Dogra, S., Dong, Y., Francis, K. L., Gebrekristos, L. T., Groves, A. K., Hay, S. I., Imbago-Jácome, D., Jenkins, A. P., Kabiru, C. W., ... Viner, R. M. (2025). A call to action: the second Lancet Commission on adolescent health and wellbeing. *The Lancet*, 405(10493), 1945–2022. [https://doi.org/10.1016/S0140-6736\(25\)00503-3](https://doi.org/10.1016/S0140-6736(25)00503-3)
- Hekmah, N., Nisa, A., Fathullah, D. M., & Hadijah, J. (2023). Analisis Keragaman Pangan Terhadap Status Gizi Remaja Usia 16-18 Tahun di SMA IT Ar-Rahman Banjarbaru. *JIKES: Jurnal Ilmu Kesehatan*, 2(1), 39–46. <https://doi.org/10.71456/jik.v2i1.677>
- Husni, M., Baidah, Yuhansyah, Ernawati, Asnuriyati, W., & Mawarni, T. (2024). *Faktor Determinan yang Berpengaruh Pada Masalah Psikososial Pada Remaja di SMPN 1 Tabunganan*. 7, 739–748.
- Indonesia, K. K. R. (2020). *Gizi saat Remaja Tentukan Kualitas Keturunan*.
- Kementerian Kesehatan Republik Indonesia. (2025). *Laporan Survei Status Gizi Indonesia (SSGI) 2024*.
- Kesehatan, K. K. R. I. B. P. dan P. (2018). *Riset Kesehatan Dasar (Riskesdas) 2018: Laporan Nasional*.
- Khoerunisa, S., Isti'adah, F. N., & Muhajirin, M. (2025). Suci Khoerunisa 1 , Feida Noorlaila Isti'adah 2 , Muhammad Muhajirin 3. *Pengaruh Dukungan Sosial Terhadap Kesejahteraan Psikologis Pada Remaja Di Smp Khz Musthafa Sukamanah*, 2, 359–

386. Munthe, L. M., Lumbantoruan, R., & Naibaho, D. (2024). Pengaruh Peran Keluarga Terhadap Kesejahteraan Emosional Remaja di Dusun Kutambaru. *JIMU: Jurnal Ilmiah Multidisipliner*, 2(02), 257–264. <https://doi.org/10.70294/jimu.v2i02.360>
- Renyoet, B. S., Mangalik, G., & Kristiani, C. (2024). Hubungan Status Gizi Dengan Stress Kecemasan Dan Depresi Pada Remaja Sekolah Menengah Pertama Di Kota Salatiga the Relationship Between Nutritional Status and Stress, Anxiety and Depression in Junior High School Adolescents in Salatiga City. *JGMI: The Journal of Indonesian Community Nutrition*, 13(2), 150–161.
- Rifqi, M. A., Puspikawati, S. I., Salisa, W., & Zaman, M. N. U. (2025). Sweet Sweetened Beverages Intake and Sedentary Behavior Drive Overweight Trends: A Study of Urban and Rural Adolescents in East Java, Indonesia. *Amerta Nutrition*, 9(1), 34–44. <https://doi.org/10.20473/amnt.v9i1.2025.34-44>
- Saewyc, E. M. (2011). CIHR Author Manuscript RESEARCH ON ADOLESCENT SEXUAL ORIENTATION : DEVELOPMENT , HEALTH DISPARITIES , STIGMA AND. *Journal of Research on Adolescence : The Official Journal of the Society for Research on Adolescence*, 21(1), 256–272. <https://doi.org/10.1111/j.1532-7795.2010.00727.x>.RESEARCH
- Sari, R. F., Sari, S. P., & Hernawaty, T. (2017). Resiliensi Remaja Stunting : Sebagian Merasa Sulit Bangkit dan Bertahan Menghadapi Permasalahan. *Jurnal Keperawatan BSI*, 5(2), 74–82. <http://ejournal.bsi.ac.id/ejurnal/index.php/jk> 81
- Suparyanto dan Rosad (2015). (2020). Modul Metodologi Penelitian Kuantitatif (KSM361). *Suparyanto Dan Rosad (2015, 5(3), 248–253*.
- Wa Ode Siti Nur Asnia, Devi Savitri Effendy, & Ruwiah Ruwiah. (2025). Hubungan Pengetahuan Gizi dengan Status Gizi pada Remaja Putri di SMP Negeri 5 Kendari Tahun 2024. *Jurnal Medika*
- Nusantara*, 3(1), 86–93. <https://doi.org/10.59680/medika.v3i1.1657>