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Cardio Metabolic Risk Factors of Hypertension among the Elderly

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doi: [10.33472/AFJBS.6.6.2024.8385-8391](https://doi.org/10.33472/AFJBS.6.6.2024.8385-8391)**ABSTRACT:**

The prevalence of hypertension was increased with the growing age in India, as India is a developing country and there is high prevalence rate seen in elderly. Due to lack of physical activities, abdominal obesity, lipid profile such as triglyceride level, stress blood glucose level, etc. These are the contributing cardio metabolic risk factors were seen in hypertensive elderly.

Methodology- The research approach adopted for the current study was non-experimental descriptive approach. The study was conducted on elderly from selected Areas of Pune city. Non probability purposive sampling technique was used to select samples (n= 150). The tools were developed in the sections of Anthropometric Measurements, Physical Activity (MET Score), Blood Glucose Level, Triglyceride Level and Elderly Stress Level and it was used to collect the data from elderly which was validated by the experts and reliability for MET Score tool and Stress Assessment tool was calculated. Formal permission was taken from IEC, BV(DU)CON, Pune to conduct the study. The collected data was processed and analysed using frequency and percentage distribution method and categorized the data with selected demographic variable.

Result: The results show that 39.33% of elderly were having increased body mass index, 50% of elderly were having increased high risk category of waist/hip ratio, 80.67% elderly were performing moderate intensity activity whereas 8% of elderly performing vigorous intensity activity, 34.67% were having increased blood glucose level, 24.67% were having increased triglyceride level and 79.33% of elderly were having moderate level to severe level of stress.

Conclusion: The study concludes that hypertensive person was having cardio metabolic risk factors which lead to comorbidities related to vascular heart disease and metabolic disorders in elderly. Despite the study shows that majority of elderly were having more than one cardio metabolic risk factors.

Keywords: Assess, Cardio Metabolic Risk Factors, Hypertension, Elderly

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1. INTRODUCTION

Hypertension is very well identified as a rise of blood flow into the vessels which over shoots the normal levels. The normal values are said to be 120/80 of mercury. This force when goes above the normal for a quite a long duration of time causes high blood pressure. There are major risks involved which causes life style modification. And this has to prevent and treat with healthy lifestyle choices like giving up smoking, daily exercising, and balanced diet. Over and above the individual requires medication.

Seventy percent of seniors over 65 have hypertension, according to a National Health and Nutrition Examination Survey (NHANES) survey. According to estimates, 1.27 billion older adults (30–79 years old) worldwide have hypertension in 2019. This translates to 32% of women and 34% of men worldwide. The prevalence of hypertension increases with age, reaching over 60% in seniors over 60. Age-related decreases in physical activity are linked to typical lifestyles and increases in body weight; hence, as the world's population ages quickly, the prevalence of hypertension will keep rising.^[1]

As per the research study conducted on the prevalence and associated risk factors of hypertension among person with age group of 15-49 years in India in which they focused on the low socio-economic group of the peoples may developed such & conditions in which due to life style changes such as alcohol consumption and high calorie food intake.^[2]

A study was conducted on association between Cardio-metabolic risk factors, and body mass index, waist circumference and body fats, where the researchers conclude that High BMI, Waist Circumference and Body fats percent are strongly associated with hypertension with individuals. Where as with high waist circumference being twice more likely to have risk of hypertension.^[3]

Need of the Study

Hypertension is more commonly seen in elderly with their increasing age. Understanding the causes and risk factors in this population is very essential to promote health and wellbeing. Hypertension is major risk factors which lead to cardiovascular disease such as strokes, heart attack and heart failure. An Elderly with hypertension are at an increased risk of developing this condition which can have significant impact on the quality of life and increased mortality rate.^[4]

Also due to age related physiological changes may increase the risk to lead hypertension such as decreased kidney functioning, arterial stiffness, blood pressure regulation. Studying hypertension in elderly allows researches and health care provider in better understanding and recognition regarding unique consideration.^[5]

It also can helps in treatment mortalities and new, innovation as hypertension in elderly can be challenging task due to factors such as medications adherence, drug interaction and their adverse effect. By studying hypertension in this population helps in effective treatment planning that may safe and secure for the elderly.^[6]

Objectives:

1. To identify the cardio metabolic risk factors of hypertension among elderly.
2. To categorise the cardio metabolic risk factors among elderly as per their selected demographical variables.

2. RESEARCH METHODOLOGY

Quantitative research approach was used in which Non Experimental – descriptive research design was adopted. The study was approved by IRRC and Institutional Ethics Committee. In

this present study, samples are elderly people from selected areas of Pune city available at the time of data collection and given written consent to participate in the study. The sample of study is an elderly who were hypertensive, who were from the age group between 60-70 years. Total 150 samples were selected using non-probability purposive sampling technique is used. Total 10 samples were taken for the reliability. Informed consent taken from the participants. Total sample for pilot study were 15. Identify and categorised the cardio-metabolic risk factors of hypertension. Hence, it was found that the study is feasible to conduct. The data collection tool consists of **Section I:-**Demographic variables (Age, Gender, Blood Pressure, Educational status, Occupation, smoking, alcohol consumption, type of diet, family history of hypertension, etc.). **Section II:-** A) Anthropometric Measurement (Weight, Height, Waist Circumference, Hip Circumference, Body Mass Index, Waist Hip Ratio), B) Physical Activity (MET Score), C) Random Blood Glucose Level, D) Triglyceride Level, E) Stress Assessment Tool.

3. RESULTS

Section I: - Analysis of Demographic Characteristics in Frequency and Percentage

Majority (39.33%) of them belongs to age group of 60-63 years, Majority (52%) of them were female, Majority (36.67%) of them had systolic blood pressure ranges from 150-159, Majority (49.34%) of them had diastolic blood pressure ranges from 110-119, Majority (38.67%) of them had secondary education, Majority (52%) of them were retired, Majority (76%) of them were non-smokers, Majority (84%) of them were not consume alcohol, Majority (76%) of them had both veg and non veg diet, Majority (90.67%) of them had no family history of hypertension.

Section II (A):- Frequency and Percentage Distribution of Elderly Body Mass Index (BMI) and Waist Hip Ratio

Analysis depicts that 39.33% of elderly had elevated body mass index. Analysis depicts that 50% of them were in the category of high risk considering the waist/ hip ratio.

Section II (B):- Frequency and Percentage Distribution of Elderly Physical Activity (MET Score)

Majority (80.67%) of elderly had moderate level of MET Score and 11.33% of them had light intensity activity level which is one of the important cardio metabolic risk factor

Section II (C):-Frequency and Percentage Distribution of Elderly Blood Glucose Level (BSL)

Analysis depicts that 34.67% of them had high blood glucose level

Section II (D):-Frequency and Percentage Distribution of Elderly Triglyceride Level (TG Test)

Analysis depicts majority (75.33%) of them had of normal level of triglyceride test results but 24.67% of them had increased triglyceride level which is noticeable fact.

Section II (E):-Frequency and Percentage Distribution of Elderly Stress Assessment Tool

Analysis depicts that 79.33% of them were having moderate to severe stress.

Table No. 1 Categorisation of identical risk factors of hypertension among elderly as per selected demographical variables

SR. NO.	Demographic Variable (n=150)	BMI	Waist Hip Ratio	Physical Activity (MET Score)	Random Blood Glucose Level	Triglyceride level	Level of Stress
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1.1	Age	60-63		20	31	5	22	14	8
		64-66		16	22	3	16	16	5
		67-70		23	22	4	14	7	7
1.2	Gender	Male		35	15	0	24	15	6
		Female		24	60	12	28	22	14
1.3	Blood Pressure	Systolic	below 140	6	8	2	3	5	1
			140-149	32	31	8	25	15	7
			150-159	16	26	2	19	12	8
			160-169	4	7	0	5	5	3
			170-179	1	2	0	0	0	1
		Diastolic	below 100	9	10	4	7	3	8
			100-109	17	19	1	12	11	0
			110-119	27	38	2	29	19	8
			120-129	6	8	5	4	4	4
1.4	Educational status	Uneducated		3	8	1	6	3	2
		Primary Education		10	27	6	10	7	5
		Secondary Education		27	24	4	18	13	9
		Higher Secondary Education		15	10	1	12	8	1
		Graduate		4	6	0	6	6	3
1.5	Occupational Status	Retired		38	21	0	27	21	7
		Housewife		21	54	12	25	16	13
1.6	Smoking	Yes		17	10	1	11	9	4
		No		42	65	11	41	28	16
1.7	Alcohol Consumption	Yes		14	7	0	10	6	5
		No		45	68	12	42	31	15
1.8	Type of Diet	Veg		9	21	3	12	8	5
		Non-Veg		Nil	nil	Nil	Nil	Nil	nil
		Both		50	54	9	40	29	15
1.9	Family History of Hypertension	Yes		5	6	1	5	3	2
		No		54	69	11	47	34	18

Table No. 1.1 depict that majority (waist/ hip ratio, MET score, blood glucose level, stress level) of the risk factors were present in the age group of 60-63 years

Table No. 1.2 depict that majority (waist/ hip ratio, MET score, blood glucose level, triglyceride level, stress level) of the risk factors were present in the female.

Table No. 1.3 depict that majority (BMI, waist/ hip ratio, MET score, blood glucose level, triglyceride level) of the risk factors were present in the elderly with 140-149 systolic blood pressure and majority (BMI, waist/ hip ratio, blood glucose level, triglyceride level) of the risk factors were present in the elderly with 110-119 diastolic blood pressure.

Table No. 1.4 depict that majority (BMI, blood glucose level, triglyceride level, stress level) of the risk factors were present in the elderly educated up to secondary level.

Table No. 1.5 depict that equal (BMI, waist/ hip ratio, MET score, blood glucose level, triglyceride level, stress level) number of the risk factors were present among retired elderly and housewives.

Table No. 1.6 depict that majority (BMI, waist/ hip ratio, MET score, blood glucose level, triglyceride level, stress level) of the risk factors were present among non-smokers.

Table No. 1.7 depict that majority (BMI, waist/ hip ratio, MET score, blood glucose level, triglyceride level, stress level) of the risk factors were present among non-alcoholics.

Table No. 1.8 depict that majority (BMI, waist/ hip ratio, MET score, blood glucose level, triglyceride level, stress level) of the risk factors were present among who eats both vegetarian and non-vegetarian diet.

Table No. 1.9 depict that majority (BMI, waist/ hip ratio, MET score, blood glucose level, triglyceride level, stress level) of the risk factors were present among elderly who were not having family history of hypertension.

4. CONCLUSION

This study concludes that, the data collected from 150 elderly who had cardio metabolic risk factor of hypertension at selected areas of Pune city. Descriptive statistics were used to analyze and categorized the data as per the selected demographic variables. The result shows that majority of elderly had more than one cardio metabolic risk factors were present as per age in 60-63 years group, were females, were having 140-149 systolic and 110-119 diastolic blood pressure, were having secondary education status. The study indicates that assumption stated was true that the cardio metabolic risk factors which lead to co morbidities related to vascular heart disease and metabolic disorders. The novelty of the research study determine the cardio metabolic factors in elderly which leads to other co morbidities of vascular and metabolic system were the study gives brief understanding about the hypertension prevalence in elderly.

Conflict of Interest: I certify that I have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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