

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

Palani Tamilselvi^{1*}, Subbulakshmi S², Devapriya.D³, Madhumitha.S⁴, Anto Shyam.B⁵, Manikandan.J⁶, Devananth.CS⁷

^{1*}Professor, Department of Community Health Nursing, Chettinad College of Nursing, Chettinad Academy of Research and Education, Kelambakkam, Chengalpattu, Tamil Nadu

²Principal, Chettinad College of Nursing, Chettinad Academy of Research and Education, Kelambakkam, Chengalpattu, Tamil Nadu

^{3,4,5,6,7}IV Year Nursing Student, Chettinad College of Nursing, Chettinad Academy of Research and Education, Kelambakkam, Chengalpattu, Tamil Nadu

Corresponding Author: Palani Tamilselvi **Email :** selvimohan65@gmail.com

ABSTRACT

Cardiovascular diseases (CVDs) are the leading cause of morbidity and mortality worldwide, with hypertension and diabetes mellitus being major modifiable risk factors contributing to cardiovascular complications. This study aimed to assess the knowledge and lifestyle practices regarding cardiovascular disease prevention among adults with hypertension and diabetes mellitus. A quantitative descriptive research design was adopted, and the study was conducted among 100 adults attending the outpatient department of Chettinad Hospital and Research Institute (CHRI), Kelambakkam, Tamil Nadu. Participants were selected using a non-probability purposive sampling technique. Data were collected using a structured questionnaire comprising demographic characteristics, knowledge-related items, and a lifestyle practice scale. Descriptive and inferential statistics, including mean, standard deviation, Pearson's correlation, and chi-square test, were used for data analysis. The findings revealed that the majority of participants (67%) were aged 50–60 years, and 58% were female. The mean knowledge score was 6.25 ± 2.34 , indicating a moderate level of knowledge, while the mean lifestyle practice score was 18.24 ± 3.51 , reflecting moderate to good lifestyle practices. A moderate positive correlation ($r = 0.412$) was observed between knowledge and lifestyle practices. Educational status was significantly associated with knowledge ($p = 0.015$) and lifestyle practices ($p = 0.034$), while physical activity was significantly associated with knowledge ($p = 0.010$) and lifestyle practices ($p = 0.001$). No significant association was found between other demographic variables and the study outcomes. The study concludes that adults with hypertension and diabetes mellitus possess moderate knowledge and lifestyle practices regarding cardiovascular disease prevention, with a noticeable gap between awareness and the adoption of healthy behaviors. These findings emphasize the need for structured health education, continuous counselling, and lifestyle modification interventions to improve cardiovascular risk reduction and enhance the quality of life among high-risk populations.

Keywords: Cardiovascular Diseases, Hypertension, Diabetes Mellitus, Knowledge, Lifestyle Practices, Cardiovascular Risk, Health Education, Prevention, Non-Communicable Diseases, Adults.

How to cite this article: Tamilselvi P, Subbulakshmi S, Devapriya D, Madhumitha S, Anto Shyam B, Manikandan J, Devananth CS. To Assess the Knowledge and Lifestyle Practice of Cardiovascular Diseases Among Adults with Hypertension and Diabetes Mellitus in a Tertiary Care Hospital. Int J Drug Deliv Technol. 2026;16(69s): 2125-2136. DOI: 10.25258/ijddt.16.69s.209

INTRODUCTION

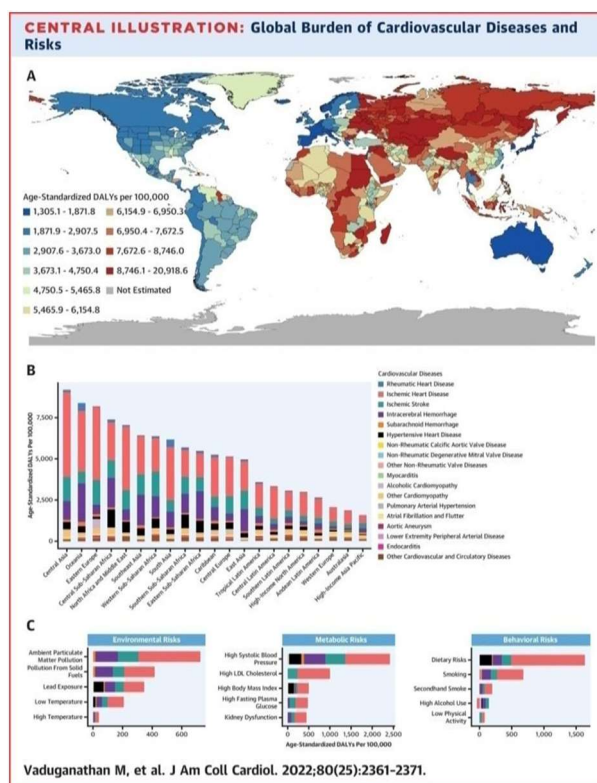
Cardiovascular diseases (CVDs) are the leading cause of morbidity and mortality worldwide and

represent one of the greatest public health challenges of the twenty-first century. They are responsible for approximately 17.9 million deaths annually, accounting for nearly one-third of all global deaths.

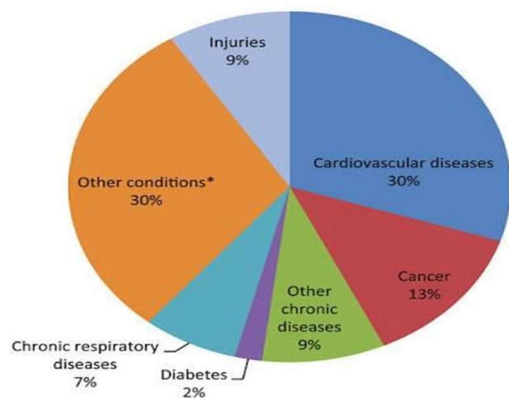
TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

Cardiovascular diseases include coronary artery disease, cerebrovascular disease (stroke), heart failure, peripheral arterial disease, rheumatic heart disease, congenital heart disease, deep vein thrombosis, and pulmonary embolism. The burden of these diseases is particularly high in low- and middle-income countries, where more than 75% of cardiovascular-related deaths occur. The World Health Organization (WHO) has projected that, without effective preventive measures, deaths due to cardiovascular diseases will continue to rise in the coming decades, making CVD prevention a global health priority. Non-communicable diseases (NCDs), particularly hypertension and diabetes mellitus, are major contributors to the increasing prevalence of cardiovascular diseases. Hypertension, commonly referred to as the "silent killer," often remains asymptomatic until severe complications develop. Persistent elevation of blood pressure damages blood vessels and vital organs, including the heart, brain, kidneys, and eyes, significantly increasing the risk of myocardial infarction, stroke, heart failure, and chronic kidney disease. Similarly, diabetes mellitus is a chronic metabolic disorder characterized by persistent hyperglycaemia, which leads to endothelial dysfunction, accelerated atherosclerosis, and vascular complications. Individuals suffering from both hypertension and diabetes are at substantially higher risk of developing cardiovascular diseases than those with either condition alone, making them a particularly vulnerable population requiring comprehensive preventive care. Although cardiovascular diseases are largely preventable, the prevalence of modifiable risk factors continues to increase worldwide. Major behavioural risk factors include unhealthy dietary habits, physical inactivity, tobacco smoking, excessive alcohol consumption, obesity, psychological stress, and poor adherence to prescribed medications. These factors contribute significantly to the development and progression of hypertension, diabetes, dyslipidaemia, and other cardiovascular conditions. Numerous studies have demonstrated that adopting healthy lifestyle behaviours such as consuming a balanced diet, engaging in regular physical activity, maintaining a healthy body weight, avoiding tobacco and alcohol, managing stress effectively, and adhering to medical treatment can substantially reduce cardiovascular morbidity and mortality. Consequently, lifestyle modification has become a cornerstone of cardiovascular disease prevention. Knowledge regarding cardiovascular diseases and their prevention is equally important in reducing cardiovascular risk. Adequate awareness enables individuals to recognize risk factors, understand disease complications, and adopt healthier

behaviours. Patients who possess better knowledge are generally more likely to comply with medication regimens, participate in regular health check-ups, maintain dietary restrictions, and engage in physical activity. However, several studies have reported that many individuals with hypertension and diabetes possess only moderate or inadequate knowledge regarding cardiovascular disease prevention. Limited health literacy, low educational status, socioeconomic challenges, cultural beliefs, and inadequate access to health information often prevent patients from making informed decisions regarding their health. An important challenge observed in chronic disease management is the gap between knowledge and actual lifestyle practices. While some patients are aware of healthy behaviours, they often fail to implement them consistently because of personal, social, cultural, economic, or environmental barriers. Irregular exercise, unhealthy eating habits, poor medication adherence, smoking, alcohol consumption, and inadequate stress management remain common among individuals with hypertension and diabetes. Therefore, assessing both knowledge and lifestyle practices is essential to identify existing deficiencies and to develop targeted educational interventions that promote sustainable behavioural change.



TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL



India is currently experiencing a rapid epidemiological transition characterized by a growing burden of non-communicable diseases. Rapid urbanization, industrialization, sedentary occupations, unhealthy dietary patterns, increasing obesity, tobacco consumption, and ageing of the population have significantly contributed to the rising prevalence of hypertension, diabetes mellitus, and cardiovascular diseases. Cardiovascular diseases now account for a substantial proportion of premature mortality and disability in the country. The coexistence of hypertension and diabetes has become increasingly common among adults, leading to increased healthcare costs, reduced quality of life, and greater pressure on healthcare services. Tamil Nadu is one of the Indian states with a high prevalence of lifestyle-related diseases. Rapid urban development, changing dietary habits, reduced physical activity, and occupational stress have contributed to increasing rates of hypertension, diabetes, obesity, and cardiovascular diseases. Kelambakkam, located on the outskirts of Chennai, has undergone rapid socioeconomic development during recent years, resulting in considerable lifestyle changes among its population. Hospitals serving this region frequently encounter patients with hypertension and diabetes who may have limited knowledge regarding cardiovascular risk factors and preventive lifestyle practices. Understanding patients' awareness and behaviour in this setting is essential for planning effective community-based health education and disease prevention strategies. Patients attending outpatient departments provide an ideal opportunity for assessing knowledge and lifestyle practices because they receive regular follow-up care and continuous medical supervision. These clinical visits offer healthcare professionals, particularly nurses, an opportunity to provide individualized counselling, health education, and behavioural support. However, without assessing patients' existing knowledge and lifestyle practices, it is

difficult to design effective educational interventions that address their specific needs. Identifying knowledge gaps and unhealthy behaviours can assist healthcare providers in developing structured counselling programmes aimed at improving self-care practices and reducing cardiovascular risk. The present study was therefore undertaken to assess the knowledge and lifestyle practices regarding cardiovascular diseases among adults with hypertension and diabetes mellitus attending the outpatient department of Chettinad Hospital and Research Institute (CHRI), Kelambakkam. The findings of this study are expected to provide valuable information for healthcare professionals to strengthen patient education, promote healthy lifestyle modifications, improve disease management, and reduce the burden of cardiovascular complications among high-risk individuals. Ultimately, enhancing knowledge and encouraging positive lifestyle changes can contribute significantly to improving health outcomes and quality of life while reducing the growing burden of cardiovascular diseases.

STATEMENT OF THE PROBLEM

A study to assess the knowledge and lifestyle practices regarding cardiovascular diseases among adults with hypertension and diabetes mellitus at CHRI, Kelambakkam.

OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding cardiovascular diseases.
2. To assess the lifestyle practices regarding cardiovascular diseases.
3. To determine the correlation between knowledge and lifestyle practices.
4. To determine the association of knowledge and lifestyle practices with selected demographic variables.

VARIABLES OF THE STUDY

Research Variables

- Knowledge regarding cardiovascular diseases.
- Lifestyle practices regarding cardiovascular diseases.

HYPOTHESES OF THE STUDY

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

Research Hypothesis (H₁): There will be a significant correlation between knowledge and lifestyle practices and their association with selected demographic variables.

Null Hypothesis (H₀): There will be no significant correlation between knowledge and lifestyle practices or their association with selected demographic variables.

REVIEW OF LITERATURE

A review of literature is a systematic review of published studies related to the research topic. It helps identify existing knowledge, research gaps, and provides a basis for the present study. Relevant books, journals, research articles, and online databases were reviewed to support the study.

Author (Year)	Study Design	Sample Size	Key Findings
Siddique AB (2024)	Cross-sectional	424	60.8% participants had adequate knowledge and practices regarding CVD.
Kebede T. et al. (2022)	Cross-sectional	387	67.7% had good knowledge and 54.0% showed favourable lifestyle practices.
Ghamri RA et al. (2024)	Cross-sectional	395	Moderate awareness of CVD risk factors; education influenced knowledge.
Machaalani M. et al. (2022)	Case-control	921	Fair knowledge and practice with positive attitude toward CVD prevention.
Zhou X. et al. (2025)	Cross-sectional	932	Moderate knowledge and practice; knowledge

			positively influenced practice.
Verma A. et al. (2019)	Cross-sectional	Metabolic syndrome patients	Average knowledge, good attitude, and poor lifestyle practices.
Workina A. et al. (2022)	Cross-sectional	318	Identified knowledge gaps and unhealthy behaviours among diabetic patients.
Alduraywish SA et al. (2022)	Cross-sectional	383	High CVD knowledge among T2DM patients; demographic factors affected awareness.
Negesa LB et al. (2020)	Cross-sectional	287	Only 31.2% had good knowledge of cardiovascular risk factors.
Mohammad NB et al. (2018)	Cross-sectional	456	Limited knowledge and lifestyle practices; emphasized need for health education.
Singhal K. et al. (2023)	Mixed-methods	264	Knowledge significantly associated with education and socioeconomic status.
Osmon M. & Zain N. (2025)	Cross-sectional	54	Good knowledge but poor lifestyle practices among diabetic patients.

RESEARCH METHODOLOGY

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

Study Design and Setting

A quantitative study was conducted using a descriptive cross-sectional research design among adults with hypertension and diabetes mellitus attending the Medical Outpatient Department (OPD) of Chettinad Hospital and Research Institute (CHRI), Kelambakkam, Tamil Nadu, India.

Study Population and Sample

The study population comprised adults diagnosed with hypertension and diabetes mellitus attending the Medical OPD during the study period. A total of 100 participants were selected using a non-probability purposive sampling technique. The sample size was calculated using the formula $n = 4pq/d^2$. Data were collected over a period of three months.

Eligibility Criteria

Adults diagnosed with hypertension and diabetes mellitus, aged 18 years and above, attending the Medical OPD, able to understand Tamil or English, and willing to participate were included in the study. Adults with established cardiovascular diseases or those unwilling to participate were excluded.

Data Collection Tool

Data were collected using a structured, self-administered questionnaire developed after an extensive literature review and expert consultation. The tool consisted of three sections: demographic characteristics, a 10-item knowledge questionnaire, and a 10-item lifestyle practice scale. Each correct response in the knowledge questionnaire was scored as 1 and an incorrect response as 0, with total scores categorized as adequate (8–10), moderate (5–7), and inadequate (<5) knowledge. Lifestyle practices were assessed using a 3-point Likert scale (Always = 3, Sometimes = 2, Never = 1), with total scores categorized as good (19–24), moderate (13–18), and poor (≤ 12) lifestyle practices.

Validity and Reliability

The content validity of the questionnaire was established by experts in Medical-Surgical Nursing. The instrument was adapted from standardized cardiovascular disease knowledge and lifestyle assessment questionnaires developed by the World Health Organization (WHO, 2017) and similar

validated tools reported in the *Journal of Clinical Hypertension* (2020).

Data Collection Procedure

After obtaining institutional ethical approval and informed consent from the participants, data were collected through face-to-face administration of the questionnaire. The purpose of the study was explained to all participants, and confidentiality of the information was assured. Each participant required approximately 15–20 minutes to complete the questionnaire.

Statistical Analysis

The collected data were coded and analyzed using descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation were used to summarize demographic characteristics, knowledge, and lifestyle practice scores. Pearson's correlation coefficient was used to assess the relationship between knowledge and lifestyle practices, while the Chi-square test was applied to determine the association between study variables and selected demographic characteristics. A p-value < 0.05 was considered statistically significant.

ANALYSIS AND INTERPRETATION

Statistical analysis organization of research findings

SECTION I: Frequency and percentage distribution of the demographic variables among adults with hypertension and diabetes mellitus.

SECTION II: Comparison of mean and standard deviation of Knowledge and Lifestyle Practice regarding cardiovascular diseases among adults with hypertension and diabetes mellitus.

SECTION III: Association of Knowledge regarding cardiovascular diseases among adults with selected demographic variables.

SECTION IV: Association of Lifestyle Practice regarding cardiovascular diseases among adults with selected demographic variables.

SECTION I: FREQUENCY AND PERCENTAGE DISTRIBUTION OF THE DEMOGRAPHIC VARIABLES AMONG

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS
WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

ADULTS WITH HYPERTENSION AND DIABETES MELLITUS

Table 1: Frequency and Percentage Distribution of Demographic Variables

S. N o.	Demographic Variable	Category	Frequency (n)	Percent age (%)
1	Age (years)	18–34	1	1.0
		35–49	31	31.0
		50–60	67	67.0
		>60	1	1.0
2	Gender	Male	42	42.0
		Female	58	58.0
3	Marital Status	Unmarried	2	2.0
		Married	91	91.0
		Widowed	6	6.0
		Divorced/Separated	1	1.0
4	Educational Status	No formal education	32	32.0
		Primary	32	32.0
		Secondary	28	28.0
		Tertiary	8	8.0
5	Occupation	Unemployed	45	45.0
		Self-employed	32	32.0
		Government employee	1	1.0
		Private sector	9	9.0

		Retired	13	13.0
6	Monthly Income (INR)	₹52,476 & above	3	3.0
		₹26,239–₹52,475	2	2.0
		₹15,743–₹26,238	6	6.0
		₹7,872–₹15,742	15	15.0
		₹2,362–₹7,871	10	10.0
		Less than ₹2,362	7	7.0
		No income	57	57.0
7	Duration of Hypertension	Less than 1 year	16	16.0
		1–5 years	46	46.0
		More than 5 years	38	38.0
8	Duration of Diabetes Mellitus	Less than 1 year	10	10.0
		1–5 years	46	46.0
		More than 5 years	44	44.0
9	Family History	Diabetes	22	22.0
		Hypertension	17	17.0
		Both	38	38.0
		No history	23	23.0
10	Treatment for Hypertension	Medication	68	68.0
		Lifestyle modification	6	6.0
		Both	20	20.0
		No response/Not applicable	6	6.0

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

11	Treatment for Diabetes	Medication	52	52.0
		Insulin	3	3.0
		Diet control	11	11.0
		Combination therapy	34	34.0
12	Smoking Status	Current smoker	9	9.0
		Former smoker	21	21.0
		Never smoked	70	70.0
13	Alcohol Consumption	Daily	3	3.0
		Occasionally	24	24.0
		Never	73	73.0
14	Physical Activity Level	Sedentary	32	32.0
		Moderate	46	46.0
		Active	22	22.0
15	Dietary Pattern	Vegetarian	12	12.0
		Non-vegetarian	31	31.0
		Mixed	57	57.0

INTERPRETATION OF DEMOGRAPHIC DATA

The study included adults with hypertension and diabetes mellitus. The majority of participants (67%) were aged 50–60 years, followed by 31% in the 35–49 years age group, while only 1% each belonged to the 18–34 years and >60 years age groups. Female participants (58%) outnumbered males (42%). Most participants were married (91%), whereas 6% were widowed, 2% were unmarried, and 1% were divorced or separated. Regarding educational status, 32% of the participants had no formal education, 32% had primary education, 28% had secondary education, and only 8% had tertiary education. Nearly half of

the participants were unemployed (45%), followed by 32% who were self-employed, 13% retired, 9% employed in the private sector, and 1% employed in the government sector. More than half (57%) reported no monthly income, while the remaining participants were distributed across different income categories. The majority of participants had a 1–5 years duration of hypertension (46%) and diabetes mellitus (46%), followed by 38% and 44%, respectively, who had these conditions for more than five years. A family history of both hypertension and diabetes was reported by 38% of participants, while 23% had no family history of either condition. Regarding treatment, 68% of participants were receiving medication for hypertension, whereas 52% were taking medication for diabetes mellitus. Most participants had never smoked (70%) and never consumed alcohol (73%). Nearly half (46%) reported a moderate level of physical activity, and the majority (57%) followed a mixed dietary pattern. Overall, the findings indicate that most participants were middle-aged, married females with moderate disease duration, low educational and income status, and generally healthy lifestyle behaviours with respect to smoking and alcohol consumption.

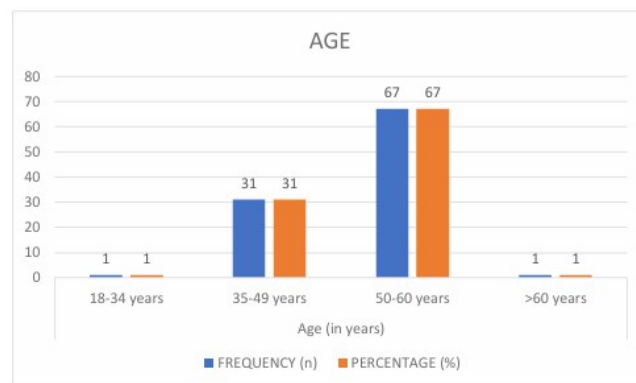
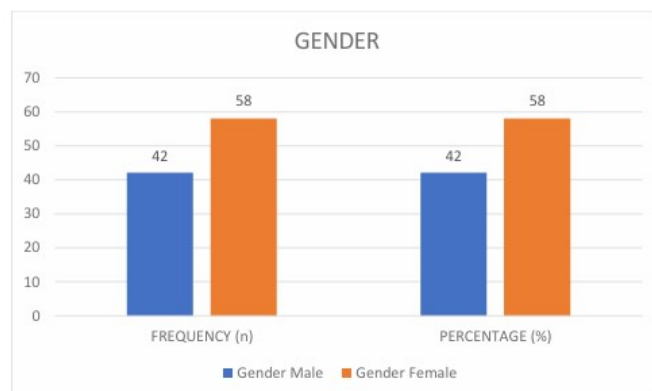


Figure 1: Frequency and percentage of Age



TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

Figure 2: Frequency and percentage of gender



Figure 3: Frequency and percentage of occupation

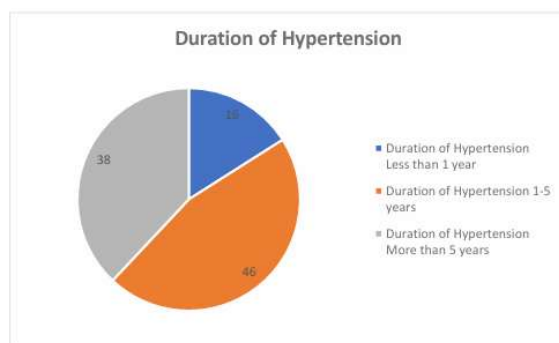


Figure 4: Frequency of duration of hypertension

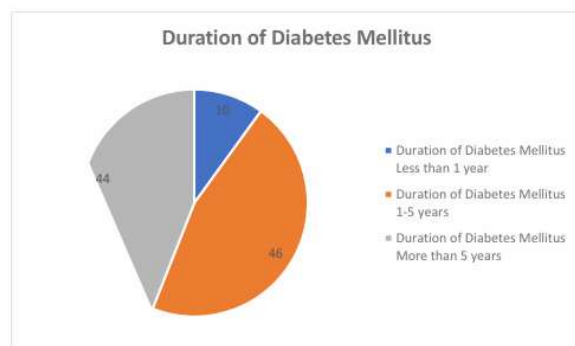


Figure 5: Frequency of duration of diabetes mellitus

SECTION II: COMPARISON OF MEAN AND STANDARD DEVIATION OF KNOWLEDGE AND LIFESTYLE PRACTICES REGARDING CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS

Table 2. Mean, Standard Deviation, and Correlation of Knowledge and Lifestyle Practice Scores Regarding Cardiovascular Diseases

S. No	Variable	Mean	Standard Deviation	Correlation(r)
1.	Knowledge	6.25	2.34	0.412
2.	Lifestyle Practice	18.24	3.51	

Interpretation

The mean knowledge score was 6.25 ± 2.34 (maximum score = 10), indicating a moderate level of knowledge regarding cardiovascular diseases among adults with hypertension and diabetes mellitus. The mean lifestyle practice score was 18.24 ± 3.51 (maximum score = 30), indicating moderate to good lifestyle practices. A moderately positive correlation ($r = 0.412$) was observed between knowledge and lifestyle practice scores, suggesting that participants with higher knowledge tended to have better lifestyle practices.

SECTION III: ASSOCIATION OF KNOWLEDGE REGARDING CARDIOVASCULAR DISEASES AMONG ADULTS WITH SELECTED DEMOGRAPHIC VARIABLES

Table 3. Association Between Knowledge Level and Selected Demographic Variables

S. No.	Demographic Variable	Category	Inadequate Knowledge (<5)	Moderate Knowledge (5-7)	Adequate Knowledge (8-10)	χ^2 Value	p-value
1	Age (Years)	18-49 years	8	15	9	1.234	0.539
		≥ 50 years	19	32	17		
2	Gender	Male	13	17	12	2.187	0.335
		Female	14	30	14		
3	Educational	No formal/Primary	22	30	12	8.45	0.015*

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

	Statu s	Second ary/Tert iary	5	17	14	6	
4	Occu pation	Employ ed	8	23	14	4.234	0.120
		Unempl oyed/Ret ired	19	24	12		
5	Mont hly Inco me	No inco me	18	27	12	2.876	0.237
		With in come	9	20	14		
6	Durat ion of Hy pertensi on	≤5 years	15	29	18	1.567	0.457
		>5 years	12	18	8		
7	Durat ion of Dia betes Melli tus	≤5 years	12	26	18	3.456	0.178
		>5 years	15	21	8		
8	Fami ly Histo ry	Present	18	36	23	4.890	0.087
		Absent	9	11	3		
9	Physi cal Activ ity	Sedenta ry	14	13	5	9.234	0.010**
		Moderate/Activ e	13	34	21		

*Significant at $p < 0.05$ level *Significant at $p < 0.01$ level

The above table shows that there was a significant association between knowledge level and selected demographic variables such as educational status ($p = 0.015$) and physical activity level ($p = 0.010$). There was no significant association between knowledge level and other demographic variables such as age, gender, occupation, monthly income, duration of hypertension, duration of diabetes mellitus, and family history.

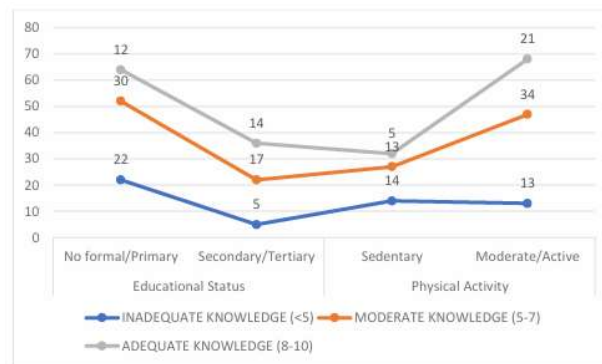


Figure 6: Association between Knowledge Level and Demographic Variables

SECTION IV: ASSOCIATION OF LIFESTYLE PRACTICE REGARDING CARDIOVASCULAR DISEASES AMONG ADULTS WITH SELECTED DEMOGRAPHIC VARIABLES

Table 4: Association between Lifestyle Practice Level and Demographic Variables

S · N o .	Demo grap hic Varia ble	Categor y	Po or Pr act ice (≤1 2)	Mo der ate Pr act ice (13 – 18)	Go od Pr act ice (19 – 24)	χ^2 V alue	p- va lu e
1	Age (Year s)	18–49 years	2	15	15	2.345	0.310
		≥50 years	7	27	34		
2	Gender	Male	4	18	20	0.234	0.890
		Female	5	24	29		
3	Educ ation al Statu s	No formal/P rimary	8	28	28	6.789	0.034*
		Seconda ry/Tertia ry	1	14	21		
4	Occu pation	Employe d	3	19	23	2.456	0.292
		Unempl oyed/Ret ired	6	23	26		

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

5	Monthly Income	No income	7	24	26	3.56	0.16
		With income	2	18	23	7	8
6	Duration of Hypertension	≤5 years	4	25	33	3.89	0.14
		>5 years	5	17	16	0	3
7	Duration of Diabetes Mellitus	≤5 years	3	22	31	4.23	0.12
		>5 years	6	20	18	4	0
8	Family History	Present	5	34	38	4.56	0.10
		Absent	4	8	11	7	2
9	Dietary Pattern	Vegetarian/Mixed	6	37	45	5.67	0.05
		Non-vegetarian	3	5	4	8	9
10	Physical Activity	Sedentary	6	18	8	14.5	0.001
		Moderate/Active	3	24	41	67	**

*Significant at $p < 0.05$ level *Significant at $p < 0.01$ level

The above table shows that there was a significant association between lifestyle practice level and selected demographic variables such as educational status ($p = 0.034$) and physical activity level ($p = 0.001$). There was no significant association between lifestyle practice level and other demographic variables such as age, gender, occupation, monthly income, duration of hypertension, duration of diabetes mellitus, family history, and dietary pattern.

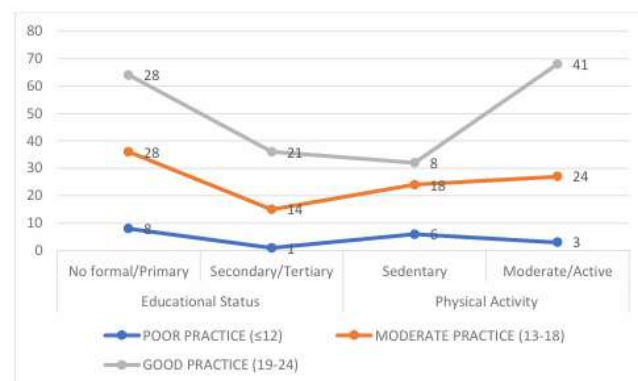


Figure 7: Association between Lifestyle Practice Level and Demographic Variables

DISCUSSION

The present study assessed the knowledge and lifestyle practices regarding cardiovascular diseases among adults with hypertension and diabetes mellitus attending the outpatient department of CHRI, Kelambakkam. Most participants were aged 50–60 years (67%), female (58%), and married (91%). A large proportion had low educational status and no regular income, indicating the need for greater health education among high-risk groups. The mean knowledge score (6.25 ± 2.34) indicated moderate knowledge regarding cardiovascular diseases. Although participants were receiving treatment for hypertension and diabetes, their awareness of cardiovascular risk factors and preventive measures was not adequate. Similar findings have been reported in previous studies by Siddique et al. (2024) and Negesa et al. (2020). The mean lifestyle practice score (18.24 ± 3.51) reflected moderate to good lifestyle practices. However, many participants did not consistently follow recommended healthy behaviors such as regular physical activity and a balanced diet. These findings are comparable with studies by Verma et al. (2019) and Mohammad et al. (2018). A moderate positive correlation ($r = 0.412$) was observed between knowledge and lifestyle practices, suggesting that better knowledge was associated with healthier behaviors. Significant associations were found between knowledge and educational status ($p = 0.015$), knowledge and physical activity ($p = 0.010$), lifestyle practices and educational status ($p = 0.034$), and lifestyle practices and physical activity ($p = 0.001$). No significant association was found with other demographic variables. Overall, the findings highlight the need for continuous health education and behavior change interventions to reduce cardiovascular risk.

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

LIMITATIONS

1. The study was conducted in a single hospital setting.
2. The sample size was limited to 100 participants.
3. Non-probability purposive sampling may have introduced selection bias.
4. Data were self-reported and subject to recall bias.
5. The cross-sectional design could not establish causal relationships.

IMPLICATIONS

Nursing Practice

- Provide regular health education and lifestyle counselling.
- Encourage adherence to healthy lifestyle practices.

Nursing Education

- Strengthen education on cardiovascular disease prevention and patient counselling.

Nursing Administration

- Organize structured awareness programmes and develop patient education materials.

Nursing Research

- Conduct multicentre studies with larger samples and evaluate lifestyle intervention programmes.

RECOMMENDATIONS

1. Conduct regular health education programmes for patients with hypertension and diabetes.
2. Promote lifestyle modification focusing on diet, exercise, and stress management.
3. Encourage regular screening and follow-up of high-risk individuals.
4. Develop community-based awareness programmes on cardiovascular disease prevention.
5. Conduct future multicentre and interventional studies with larger sample sizes.

CONCLUSION

The study concludes that adults with hypertension and diabetes mellitus had moderate knowledge and moderate to good lifestyle practices regarding cardiovascular disease prevention. A positive correlation was observed between knowledge and lifestyle practices, while educational status and physical activity were significantly associated with both outcomes. These findings emphasize the importance of structured health education, regular counselling, and lifestyle modification programmes to improve awareness, promote healthy behaviors, reduce cardiovascular risk, and enhance the quality of life among high-risk populations.

REFERENCES

1. Alduraywish SA, Aldakheel FM, Azizalrahman LA, Alzaid LT, Alqahtani SS, Alhussein SH, Almutairi AM. Knowledge about the risk of cardiovascular disease among adults with type 2 diabetes visiting outpatient clinics at a tertiary hospital in Riyadh, Saudi Arabia: A cross-sectional study. *Int J Environ Res Public Health*. 2022;19(9):4996.
2. Alhowaymel FM, Abdelmalik MA, Mohammed AM, Mohamaed MO, Alenezi A. Knowledge, attitudes, and practices of hypertensive patients towards stroke prevention among the rural population in Saudi Arabia: A cross-sectional study. *SAGE Open Nurs*. 2023;9:23779608221150717.
3. Alsaadon H, Afroz A, Karim A, Habib SH, Alramadan MJ, Billah B, Shetty AN. Hypertension and its related factors among patients with type 2 diabetes mellitus: A multi-hospital study in Bangladesh. *BMC Public Health*. 2022;22(1):198.
4. Bashatah A, Syed W, Al-Rawi MB. Knowledge of cardiovascular disease risk factors and its primary prevention practices among the Saudi public: A questionnaire-based cross-sectional study. *Int J Gen Med*. 2023;16:4745-4756.
5. Bonekamp NE, Visseren FL, Cramer MJ, Dorresteijn JA, van der Meer MG, Ruigrok YM, van Sloten TT, Teraa M, Geleijnse JM, Koopal C. Long-term lifestyle change and risk of mortality and type 2 diabetes in patients with cardiovascular disease. *Eur J Prev Cardiol*. 2024;31(2):205-213.

TO ASSESS THE KNOWLEDGE AND LIFESTYLE PRACTICE OF CARDIOVASCULAR DISEASES AMONG ADULTS
WITH HYPERTENSION AND DIABETES MELLITUS IN A TERTIARY CARE HOSPITAL

6. De Zoysa PD, Weeraratna TP, Darshana IL, Wasana KG, Piyasekara B, Jayasekara MM, Sujanitha V, Silva S, Mettananda C, Ramadasa GU, Pathirage LP. Statin use and low-density lipoprotein cholesterol target achievement for primary prevention of atherosclerotic cardiovascular disease in patients with type 2 diabetes mellitus: A multicenter cross-sectional study in Sri Lanka. *PLoS One*. 2025;20(2):e0319030.
7. Gautam P, Dahal P, Paul D, Alam K. Health-related knowledge, attitude, practice and quality of life among diabetic hypertensive patients in Eastern Nepal. *Pharmacophore*. 2023;14(2):11-18.
8. Gebeyehu AF, Berhane F, Yimer RM. Dietary knowledge and practice and its associated factors among type 2 diabetes patients on follow-up at public hospitals of Dire Dawa, Eastern Ethiopia. *SAGE Open Med*. 2022;10:20503121221107478.
9. Jan B, Dar MI, Choudhary B, Basist P, Khan R, Alhalimi A. Cardiovascular diseases among Indian older adults: A comprehensive review. *Cardiovasc Ther*. 2024;2024:6894693.
10. Kanejima Y, Shimogai T, Kitamura M, Ishihara K, Izawa KP. Impact of health literacy in patients with cardiovascular diseases: A systematic review and meta-analysis. *Patient Educ Couns*. 2022;105(7):1793-1800.
11. Katundu KG, Mukhula V, Phiri T, Phiri C, Filisa-Kaphamtengo F, Chipewa P, Chirambo G, Mipando M, Mwandumba HC, Muula AS, Kumwenda J. High prevalence of dyslipidaemia among persons with diabetes mellitus and hypertension at a tertiary hospital in Blantyre, Malawi. *BMC Cardiovasc Disord*. 2022;22(1):557.
12. Kebede T, Taddese Z, Girma A. Knowledge, attitude and practices of lifestyle modification and associated factors among hypertensive patients on-treatment follow-up at Yekatit 12 General Hospital in the largest city of East Africa: A prospective cross-sectional study. *PLoS One*. 2022;17(1):e0262780.
13. Khanal MK, Bhandari P, Dhungana RR, Gurung Y, Rawal LB, Pandey G, Bhandari M, Devkota S, Courten MD, Courten BD. Poor glycemic control, cardiovascular disease risk factors and their clustering among patients with type 2 diabetes mellitus: A cross-sectional study from Nepal. *PLoS One*. 2022;17(7):e0271888.
14. Machaalani M, Fakhry B, Zwaideh M, Mendelek K, Mahmoud N, Hammoud T, Chahine PM. Knowledge, attitude, and practice toward cardiovascular diseases in the Lebanese population. *Glob Heart*. 2022;17(1):47.
15. Madoshi PB, Karuhanga TA, Kibate D. Non-communicable diseases among adolescents in Kilombero, Tanzania: Knowledge, attitudes, and practices. *SSMJ*.
16. Mahdi HA, Al-Humairi AK. Assessment of knowledge about hypertension among hypertensive patients in Babylon Province. *Med J Babylon*. 2022;19(1):31-36.
17. Mohamud MF, Jeele MO. Knowledge, attitude, and practice regarding lifestyle modification among type 2 diabetes patients with cardiovascular disease at a tertiary hospital in Somalia. *Ann Med Surg*. 2022;79:103883.
18. Siam NH, Snigdha NN, Tabasumma N, Parvin I. Diabetes mellitus and cardiovascular disease: Exploring epidemiology, pathophysiology, and treatment strategies. *Rev Cardiovasc Med*. 2024;25(12):436.
19. Siddique AB, Hosen MS, Akter H, Hossain SM, Al Mamun M. Assessment of knowledge, attitudes, and practices regarding cardiovascular diseases among older individuals of rural Bangladesh: Findings from a face-to-face interview. *Front Public Health*. 2024;12:1336531.
20. Workina A, Habtamu A, Diribsa T, Abebe F. Knowledge of modifiable cardiovascular disease risk factors and its primary prevention practices among diabetic patients at Jimma University Medical Centre: A cross-sectional study. *PLoS Glob Public Health*. 2022;2(7):e0000575.
21. Zhou X, Zou C, Li X, Tian H, Miao Y, Ke T, Zhao L. Knowledge, attitude, and practice of cardiovascular disease prevention among patients with type 2 diabetes and/or overweight or obesity. *Front Public Health*. 2025;13:1712899.