Vol. 7, No. 3, December 2025, pp 552-560
https://doi.org/10.36590/jika.v7i3.1446
http://salnesia.id/index.php/jika
jika@salnesia.id, p-ISSN: 2337-9847, e-ISSN: 2686-2883
Penerbit: Sarana Ilmu Indonesia (salnesia)

RESEARCH ARTICLES

Konsumsi Makanan Cepat Saji dan Kualitas Hidup dengan Remaja Overweight di Kota Semarang

Fast Food Consumption and Quality of Life of Overweight Adolescents in Semarang City

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Abstract

Overweight adolescents affects various age groups, ranging from children to adolescents. Among adolescents, factors such as fast food consumption contribute to this issue and may establish dietary patterns that impact their quality of life (QoL). This study aimed to analyze the relationship between fast food consumption and the quality of life among overweight adolescents in Semarang City. This research employed a cross-sectional design involving 65 adolescents from SMAN 1, SMAN 6, and SMAN 11 in Semarang City, selected via multistage random sampling. Data were analyzed using the Chi-square test. The results indicated no significant relationship between fast food consumption and overweight adolescents (p-value = 0,704). However, a significant relationship was found regarding the quality of life of overweight adolescents (p-value = 0,001). In conclusion, while fast food consumption was not directly correlated with overweight status in this population, overweight adolescents significantly correlates with the adolescents' quality of life.

Keywords: *adolescents, overweight, quality of life*

Article history :

Submitted 20 January 2025
Accepted 30 December 2025
Published 31 December 2025

PUBLISHED BY:
Sarana Ilmu Indonesia (salnesia)
Address:
Jl. Dr. Ratulangi No. 75A, Baju Bodoa, Maros Baru, Kab. Maros, Provinsi Sulawesi Selatan, Indonesia

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Abstrak

Kondisi kelebihan berat badan (*overweight*) dapat terjadi pada berbagai kelompok usia, mulai dari anak-anak hingga remaja. Pada remaja, faktor-faktor seperti konsumsi makanan cepat saji berkontribusi terhadap masalah ini dan dapat membentuk pola makan yang berdampak pada kualitas hidup mereka. Penelitian ini bertujuan untuk menganalisis hubungan antara konsumsi makanan cepat saji dengan kualitas hidup pada remaja yang mengalami kelebihan berat badan di Kota Semarang. Penelitian ini menggunakan desain *cross-sectional* yang melibatkan 65 remaja dari SMAN 1, SMAN 6, dan SMAN 11 di Kota Semarang, yang dipilih melalui teknik *multistage random sampling*. Analisis data dilakukan menggunakan uji *Chi-Square*. Hasil penelitian menunjukkan tidak terdapat hubungan yang signifikan antara konsumsi makanan cepat saji dengan status kelebihan berat badan *(p = 0,704)*. Namun, ditemukan hubungan yang signifikan terkait kualitas hidup remaja yang mengalami kelebihan berat badan *(p = 0,001)*. Kesimpulannya, meskipun konsumsi makanan cepat saji tidak berkorelasi langsung dengan status kelebihan berat badan pada populasi ini, kondisi kelebihan berat badan berhubungan secara signifikan dengan kualitas hidup remaja.

Kata Kunci: remaja, overweight, kualitas hidup

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Highlight:

- Overweight status was more prevalent in males (53.8%) than females. Additionally, 53.8% of respondents had a limited pocket money of Rp20,000, which often leads to the selection of cheap, calorie-dense foods.
- A significant relationship was found between overweight status and quality of life (p-value = 0,001), with 96.2% of overweight adolescents experiencing low quality of life. This condition negatively impacts physical health, psychological well-being, and self-perception.
- There was no significant correlation found between the frequency of fast food consumption and overweight status (p-value = 0,074). This suggests that weight status is likely influenced by other complex factors such as total caloric intake, physical activity, and sleep patterns rather than frequency alone.

INTRODUCTION

Overweight is currently one of the health problems that is a major concern in public health, caused by abnormal fat accumulation (Cesare et al., 2019). Overweight adolescents, or what is often known as overweight adolescents, can occur in various age groups, from children to teenagers. In the latest WHO report in 2023, there was a significant increase in the prevalence of overweight among adolescents aged 12 to 19 years around the world. According to Riskesdas 2018, the prevalence of overweight in adolescents aged 16-18 years in Indonesia in 2018 was 9,5% (Kemenkes, 2018). Meanwhile, the prevalence of overweight adolescents in Semarang City in 2018 was 12,20% (Riskesdas, 2018). This figure shows that the prevalence in Semarang City has the third-highest prevalence in Central Java for overweight adolescents. The report on

health activities for school-age adolescents (aged 16-18 years) also noted that adolescents aged 16-18 years experienced overweight adolescents by 3,91% (Dinkes, 2022). This shows that the problem of overweight in adolescents is not only an individual health issue but also a public health issue that needs serious attention.

The problem of overweight in adolescents has various factors that influence it, one of which is the consumption of fast food which has the potential to worsen the condition. Fast food tends to be high in fat, sugar, and calories, which contribute to weight gain and the risk of other related diseases (Sari et al., 2023). In the research results Munasiroh et al. (2019), the study shows that the majority of consumers who like to choose fast food menus are in the 15-34 age group. This habit needs to be a concern because fast food consumed frequently and in large quantities can result in the risk of obesity (Anggorowati et al., 2023). On the other hand, fast food consumption habits can form new eating patterns in adolescents which can affect the quality of life of adolescents.

Quality of life is a tool used to measure a person's health (Haris et al., 2019). Quality of life refers to an individual's assessment that includes physical health, psychological state, level of independence, social relationships and relationships with the environment (Jalaham et al., 2020). When someone is overweight, their quality of life will be disrupted or decrease (Felix et al., 2020). A study shows that teenagers who are overweight have a disrupted quality of life (Pas et al., 2023). However, quality of life can be said to be one of the factors that can cause overweight, as supported by research that says that when someone has a low quality of life, they are prone to overweight adolescents (Najib et al., 2021). This study adopted the "Health-Related Quality of Life" (HRQol) framework. The HRQol framework is crucial because it goes beyond traditional clinical markers of health, such as BMI, to assess an individual's physical health, psychological well-being, and social relationships. By using this framework, this study recognizes that overweight adolescents is not just a physical condition but also a holistic stressor that can disrupt ten different dimensions of adolescents' lives, including mood, self-perception, and school environment. Based on the existing background, the purpose of this research is to research the relationship between fast food consumption and the quality of life of overweight adolescents at State Senior High Schools in Semarang City.

METHODS

Analytical observational research with a cross-sectional research design. The type and design of this research are based on observations conducted once on each subject and measurements of research variables are carried out simultaneously. The research was conducted in May 2024 at SMAN 1, SMAN 6, and SMA N 11 Semarang City. The sample size was calculated using the minimum sample formula, with a total of 65 subjects. The sampling technique used the Multistage Random Sampling technique, namely sampling carried out randomly in stages or stages for each area. The inclusion criteria for this study were subjects from the target population who were actively attending school at SMA N 1, SMA N 6, and SMA N 11 in Semarang City, who were 16-18 years old, willing, and agreed to be subjects. The study utilized the World Health Organization (WHO) 2007 growth reference charts for adolescents**.** Anthropometric screening showed that the student had a BMI/U +1SD to +2SD (overweight). The exclusion criteria were that subjects were not present at the time the research was conducted, suffered from illnesses so they had to follow a certain diet, and did heavy physical activities (participating in sports training for matches, marathons, and so on).

Data collection consists of respondent characteristics data, age, gender, BMI/U,

and pocket money, for the frequency of fast food consumption measured using the Food Frequency Questionnaire (FFQ) and quality of life measured using Kidscreen-52. Fast food consumption habits were measured using the FFQ (Food Frequency Questionnaire) from Kurniawati et al., 2021. The questionnaire contains a list of foods and drinks divided into 3 categories, namely foods that contain high fat, high energy, and high sugar. Each category contains 9 types of food. Subjects choose and fill in the frequency of food/drinks consumed in a certain period such as day, week, or month. The subjects' frequency answers on the questionnaire are then interpreted into a score based on the value; >1 x a day = 50; 1 x a day = 25; 4-6 x per week = 15; 1-3 x a week = 10; 1-2 x per month = 1. In this study, the instrument used to measure quality of life was the Kidscreen-52, which is still rarely used in Indonesia to assess quality of life in adolescents. The Kinderscreen-52 is a 52-item measure of Health-Related Quality of Life (HRQol) designed for use in children aged 8-18 years (Davison et al., 2023). *Kidscreen-52* assesses ten dimensions consisting of physical activity and health, feelings, mood, self, leisure, family and home life, financial problems, friends, school and study and legislation. Each questionnaire in this study has been tested for validity and reliability. The dependent variable was overweight status, while fast food consumption habits and quality of life were independent variables.

Bivariate analysis was carried out to examine the relationship between fast food consumption habits, quality of life and overweight adolescents. In this research, data analysis uses *Chi-square test*.

RESULTS AND DISCUSSIONS

The research results in Table 1 show that in SMAN 1, SMAN 6, and SMAN 11, 35 subjects (53,8%) were male and 30 subjects (46,2%) were female. Table 1 shows that most of the respondents were male, with a percentage of 53,8%, with the dominant age being 17 years (60%), and 5% with the age of 18 years. As for nutritional status, it was generally overweight (81.5%), and pocket money was generally ≤20,000 (53.8%).

Table 1. Distribution of respondent characteristics

Variable	n	%
Gender		
Male	35	53,8
Female	30	46,2
Age		
16 years	19	29,2
17 years	41	60,0
18 years	5	7,7
Nutritional Status		
Normal	12	18,5
Overweight	53	81,5
Pocket Money		
>20000	30	46,2
≤20000	35	53,8

Source: Primary Data, 2024

Tabel 1 menunjukkan bahwa sebagian besar responden berjenis kelamin Male dengan persentase 53,8%, dengan usia yang dominan adalah 17 tahun (60%), dan 5%

dengan usia 18 tahun. Adapun statusnya gizi umumnya overweight yaitu 81,5%, dan pocket money umumnya kurang ≤20000 yaitu 53,8%.

The results of the study showed that overweight teenagers are more common in male teenagers compared to female teenagers. These results are in line with research that shows boys are 2,25 times more likely to be overweight than girls (Febriani and Sudarti, 2019). Other research also states that male gender is a risk factor for overweight adolescents 2,168 times greater than female adolescents (Kamaruddin et al., 2023). This can occur due to genetic factors, where someone who comes from a family that experiences obesity will be at risk of overweight adolescents and obese compared to families who do not have a history of obesity (Lubis et al., 2020). From a mechanistic perspective, obesity in adolescents is fundamentally a result of a chronic positive energy balance, where energy intake exceeds energy expenditure, leading to abnormal or excessive fat accumulation.

Other factors can also influence the occurrence of overweight in adolescents, one of which is the provision of pocket money. Based on the results of Table 1, it can be seen that more subjects have pocket money of less than Rp 20,000. A study showed that students who have low pocket money tend to consume cheap and easily obtained food without looking at its nutritional value (Mawarni et al., 2020). Fast food is usually served quickly and is known as a calorie-dense food that is high in fat, salt, cholesterol, and sugar but low in nutritional content (Begum et al., 2023). Adolescence is a critical period for these biological shifts, as hormonal changes and growth requirements interact with lifestyle choices. Adolescents tend to consume fast food because it is readily available, practical, and affordable. However, fast food consumed frequently and in large quantities can result in the risk of overweight adolescents because the energy and fat content in fast food is very high (Anggorowati et al., 2023). Fast food plays a central role in this mechanism because it is typically calorie-dense, high in saturated fats, and high in sugar, which facilitates rapid weight gain if the excess energy is not metabolized through physical activity.

Table 2. Relationship between fast food consumption habits and overweight adolescents

Variable	Fast food consumption		p-value	C
	Rarely	Often		
	n	n		
Normal	3	9		
Overweight	19	34	0,704	0,089
Number	22	43		

Note: Chi-square test, significant if p-value < 0,05

Based on Table 2, it is known that out of 53 subjects who are overweight, 19 subjects (35%) often consume fast food and 34 subjects (64,2%) rarely consume fast food. Meanwhile, 12 subjects with normal nutritional status often consume fast food 3 subjects (25%) and 9 subjects (75%) rarely consume fast food. The results of statistical tests using the *Chi-square test* gotten a p-value progression rectification of 0,704 *(p < 0,05)*, meaning that there is no significant relationship between fast food consumption and overweight adolescents. The Contingency Coefficient (C) value is 0,089, the influence of fast food consumption habits on overweight adolescents is 8,9% and other factors that can influence it are 91,1%.

Fast food is usually served quickly and is known as a calorie-dense food that is high

in fat, salt, cholesterol, and sugar but low in nutritional content (Begum et al., 2023). Adolescents tend to consume fast food because it is readily available, practical, and affordable. However, fast food consumed frequently and in large quantities can result in the risk of overweight adolescents because the energy and fat content in fast food is very high (Anggorowati et al., 2023). Based on the results of this study, it can be seen that fast food consumption in adolescents shows that there is no relationship between fast food consumption and overweight adolescents. This study is in line with previous studies which showed that fast food consumption in large quantities has no relationship with the incidence of overweight in adolescents (Kerkadi et al., 2019). Other research also says that there is no relationship between fast food consumption habits and overweight teenagers (Kasmarini et al., 2023).

Study Fajriani et al. (2019) also mentioned that the insignificant relationship between BMI and eating behavior occurred because of other factors that influence adolescent behavior such as knowledge of eating, eating habits, peers, eating habits with family, and social media. However, several studies have stated that the frequency of fast food consumption often causes the risk of overweight adolescents in adolescents (Nisa et al., 2021). This can happen because when fast food consumption is not balanced with good activity, there will be a buildup of fat in the body so there is a risk of overweight adolescents. In this study, there was no relationship between fast food consumption and the event of overweight adolescents, the study only focused on the frequency of fast food consumption and did not include the amount of consumption in a day.

The absence of a direct significant correlation in this population suggests that BMI status is likely mediated by complex confounding factors that were not the primary focus of this frequency-based measurement. Beyond diet, physical activity serves as a critical biological counterbalance; a lack of regular exercise prevents the expenditure of calories consumed from fast food, leading to the accumulation of fat. Furthermore, modern lifestyle factors such as increased screen time and sedentary behavior, often linked to social media use, are known to displace physical activity and are significantly associated with both adolescent obesity and health-related quality of life. Sleep patterns are another vital confounding factor, as poor sleep quality or insufficient sleep has been scientifically linked to metabolic disturbances and overnutrition in teenagers.

Table 3. Relationship between quality of life and overweight adolescents

Variable	Quality of Life		p-value	C
	Rarely	Often		
	n	n		
Normal	7	5		
Overweight	51	2	0,001	0,429
Number	58	7		

Note: Chi-square test, significant if p-value < 0,05

Based on Table 3, it is known that 53 subjects are overweight, of the 53 overweight subjects, 51 subjects (96,2%) have a low quality of life and 2 subjects (3,8%) have a high quality of life. Meanwhile, 12 subjects with normal nutritional status, of the 12 subjects, 7 subjects (58,3%) have a low quality of life and the rest have a high quality of life, 5 subjects (41,7%). The results of statistical tests using the *Chi-square test* obtained a *p-value* continuity correction of *0,001* (p-value < 0,05), meaning that there is a significant relationship between quality of life and overweight adolescents. Contingency Coefficient (C) 0,429, the effect of quality of life on overweight adolescents is 42,9%.

The results of this study indicate that overweight adolescents have a low quality of life, and there is a significant relationship between quality of life and overweight adolescents. These comes about are in line with past studies that appear that overweight adolescents have a altogether lower level of quality of life compared to adolescents with normal weight (Meixner et al., 2020). These findings are also in line with research results which show that the higher the increase in BMI, the greater the decrease in quality of life. (Najib et al., 2021). The relationship between quality of life and overweight incidence is a reciprocal relationship. This is in line with a study that shows that one of the factors associated with quality of life is weight status, the findings reported that people have a lower quality of life if their weight status is classified as overweight (Lin et al., 2024).

The relationship between quality of life and the incidence of overweight is very closely related, where overweight has an impact on the quality of life, causing a person's quality of life to decrease in the dimensions of quality of life. However, the results of this study did not show aspects in the domain of quality of life so the results of the study only focused on the relationship between quality of life and the incidence of overweight in adolescents. However, a study reported that adolescents who are overweight have the most affected quality of life, especially in the physical, psychological, and autonomy dimensions and related to parents (Pas et al., 2023). In addition, other research also shows that overweight teenagers have a low quality of life, which is also indicated by low levels of happiness, self-esteem, and high levels of health complaints (Suwarsi dan Baua, 2023).

The results of this study indicate that overweight adolescents have a low quality of life, and there is a significant relationship between quality of life and overweight adolescents. This relationship is often reciprocal and deeply influenced by psychosocial factors and body image. Overweight adolescents frequently face weight stigma and negative self-perception, which directly lowers their psychological and social quality of life. This study notes that the physical and autonomy dimensions are often the most affected. Furthermore, the psychological impact of overweight adolescents can manifest as low levels of happiness, reduced self-esteem, and increased health complaints. These psychosocial stressors, combined with environmental factors such as social support and relationships with friends and family, create a complex framework that determines an adolescent's overall quality of life, extending beyond their physical weight status alone.

CONCLUSIONS

Based on the findings of this study, it can be concluded that a higher proportion of male students are overweight. Analysis between factors revealed no relationship between fast food consumption and overweight adolescents; however, a significant relationship was found between quality of life and overweight adolescents, as indicated by a *p-value* continuity correction of 0,001. Educational institutions and health practitioners are advised to transition from mere dietary education to holistic health programs that encompass physical and psychosocial screenings, while fostering a stigma-free environment that prioritizes student well-being. Furthermore, alongside the need for multidimensional interventions addressing sleep patterns and body image, future research should utilize more precise dietary assessments and longitudinal designs.

ACKNOWLEDGMENTS

Thanks to the principals, teachers, and students who were involved and helped carry out the research at SMAN 1, SMAN 6, and SMAN 11, Semarang City.

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