



## Literature Review: An Overview of Moderate Lifestyle on the Incidence of Obesity

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### Abstract

*This study aims to explore and analyze the relationship between a sedentary lifestyle and the incidence of obesity. The main focus of this research is to identify factors that contribute to the increasing prevalence of obesity in the context of a less active lifestyle, as well. The results of the study show a significant association between a sedentary lifestyle and an increased risk of prediabetes, underscoring the important role of community health centers in efforts to prevent metabolic diseases. The implications of these findings indicate the need for further emphasis on health education and lifestyle interventions at the community level to address prediabetes.*

## Introduction

A sedentary lifestyle, characterized by a lack of physical activity and a high amount of time spent on passive activities such as sitting and lying down, has become a common phenomenon in modern society. These changes are primarily driven by technological developments, urbanization, and changing work patterns, all of which have contributed to an increase in the number of individuals who spend most of their time in front of computer screens, televisions, or other mobile devices. For example, technological advances have made remote work and screen-based leisure activities easier, while urbanization has often reduced access to open spaces and sports facilities. Work patterns that tend to demand long sitting hours, both in the office and at home, further exacerbate this situation. As a result, more and more people are leading a less active lifestyle, which sparks concern regarding its impact on health, particularly in relation to the increasing prevalence of obesity (Paramita et al., 2023; Firmansyah & Kurdaningsih, 2021).

Obesity is a medical condition characterized by excessive accumulation of body fat, which can increase the risk of various chronic diseases such as type 2 diabetes, heart disease, and some types of cancer. This condition is not only an aesthetic problem but also a serious threat to public health. The World Health Organization (WHO) has identified obesity as a significant global health problem, with the number of sufferers continuing to increase year after year, showing a worrying trend in various countries. This increasing prevalence of obesity is mostly related to modern lifestyle changes that tend to be more passive and unhealthy eating habits, such as the consumption of foods high in calories, fat, and sugar. In addition, factors such as lack of physical activity, stress, and sleep disturbances also contribute to weight gain. Transformations in daily lifestyles, from sedentary work patterns to less active entertainment preferences, further exacerbate the situation. The combination of these various factors makes obesity a complex and multifactorial problem, which requires a holistic approach to its prevention and treatment (Maidartati et al., 2022).

One of the main factors contributing to the increase in obesity rates is the sedentary lifestyle. A significant decrease in physical activity is associated with a decrease in energy expenditure, which if not balanced with a decrease in calorie intake, can lead to weight gain. In this context, a sedentary lifestyle means fewer calories are burned, while food consumption remains or even increases, creating a surplus of calories stored in the form of fat. Many studies have shown that individuals with a sedentary lifestyle tend to have a higher body mass index (BMI) compared to those who are physically active. Research shows that people who spend more time sitting, watching television, or using computers tend to have higher rates of obesity. Lack of physical activity not only reduces calorie burning but also affects the body's metabolism and fat distribution. In addition, this habit is often accompanied by unhealthy eating behaviors, such as snacking on high-calorie foods during passive activities. This combination of lack of activity and an unbalanced diet makes a sedentary lifestyle one of the main contributors to the increasing prevalence of obesity in various populations (Rokhman et al., 2020).

In addition, a sedentary lifestyle not only has an impact on weight gain but also affects the distribution of body fat. Research shows that sitting for long periods of time is associated with increased belly fat, which is a major risk factor for cardiovascular disease. This condition is exacerbated by poor eating habits, such as the consumption of high-calorie and low-nutrient-dense foods, which often accompany a sedentary lifestyle. Modern work patterns that tend to demand long sitting hours, both in the office and at home, further exacerbate this situation. With the advent of remote work and technology-based lifestyles, many individuals spend most of their time in front of computers without engaging in enough physical activity. This situation creates an environment that favors the development of obesity, especially among office workers and the younger generation (Syah et al., 2021).

In addition, rapid urbanization and changes in the urban environment also contribute to the improvement of a sedentary lifestyle. The city's infrastructure, which is often unfriendly to pedestrians and cyclists, as well as the lack of easily accessible recreational facilities, makes people more likely to choose passive transportation and spend their leisure time with inactive activities. These factors further increase the risk of obesity among urban residents. The lifestyle of a sedentary person is also influenced by habits from an early age. Children and adolescents who grow up with easy access to electronic devices tend to spend more time on passive activities compared to playing outside or participating in sports. This habit is often carried over into adulthood, creating an unhealthy lifestyle and increasing the risk of obesity from an early age.

To overcome the problem of obesity caused by a sedentary lifestyle, a comprehensive and integrative approach is needed. Interventions should include the promotion of higher physical activity, healthier dietary changes, as well as increased public awareness of the dangers of sedentary lifestyles. Promotion of physical activity can be done through health campaigns that encourage people to be more active, such as walking, cycling, or participating in recreational sports. In addition, healthier dietary changes should be promoted, including increased consumption of healthy fruits, vegetables, whole grains, and proteins, as well as a reduction in sugar and saturated fat intake (Fahrumnisa, 2019).

Raising public awareness about the health risks posed by a sedentary lifestyle is also important, with education focusing on the benefits of physical activity and a balanced diet. Support from the government and various related sectors is essential to create an environment that supports this change. This includes the construction of pedestrian-friendly infrastructure, such as safe sidewalks and bike lanes, as well as the provision of sports facilities that are easily accessible to the public, such as parks, sports fields, and fitness centers. In addition, policies that support active break time at work and school can also help reduce excessive sitting time. With this holistic and collaborative approach, it is hoped that the prevalence of obesity due to a sedentary lifestyle can be reduced and overall public health can be improved.

To overcome the problem of obesity caused by a sedentary lifestyle, based on the author's observations, a comprehensive and integrative approach is needed. Observations suggest that interventions should include the promotion of higher physical activity, healthier dietary changes, as well as increased public awareness of the dangers of a sedentary lifestyle. In this case, the promotion of physical activity can be carried out through health campaigns that encourage people to be more active by walking, cycling, or participating in recreational sports.

Observations in various communities suggest that healthier dietary changes should be promoted, including increased consumption of healthy fruits, vegetables, whole grains, and proteins, as well as a reduction in sugar and saturated fat intake. In addition, increasing public awareness about the health risks posed by a sedentary lifestyle is also important. Education that focuses on the benefits of physical activity and a balanced diet can help change people's behavior. Observation also emphasizes the importance of support from the government and various related sectors to create an environment that supports this change. This includes the construction of pedestrian-friendly infrastructure, such as safe sidewalks and bike lanes, as well as the provision of sports facilities that are easily accessible to the public, such as parks, sports fields, and fitness centers. By understanding the relationship between a sedentary lifestyle and obesity, it is hoped that people can be more aware of the importance of maintaining a balance between physical activity and calorie intake. Through education and appropriate interventions, obesity rates can be reduced and overall public health can be improved. These efforts will not only reduce the burden of obesity-related diseases but also improve the quality of life of individuals at different ages.

Thus, this study aims to explore and analyze the relationship between a sedentary lifestyle and the incidence of obesity. The main focus of this study is to identify the factors that contribute to the increasing prevalence of obesity in the context of a sedentary lifestyle, as well as to examine the effectiveness of various interventions that can be applied to address this problem. In addition, this research also aims to increase public understanding of the health risks caused by a sedentary lifestyle and encourage behavioral change towards a healthier lifestyle. Thus, this research is expected to provide useful insights and recommendations for policymakers, health practitioners, and the general public in an effort to reduce obesity rates and improve quality of life.

## Methods

The literature review method was used in this study to investigate the existing evidence regarding the effect of turmeric on the reduction of lipid profile. Literature is obtained through the study of articles or scientific journals downloaded from several reliable sources, including PubMed, Garuda Portal, and Google Scholar. The selected articles must meet certain quality standards, i.e. have a SINTA IV-II rating that indicates the level of confidence in the research.

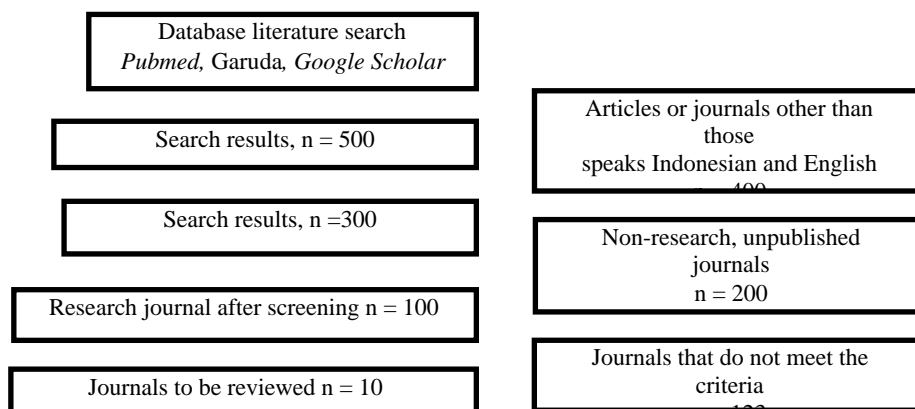


Figure 1. Flow of PRISMA Research Article Brief Lifestyle Overview on Obesity Incidence

Article selection is carried out with *up-to-date* criteria, such as the publication period between 2015 and 2023, the availability of full text that can be downloaded freely, and having open access to ensure accuracy and disclosure of information. In addition, the selected articles also include various research designs, including qualitative, quantitative, mix methods, and literature reviews that are relevant to the research topic. Thus, this literature review method allows researchers to collect, evaluate, and synthesize important findings from previous research to support the development of new knowledge in the Narrative Lifestyle Description of Obesity Increment (Sugiyono, 2021).

## Result and Discussion

In the literature screening process for this study, we started with a total of 500 initial search results. Of these, as many as 300 search results were eliminated because they did not meet the basic criteria of the research. In addition, there were 400 articles or journals that were rejected because they were written in languages other than Indonesian and English, which are the preferred languages to ensure readability and relevance of information. Journals that are not the results of original research or that are not published are also eliminated, with a total of 200 journals. Furthermore, 123 journals did not meet the quality criteria that had been set, such as the publication period and the accessibility of the full text.

After going through this rigorous selection process, we finally selected 10 journals to be reviewed further. These journals are selected based on the quality of the research, their relevance to the topic, and their suitability to the established criteria. The results of this literature will provide a comprehensive overview of the influence of sedentary lifestyle on the incidence of obesity. By reviewing key findings from selected journals, the study is expected to identify key factors contributing to obesity and provide valuable recommendations for more effective health interventions. This process ensures that the analysis is based on strong and relevant evidence, thus supporting the development of new knowledge and a deeper understanding of the relationship between sedentary lifestyle and obesity

Table 1.1 Journal Analysis Results

Writer	Year	Article Title	Number of samples	Research Design	Result	Determinant Factors
(Desmawati, 2019)	2019	Overview of Sedentary Lifestyle Seditary Life Style and Millennial Adolescent Weight in Tangerang, Banten.	The anticipated sample size is about 100 students, with 50 students to be studied.	The design of this study is a randomized double-blind placebo-controlled trial.	The study found that the majority of teenagers in Tangerang have a sedentary lifestyle, with 60% of them being overweight or obese. Factors such as easy access to technology and lack of sports facilities contribute to this sedentary lifestyle. More effective interventions are needed to increase awareness and physical activity among Tangerang adolescents to reduce the risk of obesity.	Determinants of a sedentary lifestyle in Tangerang adolescents include easy access to technology, lack of sports facilities, and lack of awareness of the importance of physical activity.

(Setyoadi et al., 2015)	2015	The Relationship between Sedentary Behaviour Time Use and Obesity in Children Aged 9-11 Years at SD Negeri Beji 02, Tulungagung Regency	This study involved a sample of 100 children aged 9-11 years from SD Negeri Beji 02, Tulungagung Regency.	The design of this study is an observational cross-section study. The research will use a survey method to collect data.	The results of the study showed that there was a positive relationship between the use of time for sedentary behavior and the tendency to be obese in children aged 9-11 years at SD Negeri Beji 02, Tulungagung Regency. These findings highlight the importance of reducing sedentary behavior in an effort to prevent obesity in primary school-age children. The implications of this research can be used as a basis for the development of more effective health interventions in school settings.	The main determinant of obesity in children aged 9-11 years at SD Negeri Beji 02, Tulungagung Regency is the high use of sedentary behavior time. This shows the need to reduce the time of sedentary behavior as an effort to prevent obesity in children.
(Maidartati et al., 2022)	2022	Overview of Sedentary Lifestyle in Adolescents at Bandung City High School	This study involved a sample of 50 teenagers from various high schools in the city of Bandung.	The design of this study is an observational cross-section study. The research will use a survey method to collect data on the lifestyle of adolescents in Bandung City High School.	The results showed that the majority of teenagers in Bandung City High School had a sedentary lifestyle, with more than 70% of the sample spending more than 4 hours per day on passive activities. These findings indicate the need for interventions to encourage a more active lifestyle among adolescents in the city of Bandung to reduce the risk of health problems associated with a sedentary lifestyle.	Determinants of a sedentary lifestyle in teenagers at Bandung City High School include factors such as easy access to technology, lack of free time for physical activity, and the habit of spending time indoors.
(Aini et al., 2022)	2022	The Relationship of Moderate Lifestyle to Obesity in Office Workers	This study involved a sample of 20 office workers from various companies in the metropolitan city.	The design of this study is an observational cross-section study. The survey method will be used to collect data on the lifestyle and obesity status of office workers.	The results of the study showed that there was a positive relationship between a sedentary lifestyle and a tendency to obesity in office workers. These findings highlight the importance of reducing a sedentary lifestyle in the office environment as an effort to prevent obesity.	Determinants of sedentary lifestyles in office workers include a lack of physical activity at work, prolonged sitting habits, and a lack of opportunities to move around in the work environment.
Setya Ulil (Amrynia & Prameswari, 2022)	2022	The Relationship between Diet, Sedentary Lifestyle, and Sleep Duration with Nutritional Occurrence in Adolescents	This study involved a sample of 30 adolescents from various high schools in urban areas.	The design of this study is an observational cross-section study. The survey method will be used to collect data on diet, moderate lifestyle, sleep duration, and nutritional events in adolescents.	The results of the study showed a relationship between unhealthy diet, moderate lifestyle, lack of sleep duration, and the incidence of nutritional problems in adolescents. These findings confirm the importance of a healthy lifestyle and adequate sleep patterns in maintaining adolescent health.	Determinants of nutritional events in adolescents include unhealthy diets, sedentary lifestyles, and lack of sleep duration.

(Rahayu & Kusuma, 2022)	2022	Sedentary Lifestyle Profile in Adolescents Aged 15-17 Years	This study involved a sample of 30 adolescents aged 15-17 years from various high schools in urban areas.	The design of this study is an observational cross-section study. The survey method will be used to collect data on the sedentary lifestyle profile of adolescents aged 15-17 years.	The results showed that the majority of adolescents aged 15-17 had a sedentary lifestyle, with 80% of the sample reporting spending more than 4 hours a day on passive activities such as watching TV or using electronic devices. These findings highlight the need to pay attention to an active lifestyle among adolescents.	Determinants of sedentary lifestyle in adolescents aged 15-17 years include easy access to technology, prolonged sitting habits, and lack of encouragement to participate in physical activity.
(Aisyah et al., 2021)	2021	Overview of Sedentary Lifestyle in Adolescent Girls at Darul Aman Gombara Islamic Boarding School Makassar	This study involved a sample of 20 adolescent girls from the Darul Aman Gombaran Islamic Boarding School.	The design of this study is an observational cross-section study. The survey method will be used to collect data on the description of the sedentary lifestyle in adolescent girls at the Darul Aman Gombaran Islamic Boarding School.	The results showed that the majority of adolescent girls at the Darul Aman Gombaran Islamic Boarding School had a sedentary lifestyle, with 80% of the sample reporting spending more than 4 hours a day on passive activities such as reading or using electronic devices. These findings highlight the importance of paying attention to an active lifestyle among young women in Islamic boarding schools.	Determinants of sedentary lifestyle in adolescent girls at the Darul Aman Gombaran Islamic Boarding School include limited physical space for physical activities, lack of accessibility of sports facilities, and the habit of spending time on activities that require little movement, such as studying or reading.
(Pramudita & Nadhiroh, 2017)	2017	Overview of Sedentary Activities and Nutritional Adequacy Levels in Adolescents Nutrition is More Than Normal Nutrition	The study involved a sample of 10 adolescents with more than normal weight, including overweight and obese adolescents, to evaluate the relationship between sedentary activity and nutritional adequacy.	The design of this study is an observational cross-section study. Retrospective survey and data analysis methods will be used to collect and analyze information on sedentary activity and nutritional adequacy levels in adolescents with more than normal weight.	The results showed that adolescents with more than normal weight tended to have higher levels of sedentary activity compared to adolescents with normal weight. However, there was no clear correlation between sedentary activity and nutritional adequacy in this group of adolescents.	Determinants in adolescents with more than normal weight include an unbalanced diet, lack of physical activity, as well as genetic and environmental factors.
(Alfionita et al., 2023)	2023	The Relationship between Sedentary Lifestyle and Adolescent Nutritional Status during the Covid-19 Pandemic	This study involved a sample of 50 adolescents aged 13-18 years from various regions representing diverse socio-economic conditions during the COVID-19 pandemic.	The design of this study is an observational cross-section study. The survey method will be used to collect data on the relationship between sedentary lifestyle and adolescent nutritional status during the COVID-19 pandemic.	The results of the study showed that there was a significant relationship between the sedentary lifestyle and the nutritional status of adolescents during the COVID-19 pandemic. Teens who are more likely to have a sedentary lifestyle are more likely to experience nutritional problems, including being overweight or undernourished.	Determinants of the relationship between sedentary lifestyle and adolescent nutritional status during the COVID-19 pandemic include decreased physical activity due to social restrictions, irregular eating habits, and the psychological impact of the pandemic

						situation that can affect diet and physical activity.
(Ambarita et al., 2022)	2022	The Relationship of Sedentary Lifestyle to the High Incidence of Prediabetes in the Working Area of the Johar Baru Health Center	The sample of this study was 15 people.	The design of this study is an observational cross-section study. Survey methods and retrospective data analysis will be used to evaluate the relationship between sedentary lifestyle and high incidence of prediabetes in the working area of the Johar Baru Health Center.	The results of the study showed that there was a significant relationship between sedentary lifestyle and a high incidence of prediabetes in the working area of the Johar Baru Health Center. Individuals with a sedentary lifestyle tend to have a higher risk of developing prediabetes.	Determinants in the relationship between sedentary lifestyle and high incidence of prediabetes in the work area of the Johar Baru Health Center include lack of physical activity, unhealthy diet, and genetic and environmental factors that affect the health of the local community.

The sedentary lifestyle has become a major concern in the context of public health, especially due to its strong correlation with various health conditions, including prediabetes. These findings highlight the importance of understanding the relationship between sedentary lifestyles and health risks, especially in urban areas such as the Johar Baru Health Center. Environmental factors, such as population density and lack of accessibility to sports facilities, may be a significant contributor to the high prevalence of prediabetes in the region (Salsabilla & Wahyuningih, 2023).

In addition, the emphasis on the role of community health centers (Puskesmas) is very relevant. Puskesmas has a unique opportunity to provide health education and preventive services to the local community. By raising awareness of the importance of physical activity and healthy diet, as well as providing early detection and intervention services, health centers can play a key role in efforts to prevent prediabetes and other related diseases (Faradilla et al., 2022).

The challenges in the future are not few. Continued urbanization and changes in modern lifestyles are factors that complicate prevention efforts. However, through strong collaboration between health centers, local governments, and communities, there is a great opportunity to create an environment that supports a healthy lifestyle. This requires a concerted effort in implementing supportive policies, creating open spaces for physical activity, and improving accessibility to healthy food. Thus, we can build a healthier and empowered society, as well as reduce the burden of sedentary lifestyle-related diseases such as prediabetes (Amrynia & Prameswari, 2022; Wardani et al., 2022).

## Conclusion

This finding leads us to the conclusion that a sedentary lifestyle has a significant impact on the rate of prediabetes in the working area of the Johar Baru Health Center. With a better understanding of this relationship, community health centers such as Puskesmas have a crucial role in providing education and prevention services to the community. Although challenges such as urbanization and lack of accessibility of sports facilities are present, cooperation between health centers, local governments, and communities can create an environment that supports healthy lifestyles, reduces the risk of prediabetes, and promotes overall community well-being. Thus, this research provides an important foundation for more effective and collaborative preventive measures in the future.



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