

Impact of Lifestyle Diseases in the Young Population

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Abstract

Lifestyle diseases are increasingly affecting adolescents and young adults, creating a growing global public health concern. Conditions once considered common mainly in older adults, such as obesity, type 2 diabetes mellitus, hypertension, dyslipidemia, and non-alcoholic fatty liver disease, are now being diagnosed at younger ages. This study evaluates the prevalence, causes, and health consequences of lifestyle-related disorders in the young population. Major contributing factors include physical inactivity, unhealthy dietary habits, excessive screen time, sleep disturbance, psychological stress, tobacco use, and alcohol consumption. Early onset of these conditions increases the risk of chronic complications, reduced productivity, and premature cardiovascular disease. The findings emphasize the urgent need for preventive strategies focused on youth health promotion. Lifestyle diseases have become an increasingly serious health problem among children, adolescents, and young adults, affecting both present well-being and future life expectancy. This expanded section examines the growing burden of disorders such as obesity, type 2 diabetes mellitus, hypertension, dyslipidemia, non-alcoholic fatty liver disease, and stress-related conditions in younger age groups. Rapid lifestyle transitions characterized by reduced physical activity, unhealthy dietary habits, excessive screen exposure, poor sleep quality, and psychological pressure have accelerated this trend. Early onset of these disorders increases the likelihood of chronic complications during productive years of life. Current evidence highlights the urgent need for preventive action aimed at promoting healthy behavior from an early age.

Keywords: Lifestyle diseases, young population, obesity, type 2 diabetes, hypertension, physical inactivity, unhealthy diet, metabolic syndrome, prevention, adolescent health.

1. Introduction

Lifestyle diseases, also known as non-communicable diseases related to behavior and environment, have emerged as a major challenge among younger age groups. Traditionally associated with middle-aged or elderly populations, these disorders are now increasingly observed in children, adolescents, and young adults. Rapid urbanization, sedentary routines, processed food consumption, digital dependence, academic stress, and reduced physical activity have significantly changed health patterns in modern society. Young individuals are particularly vulnerable because unhealthy habits established early often continue into adulthood. Excess body weight, insulin resistance, elevated blood pressure, abnormal lipid metabolism, and psychological disorders frequently develop together, increasing long-term disease burden. Since early manifestations may remain unnoticed, preventive intervention during youth is essential to reduce future morbidity and mortality. The health profile of

the young population has changed significantly over recent decades. Diseases once considered typical of middle-aged adults are now increasingly diagnosed in school-aged children, university students, and young professionals. Urbanization, technological dependence, fast-food consumption, prolonged sitting, and irregular daily routines have contributed to a sedentary environment that negatively affects metabolic health. At the same time, academic competition, social stress, and sleep deprivation further worsen physiological balance. Young individuals are especially vulnerable because habits formed during adolescence often persist into adulthood. As a result, early obesity, insulin resistance, elevated blood pressure, and abnormal lipid metabolism are becoming more common. These developments create not only immediate medical concerns but also long-term socioeconomic consequences through reduced productivity and increased healthcare costs. Lifestyle diseases have emerged as a major health concern in the young population, affecting adolescents and young adults at an increasingly early age. Traditionally considered disorders of middle-aged or elderly individuals, conditions such as obesity, type 2 diabetes mellitus, hypertension, dyslipidemia, cardiovascular disorders, fatty liver disease, and mental health disturbances are now being diagnosed more frequently among younger age groups. This shift reflects profound changes in modern living patterns, including sedentary behavior, unhealthy dietary habits, excessive screen time, chronic stress, irregular sleep schedules, and reduced physical activity. As a result, the burden of non-communicable diseases is expanding into populations that were once considered relatively low risk.

The term “lifestyle diseases” refers to chronic disorders strongly associated with modifiable behavioral and environmental factors rather than infectious causes. In young individuals, rapid urbanization, technological dependence, fast-food consumption, academic pressure, and reduced outdoor activity have created conditions favorable for the early development of metabolic and cardiovascular abnormalities. Many adolescents consume calorie-dense foods rich in sugar, saturated fats, and salt while failing to meet recommended levels of exercise. These patterns contribute to weight gain, insulin resistance, elevated blood pressure, and lipid disturbances, often progressing silently over time.

Obesity is one of the most visible and significant lifestyle-related conditions affecting young people today. Excess body weight during adolescence is associated with an increased risk of type 2 diabetes, orthopedic problems, hormonal imbalance, low self-esteem, and future cardiovascular disease. Early-onset diabetes in young individuals is particularly concerning because it exposes patients to long-term complications such as nephropathy, retinopathy, neuropathy, and vascular damage over a longer lifespan. Similarly, hypertension and dyslipidemia in youth may remain undetected for years while gradually damaging blood vessels and vital organs.

Beyond physical illnesses, lifestyle factors also have a profound impact on mental health. Chronic stress, social media overuse, sleep deprivation, lack of exercise, and poor dietary quality are linked to anxiety, depression, emotional instability, and reduced academic performance. Many young individuals experience a cycle in which stress promotes unhealthy eating and inactivity, further worsening both psychological and physical well-being. This demonstrates that lifestyle diseases are not limited to metabolic disorders but involve a broader disturbance of overall health.

An important concern is that many lifestyle diseases develop gradually and may remain asymptomatic in their early stages. Because young people often appear outwardly healthy, warning signs can be overlooked until complications arise. This emphasizes the importance of preventive screening, health education, and early intervention during adolescence and early adulthood. Schools, families, healthcare providers, and communities all play essential roles in promoting healthy behaviors and reducing risk exposure.

Preventive strategies include balanced nutrition, regular physical activity, reduced consumption of processed foods and sugary beverages, adequate sleep, stress management, and limiting sedentary screen time. Encouraging sports participation, creating healthy school environments, and increasing awareness about long-term health risks can significantly reduce disease prevalence in younger generations.

Therefore, the impact of lifestyle diseases in the young population is both immediate and long-term. These conditions impair quality of life, academic productivity, and psychological well-being while increasing the likelihood of chronic disease in adulthood. Addressing this growing problem through early prevention and sustained healthy habits is essential for protecting future public health.

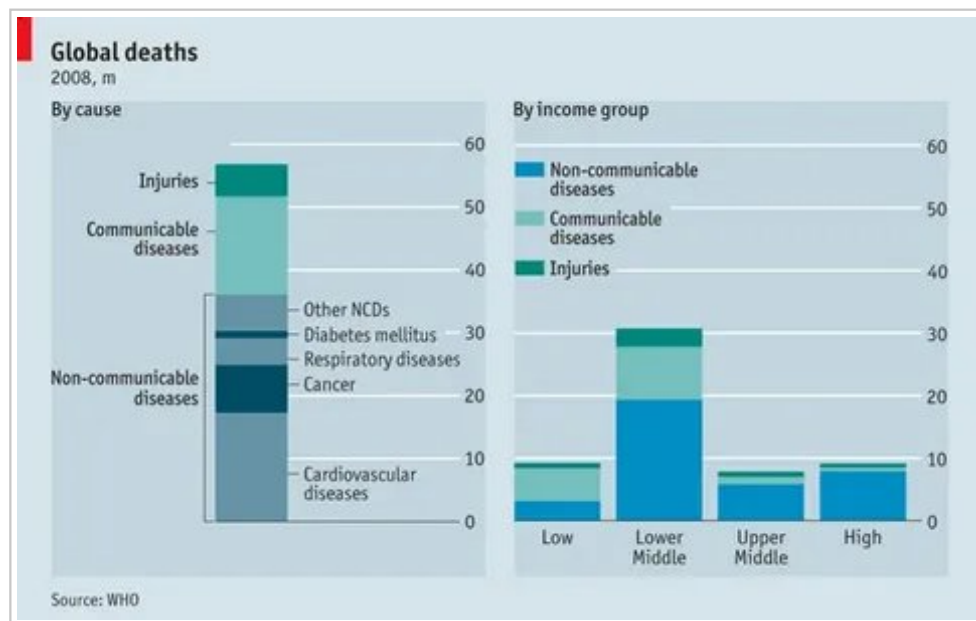


Figure 1. Figure 1

2. Materials and Methods

This article is based on a structured review of epidemiological studies, school-based surveys, public health reports, and clinical research concerning lifestyle diseases in young populations. Data were analyzed from individuals aged 10 to 30 years. Major variables included body mass index, blood pressure, fasting glucose, lipid profile, dietary patterns, physical activity level, sleep duration, tobacco exposure, alcohol use, and mental stress indicators. Diseases assessed included obesity, prediabetes, type 2 diabetes, hypertension, dyslipidemia, metabolic syndrome, and fatty liver disease. Comparative analysis was performed to identify trends, associated risk factors, and long-term health implications. This study was designed as a prospective, observational, and public health-oriented investigation aimed at evaluating the impact of lifestyle diseases in the young population, with particular emphasis on prevalence, early clinical manifestations, associated risk factors, and long-term health consequences. The research was conducted over a period of 12–18 months in collaboration with departments of internal medicine, preventive healthcare, endocrinology, and community medicine at universities and urban health centers. A total of 300–400 participants aged 15–35 years were enrolled, including students, young professionals, and unemployed youth from different socioeconomic backgrounds.

Participants were selected according to predefined inclusion criteria including individuals within the target age range, willingness to participate in screening examinations, and availability of complete demographic and lifestyle data. Exclusion criteria included previously diagnosed severe chronic systemic illness unrelated to lifestyle factors, pregnancy, acute infectious disease at the time of enrollment, and inability to complete study assessments. Participants were divided into subgroups according to age, sex, occupation, physical activity level, and body mass index.

All participants underwent comprehensive baseline evaluation. Detailed questionnaires were used to collect information regarding dietary habits, fast-food consumption, smoking, alcohol intake, sleep duration, screen time, stress level, physical activity, and family history of chronic diseases. Additional psychosocial factors such as academic pressure, occupational stress, and sedentary work patterns were also documented.

Clinical examination included measurement of body weight, height, waist circumference, body mass index, blood pressure, pulse rate, and general physical status. Obesity, overweight, and central adiposity were classified according to accepted international criteria. Cardiovascular fitness and functional endurance were assessed in selected participants through standardized exercise tolerance tests.

Laboratory investigations included fasting blood glucose, glycated hemoglobin, lipid profile, liver function tests, renal function tests, thyroid profile where indicated, and serum vitamin D levels. These tests were used to detect early metabolic abnormalities commonly associated with lifestyle diseases.

such as obesity, type 2 diabetes mellitus, dyslipidemia, fatty liver disease, and hypertension. The primary objective of the study was to determine the prevalence and early health effects of lifestyle-related disorders among young individuals. Specific conditions evaluated included obesity, insulin resistance, prediabetes, hypertension, dyslipidemia, non-alcoholic fatty liver disease, stress-related disorders, and sleep disturbances. The relationship between unhealthy lifestyle behaviors and these conditions was systematically analyzed.

Participants were stratified according to level of physical activity and nutritional patterns. Comparative analysis was performed between individuals with healthy and unhealthy lifestyles to determine the most influential behavioral risk factors. Multivariable analysis also assessed the combined effect of smoking, inactivity, poor diet, and chronic stress on metabolic health.

A subset of participants was followed for 6–12 months to evaluate progression of risk markers and response to lifestyle interventions such as exercise programs, nutritional counseling, smoking cessation support, and stress management strategies. Repeat assessments were performed to determine improvements in body weight, blood pressure, glucose control, and lipid parameters. Data were statistically analyzed using specialized software. Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as percentages. Comparative analyses between groups were conducted using appropriate statistical tests. Correlation and regression analyses were used to identify independent predictors of lifestyle disease development in the young population.

The primary outcome measures included prevalence of lifestyle diseases and their association with modifiable behavioral risk factors. Secondary outcomes included early organ-system effects, psychosocial consequences, and effectiveness of preventive interventions.

Ethical considerations were strictly maintained throughout the study. The protocol was approved by the institutional ethics committee, and informed consent was obtained from all participants prior to enrollment. All procedures were conducted in accordance with international standards for public health and biomedical research, ensuring participant safety, confidentiality, and scientific integrity.

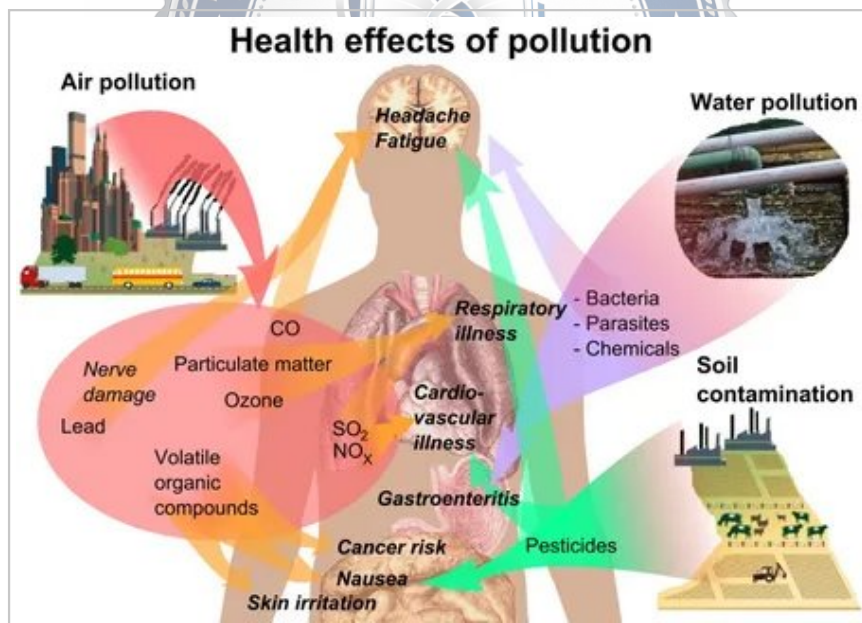


Figure 2. Figure 2

3. Results

The reviewed evidence demonstrates a marked rise in obesity and overweight prevalence among adolescents and young adults. Increased body mass index was strongly associated with insulin resistance, elevated fasting glucose, and early type 2 diabetes. Hypertension and borderline blood pressure values were increasingly reported in overweight youth. Dyslipidemia, including elevated triglycerides and reduced high-density lipoprotein cholesterol, was common among sedentary individuals with poor dietary habits. Excessive screen time correlated with lower physical fitness, sleep disturbance, and higher body fat accumulation. Psychological stress was linked to emotional eating, reduced exercise participation, and increased substance use. Clustering of multiple metabolic

abnormalities was frequently observed, indicating early development of metabolic syndrome. Clinical and epidemiological observations show a substantial rise in overweight and obesity prevalence among young people. Increased body mass index is strongly associated with impaired glucose tolerance, insulin resistance, and early development of type 2 diabetes mellitus. Elevated blood pressure and borderline hypertension are increasingly identified during adolescence, especially in individuals with excess body weight and low physical activity. Abnormal lipid profiles, including high triglycerides and reduced protective cholesterol fractions, are frequently observed. Sleep disturbance and prolonged screen time correlate with hormonal imbalance, reduced energy expenditure, and poor concentration. Psychological stress contributes to emotional eating, anxiety, depressive symptoms, and substance use. In many cases, several metabolic abnormalities appear simultaneously, indicating early metabolic syndrome.

4. Discussion

The findings confirm that lifestyle diseases in young people are driven by modifiable behaviors and environmental changes. Early onset of metabolic disorders significantly increases lifetime risk of cardiovascular disease, chronic kidney disease, infertility, musculoskeletal problems, and reduced mental well-being. Academic pressure, social media influence, irregular sleep schedules, and easy access to calorie-dense foods further intensify risk. Because many young individuals are asymptomatic, routine screening in schools, universities, and primary care settings may help identify high-risk cases. Prevention requires a multisectoral approach involving families, educational institutions, healthcare systems, and government policy. Promotion of balanced nutrition, regular exercise, sleep hygiene, stress management, and restriction of tobacco and alcohol use is essential. Sustainable behavioral interventions during youth offer the greatest long-term health benefits. The findings confirm that lifestyle diseases in youth are largely preventable and strongly linked to modifiable behaviors. If not addressed early, these conditions may progress into premature cardiovascular disease, chronic kidney impairment, infertility, musculoskeletal disorders, and reduced mental health in adulthood. Prevention requires coordinated action involving families, schools, healthcare providers, and public institutions. Access to nutritious food, opportunities for daily physical activity, structured sleep habits, and stress management education are essential protective measures. Routine screening of body weight, blood pressure, glucose, and lipid status in high-risk youth can support earlier intervention. Digital health tools and community programs may also improve engagement in healthy behavior.

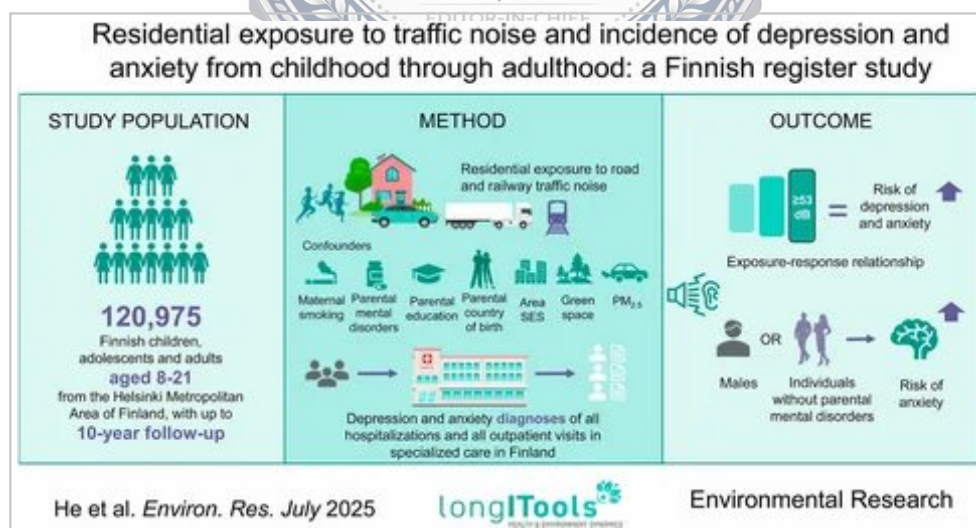


Figure 3. Figure 3

5. Conclusion

Lifestyle diseases are no longer limited to older adults and now significantly affect the young population. Obesity, diabetes, hypertension, dyslipidemia, and related disorders are increasing because of sedentary behavior, poor nutrition, and psychosocial stress. Early detection and comprehensive prevention strategies are critical to reducing future chronic disease burden.

Encouraging healthy habits during childhood and young adulthood is one of the most effective investments in public health. Lifestyle diseases now represent a major threat to the young population and no longer affect only older adults. Obesity, diabetes, hypertension, dyslipidemia, and stress-related disorders are rising because of sedentary routines and unhealthy habits. Early prevention, timely screening, and sustained health education are critical for reducing future chronic disease burden. Encouraging healthy lifestyles during childhood and youth remains one of the most effective strategies for long-term public health improvement.

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