



Prevalence and Determinants of Lifestyle Diseases among Young Adults: A Community-Based Study

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Abstract

Background: Lifestyle diseases are increasingly affecting young adults due to rapid urbanization and changes in lifestyle behaviors. Early onset of these conditions leads to prolonged disease duration and increased risk of complications. **Objectives:** To assess the prevalence of lifestyle diseases and to identify their determinants among young adults in Bhopal city. **Methods:** A community-based cross-sectional study was conducted among 400 young adults aged 18–35 years in selected urban areas of Bhopal city. Data were collected using a pre-designed, pre-tested questionnaire covering socio-demographic details, lifestyle behaviors, and family history. Anthropometric measurements and blood pressure were recorded using standard procedures. **Results** The overall prevalence of at least one lifestyle disease was 44.0%. Overweight and obesity were present in 37.0% of participants, hypertension in 20.5%, and diabetes mellitus in 9.0%. Physical inactivity, unhealthy dietary habits, tobacco use, alcohol consumption, high perceived stress, and family history of non-communicable diseases showed a statistically significant association with lifestyle diseases ($p < 0.05$). **Conclusion:** Lifestyle diseases are highly prevalent among young adults in Bhopal city and are strongly associated with modifiable behavioral and psychosocial factors. Early community-based preventive interventions and lifestyle modification strategies are essential to reduce the growing burden of non-communicable diseases in this population.

Keywords: Lifestyle diseases; Young adults; Prevalence; Determinants; Non-communicable diseases; Community-based study.



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INTRODUCTION

Lifestyle diseases, also referred to as non-communicable diseases (NCDs), include conditions such as diabetes mellitus, hypertension, obesity, and cardiovascular diseases. These diseases are mainly associated with unhealthy lifestyle behaviors including poor diet, physical inactivity, tobacco use, harmful alcohol consumption, and chronic stress. NCDs account for a major proportion of global morbidity and mortality and are responsible for approximately 74% of all deaths worldwide [1]. Traditionally considered diseases of older adults, lifestyle diseases are now increasingly being reported among young adults.

Young adulthood is a critical period marked by important social and behavioral changes. Increased academic pressure, job-related stress, urban living, irregular working hours, reduced physical activity, and increased consumption of processed foods contribute significantly to unhealthy lifestyle patterns. These behaviors often begin early and persist into later life, increasing the risk of early onset of lifestyle diseases. Studies from India have shown a rising prevalence of metabolic risk factors such as obesity, elevated blood pressure, and impaired glucose tolerance among individuals aged 18–35 years [2].

India is undergoing rapid urbanization and epidemiological transition. As a result, lifestyle-related risk factors are becoming more common across both urban and semi-urban populations. According to national data, physical inactivity, unhealthy dietary practices, and overweight are increasing steadily among young adults [3]. Early development of lifestyle diseases leads to prolonged exposure to risk factors, increasing the likelihood of complications such as cardiovascular disease and renal disorders in later life [4]

Bhopal, a rapidly developing city in central India, reflects many of these national trends. Urban expansion, changing food habits, sedentary occupations, and increased stress levels have significantly altered the lifestyle of young adults in the city. Despite this, community-level data on the prevalence of lifestyle diseases and their associated determinants among young adults in Bhopal remain limited. Local data are essential to understand population-specific risk factors and to design effective preventive strategies.

Community-based studies play an important role in identifying the true burden of lifestyle diseases and the factors influencing their development. Determinants such as physical inactivity, dietary habits, obesity, family history, socioeconomic status, and stress levels have been shown to influence the occurrence of lifestyle diseases [5,6]. Identifying these determinants at an early stage can help in planning targeted health education programs and lifestyle interventions. Therefore, this study aims to assess the prevalence of lifestyle diseases among young adults in Bhopal city and to identify the key determinants contributing to their development.

MATERIALS AND METHODS

This study was a community-based cross-sectional study conducted to assess the prevalence of lifestyle diseases and their determinants among young adults. The study was carried out in selected urban areas of Bhopal city, Madhya Pradesh. Bhopal is a rapidly developing urban center with diverse socioeconomic and occupational characteristics, making it suitable for assessing lifestyle-related health problems among young adults.

The study population consisted of young adults aged 18 to 35 years residing in the selected areas of Bhopal city. Individuals who were permanent residents of the area for at least six months were included in the study.

Ethical clearance for the study was obtained from the Institutional Ethics Committee of Peoples College of Medical Sciences and Research Centre, Bhopal, under the Department of Community Medicine. Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of the participants were strictly maintained throughout the study.

Inclusion Criteria

Young adults aged 18–35 years who were willing to participate and provided informed consent were included in the study.

Exclusion Criteria

Individuals who were critically ill at the time of data collection, pregnant women, and those who did not consent to participate were excluded from the study.

The sample size was calculated based on the expected prevalence of lifestyle diseases among young adults, using standard statistical formulae and considering a 95% confidence level and allowable error. A multistage sampling technique was used to select the study participants. Selected wards were chosen randomly, followed by systematic sampling of households. One eligible participant from each household was included in the study.

Data Collection Tools and Technique

Data were collected using a pre-designed, pre-tested, semi-structured questionnaire. The questionnaire included information on socio-demographic characteristics, dietary habits, physical activity, tobacco use, alcohol consumption, sleep patterns, stress levels, and family history of lifestyle diseases. Anthropometric measurements such as height, weight, and body mass index (BMI) were recorded using standard procedures. Blood pressure was measured using a calibrated sphygmomanometer following standard guidelines. Self-reported history of diagnosed lifestyle diseases such as diabetes and hypertension was also recorded.

Operational Definitions

Lifestyle diseases included conditions such as diabetes mellitus, hypertension, obesity, and cardiovascular diseases. Overweight and obesity were classified based on body mass index as per standard guidelines. Hypertension was defined based on measured blood pressure or a previous diagnosis by a medical professional.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using statistical software. Descriptive statistics such as frequencies, percentages, mean, and standard deviation were used to summarize the data. Associations between lifestyle diseases and their determinants were assessed using appropriate statistical tests. A p-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 400 young adults aged 18–35 years participated in the study. The mean age of the participants was 26.8 ± 4.9 years. Of the total participants, 214 (53.5%) were males and 186 (46.5%) were females.

The majority of participants were aged between 18–29 years, with a slightly higher proportion of males. Nearly half of the participants were employed, reflecting an economically active young adult population as seen in Table 1.

Table 1: Socio-demographic characteristics of the study population

Variable	Category	Frequency (n)	Percentage (%)
Age group (years)	18–24	148	37.0
	25–29	134	33.5
	30–35	118	29.5
Gender	Male	214	53.5
	Female	186	46.5
Education	Up to secondary	96	24.0
	Higher secondary	142	35.5
	Graduate & above	162	40.5
Occupation	Student	126	31.5
	Employed	198	49.5
	Unemployed	76	19.0

Overall, 44.0% of the participants had at least one lifestyle disease. Overweight and obesity were the most prevalent conditions, followed by hypertension and diabetes mellitus as seen in Table 2.

Table 2: Prevalence of lifestyle diseases among young adults

Lifestyle disease	Present n (%)	Absent n (%)
Overweight/Obesity	148 (37.0)	252 (63.0)
Hypertension	82 (20.5)	318 (79.5)
Diabetes mellitus	36 (9.0)	364 (91.0)
Any lifestyle disease*	176 (44.0)	224 (56.0)

*Presence of at least one lifestyle disease.

Physical inactivity, unhealthy dietary habits, tobacco use, alcohol consumption, high perceived stress, and family history of non-communicable diseases showed a statistically significant association with the presence of lifestyle diseases among young adults. Physical inactivity and unhealthy diet emerged as the strongest determinants as seen in Table 3.

Table 3: Association between selected determinants and presence of lifestyle diseases

Determinant	Lifestyle disease present n (%)	Lifestyle disease absent n (%)	χ^2 value	p-value
Physical inactivity	118 (67.0)	82 (36.6)	34.52	<0.001*
Unhealthy diet	132 (75.0)	98 (43.8)	39.18	<0.001*
Tobacco use	64 (36.4)	38 (17.0)	18.76	<0.001*
Alcohol consumption	58 (33.0)	44 (19.6)	9.42	0.002*
High perceived stress	104 (59.1)	86 (38.4)	17.89	<0.001*

Family history of NCDs	96 (54.5)	78 (34.8)	16.21	<0.001*
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*Statistically significant

Overall, nearly one in two young adults had at least one lifestyle disease. Overweight and obesity were the most common conditions. Behavioral factors such as physical inactivity, poor diet, substance use, and stress were significantly associated with lifestyle diseases.

DISCUSSION

The present community-based study assessed the prevalence of lifestyle diseases and their determinants among young adults in Bhopal city. The findings highlight a substantial burden of lifestyle diseases in this age group, with nearly half of the participants having at least one lifestyle-related condition. This observation supports the growing evidence that lifestyle diseases are no longer limited to older populations and are increasingly affecting young adults.

In this study, 44.0% of participants had at least one lifestyle disease. Similar findings have been reported from urban populations in India, where early exposure to sedentary behavior, unhealthy diets, and psychosocial stress has contributed to rising metabolic risk among young adults [7]. The high prevalence observed in this study reflects the ongoing epidemiological transition in Indian cities, including Bhopal, where traditional lifestyles are rapidly being replaced by modern, sedentary patterns.

Overweight and obesity were the most prevalent conditions, affecting 37.0% of participants. This finding is consistent with previous Indian studies that have documented increasing rates of overweight and obesity among young adults, particularly in urban settings [8]. Excess body weight in early adulthood is a known risk factor for the development of hypertension, diabetes, and cardiovascular disease later in life. The high prevalence of overweight and obesity observed in this study may be attributed to reduced physical activity, increased consumption of energy-dense foods, and prolonged screen time.

Hypertension was present in 20.5% of participants, while 9.0% reported diabetes mellitus. These findings are comparable to earlier studies that have reported a rising prevalence of elevated blood pressure and impaired glucose regulation among young Indians [9,10]. The presence of these conditions at a young age is concerning, as prolonged disease duration increases the risk of complications such as cardiovascular disease, stroke, and renal impairment.

Physical inactivity showed a strong and statistically significant association with lifestyle diseases in this study. Participants who were physically inactive had a significantly higher prevalence of lifestyle diseases compared to those who were physically active. This finding aligns with global and national evidence demonstrating that physical inactivity is a major modifiable risk factor for non-communicable diseases [11]. Urban environments, desk-based occupations, and lack of recreational physical activity opportunities contribute to sedentary behavior among young adults.

Unhealthy dietary habits were also significantly associated with lifestyle diseases. Diets rich in processed foods, sugary beverages, and saturated fats have been linked to obesity, insulin resistance, and dyslipidemia [12]. The dietary transition seen in urban India, characterized by increased reliance on fast foods and reduced intake of fruits and vegetables, likely explains this association.

Tobacco use and alcohol consumption were significantly associated with the presence of lifestyle diseases. These findings are consistent with earlier studies that have established tobacco and alcohol as important behavioral risk factors for metabolic and cardiovascular disorders [13]. Early initiation of these habits during young adulthood increases cumulative exposure and long-term health risks.

High perceived stress emerged as an important determinant in this study. Psychological stress influences lifestyle behaviors and has direct physiological effects that contribute to metabolic dysfunction and hypertension [14]. Young adults in urban areas often experience stress related to academic pressure, employment uncertainty, and work-life imbalance, which may explain this association.

Family history of non-communicable diseases was significantly associated with lifestyle diseases, indicating the combined influence of genetic susceptibility and shared environmental factors. Individuals with a positive family history may require early screening and targeted preventive interventions.

Overall, the findings of this study emphasize the need for early identification and prevention of lifestyle diseases among young adults. Community-based interventions focusing on physical activity promotion, healthy dietary practices, stress management, and substance use prevention are essential. Addressing these risk factors at an early stage can reduce the long-term burden of lifestyle diseases and improve population health outcomes.

CONCLUSION

This community-based study highlights a considerable burden of lifestyle diseases among young adults in Bhopal city. Nearly half of the study population was affected by at least one lifestyle-related condition, with overweight and obesity being the most prevalent, followed by hypertension and diabetes mellitus. These findings indicate that lifestyle diseases are emerging early in life and are no longer confined to older age groups.

The study identified several modifiable determinants significantly associated with lifestyle diseases, including physical inactivity, unhealthy dietary habits, tobacco use, alcohol consumption, high perceived stress, and a positive family history of non-communicable diseases. Among these, physical inactivity and unhealthy diet emerged as the strongest contributors. The presence of these risk factors during young adulthood increases the likelihood of long-term complications and imposes a significant burden on individuals, families, and the healthcare system.

The findings emphasize the importance of early prevention and health promotion strategies targeted at young adults. Community-based interventions focusing on regular physical activity, healthy eating habits, stress management, and avoidance of tobacco and alcohol are urgently needed. Screening programs for early detection of lifestyle diseases should be strengthened at the community level, particularly for individuals with a family history of non-communicable diseases.

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