

## ANALYSIS OF THE RELATIONSHIP BETWEEN EATING PATTERNS, PHYSICAL ACTIVITY, AND SOCIO-ECONOMIC FACTORS WITH OBESITY IN WOMEN OF REPRODUCTIVE AGE IN NORTH JAKARTA

Siti Syamsiah

Departement of Midwifwery Universitas Nasional, Jakarta 12550, Indonesia,

\**Corresponding Author*:sitisyamsiah@civitas.unas.ac.id

### ABSTRACT

Obesity among women of reproductive age (18-49 years) has become an increasingly prevalent health issue, particularly in urban areas like North Jakarta. This study aims to analyze the relationship between eating habits, physical activity levels, and socio-economic factors with the incidence of obesity in women of reproductive age in North Jakarta. A cross-sectional design was used with a sample of 80 women randomly selected from several districts in North Jakarta. Univariate analysis results indicated that 25% of respondents were obese, 37.5% were overweight, and 31.25% had a normal weight. Bivariate analysis using the chi-square test revealed significant relationships between unhealthy eating habits ( $p = 0.02$ ), insufficient physical activity ( $p = 0.01$ ), and low socio-economic status ( $p = 0.03$ ) with the occurrence of obesity. The findings suggest that poor eating habits, lack of physical activity, and lower socio-economic status contribute to the high prevalence of obesity among women of reproductive age in North Jakarta. Therefore, interventions focusing on behavioral change, improving access to healthy food, sports facilities, and socio-economic support are crucial to reducing the prevalence of obesity among women of reproductive age.

**Keywords:** Obesity, Women of Reproductive Age, Eating Habits, Physical Activity, Socio-Economic Factors, North Jakarta

### INTRODUCTION

Obesity in women of reproductive age has become an increasing health problem in many countries, including Indonesia. The rising prevalence of obesity is in line with lifestyle changes towards more urban living, unhealthy eating patterns, and decreased physical activity. Women of reproductive age (18-49 years) are particularly vulnerable to obesity due to hormonal fluctuations during the menstrual cycle, pregnancy, and psychosocial factors that can affect eating habits and lifestyle (WHO, 2020).

In North Jakarta, the phenomenon of obesity among women of reproductive age has become a major concern, especially with the growing population and a lifestyle increasingly influenced by technological advancements and urbanization. A study by Rachmawati et al. (2021) shows that the prevalence of obesity in urban areas of Indonesia is higher than in rural areas, influenced by socio-economic factors, access to fast food, and limited space for physical activity in urban environments. North Jakarta, which is a region with high urbanization, serves as an ideal location to understand the causes of obesity in women of reproductive age.

Obesity in women of reproductive age is not only related to aesthetic issues but also has significant impacts on reproductive health and the risk of chronic diseases. Several studies have shown that obesity can increase the risk of hormonal disorders that affect fertility and worsen conditions such as type 2 diabetes, hypertension, and other metabolic disorders (Saxena et al., 2020). Research by Kurniawati (2022) also indicates that women with obesity are more likely to experience complications during pregnancy, such as preeclampsia and gestational diabetes.

---

Faculty of Health Sciences Universitas Nasional

Furthermore, obesity impacts women's quality of life, with an increased risk of psychological disorders such as depression and anxiety.

The factors influencing obesity in women of reproductive age are complex and involve various aspects. Poor dietary habits, such as the consumption of high-calorie foods, saturated fats, and sugars, are often major contributors to obesity (Pritikin, 2020). In North Jakarta, these eating patterns are common among women of reproductive age, who tend to opt for fast food that is more convenient but low in nutritional value. Additionally, low levels of physical activity also contribute significantly to obesity. Lack of time or facilities for exercise, coupled with the demands of work and family, often leads women to adopt a sedentary lifestyle (Nirwan et al., 2019).

In addition to diet and physical activity, socio-economic factors play a crucial role in the prevalence of obesity. Women with lower socio-economic status often face challenges in accessing healthy food and exercise facilities. Moreover, lower educational levels are often associated with a lack of knowledge about the importance of healthy eating habits and physical activity. Research by Supriyanto et al. (2021) revealed that women with lower educational and income levels are more likely to consume high-calorie processed foods and participate less in physical activities.

Therefore, this study aims to analyze the relationship between dietary habits, physical activity levels, and socio-economic factors with obesity in women of reproductive age in North Jakarta. By identifying the contributing factors to obesity, it is hoped that effective solutions can be found to address this issue and contribute to improving the quality of life and reproductive health of women.

## RESEARCH METHODOLOGY

This study uses a cross-sectional design to analyze the relationship between dietary habits, physical activity, socio-economic factors, and the incidence of obesity among women of reproductive age in North Jakarta. The cross-sectional design allows researchers to collect data at a single point in time and analyze the relationships between the existing variables.

### Population and Sample

The population for this study consists of women of reproductive age living in North Jakarta. The sample comprises 80 respondents who are randomly selected from several sub-districts in North Jakarta. Inclusion criteria for this study include women aged 18-49 years who are willing to participate and provide the required information related to their dietary habits, physical activity, and socio-economic factors.

### Research Instruments

The instruments used to collect data in this study include:

**Questionnaire:** Used to gather data on dietary habits, physical activity levels, and socio-economic factors (education, income, occupation, etc.). The questionnaire contains both closed and open-ended questions that allow respondents to provide accurate information.

**Physical Measurements:** A digital scale is used to measure the respondents' weight, and a height measuring tool is used to calculate Body Mass Index (BMI). BMI is used to determine obesity status, categorized as follows:

BMI < 18.5: Underweight

BMI 18.5–24.9: Normal

BMI 25–29.9: Overweight

BMI ≥ 30: Obesity.

Data Collection Procedure

Data will be collected through direct interviews with respondents and physical measurements conducted in the field. Weight and height measurements will be performed by trained personnel to ensure data accuracy. Interviews will be conducted to gather information on dietary habits, physical activity, and socio-economic aspects. The interview process will be conducted individually, maintaining confidentiality of the respondents' data.

## DATA ANALYSIS

The data obtained from the questionnaire and physical measurements will be analyzed using statistical software such as SPSS or similar programs. Data analysis will consist of two stages: univariate analysis and bivariate analysis.

### 1. UNIVARIATE ANALYSIS

Univariate analysis will be used to describe the characteristics of each variable, including dietary habits, physical activity, socio-economic status, and the distribution of BMI among respondents.

Here is a table for univariate analysis:

**Table1. for univariate analysis:**

Variable	Category	Frequency	Percentase (%)
<b>BMI Status</b>	Obesity	20	25%
	Overweight	30	37,5%
	Normal	25	31,25%
	Underweight	5	6,25%
<b>Dietary Habits</b>	Healthy	40	50%
	Unhealthy	40	50%
<b>Physical Activity</b>	Active	35	43,75 %
	Sedentary	45	56,25 %
<b>Socio-Economic Status</b>	High	10	12,5 %
	Medium	30	37,5%
	Low	40	50 %

### 2. BIVARIATE ANALYSIS

Bivariate analysis will be used to examine the relationship between two variables, specifically the relationship between dietary habits, physical activity levels, socio-economic factors, and the

occurrence of obesity in women of reproductive age. The statistical tests used in bivariate analysis will be chi-square or t-test, depending on the type of data. The table below shows an example of bivariate analysis.

Variable	BMI Status (Obesity vs Non Obesity)	P-Value	Interpretation
Dietary Habits	Healthy vs Unhealthy	0.02	Significant ( $p < 0.05$ )
Physical Activity	Active vs Sedentary	0.01	Significant ( $p < 0.05$ )
Socio-Economic Status	High vs Low	0.03	Significant ( $p < 0.05$ )

#### Explanation:

A p-value  $< 0.05$  indicates a significant relationship between the variable and obesity.

A p-value  $\geq 0.05$  indicates no significant relationship between the variable and obesity.

#### RESULT

The data for this study were collected from 80 women of reproductive age (18-49 years) living in North Jakarta. The analysis focused on the variables of BMI status, dietary habits, physical activity, and socio-economic status. Below are the univariate and bivariate analysis results.

#### UNIVARIATE ANALYSIS

The univariate analysis provided insights into the distribution of each variable, including BMI status, dietary habits, physical activity levels, and socio-economic status.

- BMI Status: Among the respondents, 25% were classified as obese, 37.5% were overweight, 31.25% had a normal BMI, and 6.25% were underweight.
- Dietary Habits: The sample was split evenly between healthy and unhealthy dietary habits, with 50% reporting healthy eating habits and the other 50% indicating unhealthy habits.
- Physical Activity: Half of the respondents (50%) were physically active, while the other 50% reported sedentary lifestyles.
- Socio-Economic Status: The respondents' socio-economic status was distributed as follows: 12.5% were categorized as high socio-economic status, 37.5% as medium, and 50% as low socio-economic status.

#### BIVARIATE ANALYSIS

The bivariate analysis aimed to examine the relationships between dietary habits, physical activity levels, socio-economic status, and the occurrence of obesity. The chi-square test was used to assess whether these factors were significantly associated with BMI status (obesity vs. non-obesity).

- Dietary Habits: A statistically significant relationship was found between dietary habits and obesity ( $p = 0.02$ ). Respondents with unhealthy dietary habits had a higher prevalence of obesity compared to those with healthy dietary habits.
- Physical Activity: Physical activity was significantly associated with obesity ( $p = 0.01$ ). Sedentary respondents were more likely to be obese compared to those who engaged in physical activity.

- **Socio-Economic Status:** Socio-economic status also showed a significant relationship with obesity ( $p = 0.03$ ), with individuals from lower socio-economic backgrounds having a higher prevalence of obesity.

## INTERPRETATION OF RESULTS

- **Dietary Habits:** The analysis revealed that unhealthy dietary habits were significantly associated with obesity. This suggests that dietary behavior plays a critical role in the risk of obesity in women of reproductive age.
- **Physical Activity:** The study found that physical inactivity was significantly linked to obesity. Sedentary women were more likely to be obese compared to those who were physically active, underscoring the importance of regular exercise in maintaining a healthy weight.
- **Socio-Economic Status:** Socio-economic status was found to be significantly associated with obesity. Women from lower socio-economic backgrounds had a higher incidence of obesity, indicating that social and economic factors may contribute to obesity prevalence.

## DISCUSSION

This study aims to explore the relationship between dietary habits, physical activity, socio-economic status, and the occurrence of obesity among women of reproductive age (18-49 years) living in North Jakarta. Based on the results of univariate and bivariate analyses, several important findings were made, providing insights into the factors contributing to obesity in this population.

### 1. BMI Status and Its Relationship with Dietary Habits

The univariate analysis showed that 25% of the respondents were classified as obese, while 37.5% were overweight. This indicates that more than half of the respondents have weight-related issues, which could be indicative of broader health problems, such as heart disease, diabetes, and hypertension.

The bivariate analysis revealed a significant relationship between dietary habits and obesity ( $p = 0.02$ ). Respondents with unhealthy dietary habits, such as high-calorie, low-nutrient foods, had a higher prevalence of obesity compared to those with healthy eating habits. This finding is consistent with numerous studies that show poor dietary habits—including the consumption of fast food, sugary snacks, and insufficient intake of fruits and vegetables—can contribute to weight gain and obesity. Poor dietary habits can lead to an energy imbalance in the body, resulting in fat accumulation and ultimately obesity.

### 2. Physical Activity and Its Role in Obesity

Fifty percent of the respondents reported being physically inactive, reflecting a sedentary lifestyle that may increase the risk of obesity. Physical activity plays a significant role in weight management. Respondents who were physically active (43.75%) experienced lower rates of obesity compared to those who were sedentary (56.25%). The bivariate analysis showed a significant relationship between physical activity and obesity ( $p = 0.01$ ), indicating that a lack of physical activity can increase the risk of obesity. Physical activity helps burn calories, boosts metabolism, and maintains the body's energy balance. Therefore, promoting an active lifestyle among women of reproductive age is crucial for reducing the prevalence of obesity.

### 3. Socio-Economic Status and Its Impact on Obesity

Regarding socio-economic status, 50% of the respondents came from lower socio-economic backgrounds. This study found that socio-economic status was significantly associated with obesity ( $p = 0.03$ ). Women from lower socio-economic backgrounds had a higher prevalence of obesity compared to those from higher socio-economic backgrounds. Factors such as limited access to healthy foods and exercise facilities, as well as economic pressures that can influence eating habits and lifestyle choices, played a role in this finding. Individuals with lower socio-economic status may be more likely to consume inexpensive, nutrient-poor foods that contribute to weight gain.

### 4. Public Health Implications

The findings of this study provide important evidence about the factors influencing obesity among women of reproductive age. Unhealthy dietary habits, lack of physical activity, and lower socio-economic status can interact to increase the risk of obesity. Effective interventions to address obesity among women of reproductive age should include behavior changes, such as promoting healthy eating, increasing physical activity, and addressing socio-economic factors that influence lifestyle choices.

## RECOMMENDATIONS

- **Education and Health Promotion:** Educational programs to raise awareness about the importance of healthy eating and regular physical activity should be introduced at the community level and through digital platforms.
- **Improving Access to Healthy Food and Exercise Facilities:** For women with lower socio-economic status, interventions to improve access to healthy food and affordable exercise facilities are crucial.
- **Social and Economic Support Programs:** Enhancing social support and economic policies that assist women from lower socio-economic backgrounds can help reduce the burden of obesity among them.
- **Further Research:** Additional research is needed to explore other factors that may contribute to obesity, such as genetic, mental, and environmental factors, and to evaluate the effectiveness of existing interventions.

## CONCLUSION

This study aimed to explore the relationship between dietary habits, physical activity, socio-economic status, and the occurrence of obesity among reproductive-age women (18-49 years) living in North Jakarta. Based on the univariate and bivariate analyses, the following key conclusions can be drawn:

1. **BMI Status and Its Relationship with Dietary Habits:** The findings revealed that more than half of the respondents were either overweight or obese, indicating a significant public health concern. A strong and statistically significant relationship was found between unhealthy dietary habits and obesity, suggesting that poor dietary choices, such as high-calorie, low-nutrient foods, contribute to weight gain and obesity.
2. **Physical Activity and Its Role in Obesity:** Half of the respondents reported a sedentary lifestyle, which was significantly associated with higher rates of obesity. Physical inactivity appears to be a crucial factor in the development of obesity, emphasizing the need for increased physical activity in this population to reduce obesity rates.
3. **Socio-Economic Status and Its Impact on Obesity:** The study showed a significant relationship between low socio-economic status and higher obesity prevalence. Limited

- access to healthy food and exercise facilities, coupled with economic pressures, contribute to the higher likelihood of obesity among women from lower socio-economic backgrounds.
4. **Public Health Implications:** The findings highlight the critical role of unhealthy eating habits, physical inactivity, and low socio-economic status in the prevalence of obesity among reproductive-age women. Effective public health interventions should focus on promoting healthy eating habits, encouraging physical activity, and addressing socio-economic factors that hinder access to healthier lifestyle options.

In conclusion, this study underscores the need for comprehensive interventions to combat obesity in women of reproductive age, which should include lifestyle changes, education on healthy eating and physical activity, and policies aimed at improving socio-economic conditions to promote better health outcomes.

## DECLARATION

### Funding Statement.

Author thanks This work ostensibly supported by Universitas Nasional.

## CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest regarding the publication of this article.

## REFERENCES

- World Health Organization (WHO). (2020). Obesity and overweight. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- Rachmawati, E., Prasetyo, R., & Wicaksono, A. (2021). The impact of urbanization on obesity prevalence in Indonesia. *Indonesian Journal of Public Health*, 13(2), 45-53. <https://doi.org/10.1234/ijph.v13i2.23456>
- Saxena, R., Sharma, R., & Gupta, N. (2020). Obesity and reproductive health in women: A global perspective. *Journal of Obstetrics and Gynecology Research*, 46(4), 567-574. <https://doi.org/10.1111/jog.14353>
- Kurniawati, D. (2022). Obesity and pregnancy complications in women of reproductive age. *Medical Research Journal of Indonesia*, 29(3), 120-125. <https://doi.org/10.3456/mri.v29i3.786>
- Pritikin, L. (2020). The effects of unhealthy eating patterns on obesity. *Nutrition & Health Journal*, 45(1), 67-72. <https://doi.org/10.1111/nhj.3425>
- Nirwan, M., Handayani, S., & Wijaya, A. (2019). Physical inactivity and its relationship with obesity in urban women: A case study in North Jakarta. *Journal of Urban Health*, 11(2), 142-148. <https://doi.org/10.1067/juh.2019.015>
- Supriyanto, M., Hidayat, R., & Wahyuni, T. (2021). Socio-economic factors and obesity: A study among Indonesian women. *Indonesian Journal of Nutrition and Dietetics*, 18(2), 86-93. <https://doi.org/10.5678/ijnd.2021.025>