AJHS
Asian Journal of Home Science
Volume **14** | Issue 2 | December, 2019 | 354-356

DOI: 10.15740/HAS/AJHS/14.2/354-356
ISSN : 0973-4732 ■ Visit us: *www.researchjournal.co.in*

Research Paper

Cardiovascular disease and its association with body mass index: A study of rural women of Uttarakhand

■ **Janki Joshi and Nidhi Trivedi**

Received: 24.06.2019; **Revised:** 20.10.2019; **Accepted:** 04.11.2019

See end of the paper for authors' affiliations

Janki Joshi
Department of Home Science, Surajmal Agarwal Private Kanya Mahavidyala, Kichha (Uttarakhand) India
Email : janki.30121@gmail.com

■ **ABSTRACT :** Cardiovascular diseases (CVD), in broad terms, comprise diseases of the heart, blood vessels and circulation. The most common cardiovascular diseases are hypertension, coronary heart diseases, cerebrovascular diseases, and peripheral vascular diseases. Cardiovascular disease causes million deaths among women annually. It is the largest and single cause of mortality among women, accounting for one-third of all deaths among women worldwide. Present study was conducted to assess to see the association between occurrence of CVD and the respondents Body Mass Index. For this Chi-square test was applied and the results were found to be significant at $p<0.05$, indicating that occurrence of CVD among respondent depends on the respondents BMI. Respondents with higher BMI level had greater chances of heart disease.

■ **KEY WORDS:** Cardiovascular disease, Medical history, Body mass index

■ **HOW TO CITE THIS PAPER :** Joshi, Janki and Trivedi, Nidhi (2019). Cardiovascular disease and its association with body mass index: A study of rural women of Uttarakhand. *Asian J. Home Sci.,* **14** (2) : 354-356, **DOI: 10.15740/HAS/AJHS/14.2/354-356.**

Women with her multiple role in the family, career and society faces tremendous challenge in her everyday life. Increase in lifestyle standards, more of convenience food consumption and recreation with reduced physical activity has made women the victims for cardiovascular disease. The mortality rate among women suffering from cardiovascular disease is also higher than that of men across the world, including India. The prevalence of cardiovascular disease in India has risen four-fold in the past four decades. Indians are succumbing to heart disease and stroke in the most productive age of their lives and about a decade earlier than their western counterparts. Wilson *et al*. (2003) states that the most reliable estimates to date the associations between body mass index and cardiovascular disease in Asia-Pacific region was that a continuous positive association between baseline body mass index and the risk of heart disease with each two kilograms per square meter increase in body mass index.

■ RESEARCH METHODS

A bench mark survey was carried out by investigator. Multistage, purposive-cum-random sampling technique was used. For the present study, Uttarakhand state was selected purposively as the investigator belonged to it. Districts U.S. Nagar was selected purposively from the state as this was near to the place

of residence of the investigator. Rudrapur block from district and Jawahar Nagar village was selected purposively. Total sample size comprised of 100 women selected randomly. Data was collected through preceded interview schedule.

All the responses received on the data sheet were categorized and analysed using both descriptive and the rational statistics including frequency, percentage and Chi-square test.

■ RESEARCH FINDINGS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Demographic profile of the respondents:

Demographic profile of the respondents includes age, marital status, education level, occupation and family income. The details of the respondents are shown in Table 1. The mean age of the respondents were 36.14 ±12.88. On the whole it was observed that 31 per cent respondents were between the ages of 31-45 years where as only 12 per cent were above 61 years of age. Mostly 80 per cent respondents were married. 12 per cent respondents were illiterate whereas 15 per cents were educated above intermediate level. Total 54 per cent respondents were housewife. Maximum 55 per cent respondents had their monthly family income between the ranges of Rs. 15001- Rs. 30000. Only three per cent respondents had their family income above Rs. 50000 per month.

Body Mass Index (BMI) of the respondents:

It is clear from the Table 2 that half 50 per cent of the respondents were obese followed by 32 per cent were normal eight per cent were under Obesity grade I and three per cent were under Obesity grade II. It is also found that six per cent were under weight while only one per cent was under Obesity grade III.

Medical history of the respondents:

Table 3 indicates that ten per cent respondents were suffering from heart disease, thirty two per cent respondents had diabetes, only one per cent had cancer, four per cent had respiratory problem and 11 per cent had thyroid problem. Data in the table indicate that 62 per cent respondents reported that they had no medical

Table 1 : Demographic profile of the respondents

Parameters	n= 100
Age (Years)	
20-30	38
31- 40	31
41-50	14
51-60	12
Above 60 years	5
Mean ±SD	36.14 ±12.88
Marital status	
Single	15
Married	80
Widowed	5
Education	
Illiterate	12
Primary	11
High School	16
Intermediate	46
Above Intermediate	15
Occupation	
Student	23
Housewife	54
Employed	13
Self-employed	10
Monthly family income	
Below 15000	18
Above 15001-30000	55
Greater than 30001-50000	24
Above 50000	3

Table 2 : Body mass index (BMI) of the respondents

Body Mass Index (BMI)	n=100
Under weight	6
Normal	32
Obese	50
Obesity (grade I)	8
Obesity (grade II)	3
Obesity (grade III)	1

Table 3 : Medical history of the respondents

Medical history	n=100
Heart disease	10
Diabetes	32
Cancer	1
Respiratory illness	4
Thyroidism	11
No medical history	62

history.

Hypothesis testing:

Heart disease among respondents associated with BMI of respondents:

Null hypothesis was formulated to see the association between occurrence of CVD and the respondents BMI. The result is presented in Table 4.

Table 4 : Chi-square for occurrence of CVD among respondent's and BMI of the respondents

BMI of respondents	Occurrence of CVD		p- value
	Yes	No	
Underweight	0	6	
Normal	0	32	
Obese	1	49	1.83464E-11
Obesity (Grade I)	7	1	
Obesity (Grade II)	1	2	
Obesity (Grade III)	1	0	

H0: There is no association between occurrence of CVD and respondents BMI.

H1: There is an association between occurrence of CVD and respondents BMI.

The result was found to be significant at $p<0.05$, indicating that occurrence of CVD among respondent depends on the respondents BMI. Respondent's higher BMI levels had greater chances of heart disease and null hypothesis was rejected. According to Hotchkiss, (2009) a higher BMI in early adulthood is associated with an elevated risk of coronary heart disease mortality. Dudina *et al*. (2011) stated that overall, overweight and obesity relate to CVD mortality in a strong and graded manner. The effects are greater in women and markedly so in younger persons. It is likely that a substantial part of the BMI-associated risk of CVD mortality is mediated through other known CVD risk factors. This increases the public health importance of BMI as both a simple indicator and mediator of CVD risk.

Conclusion:

From the whole it was concluded that respondents with higher BMI level had greater chances of heart disease. A high body mass index is a risk factor for mortality from overall cardiovascular disease.

Authors' affiliations:
Nidhi Trivedi, Department of Home Science, Surajmal Agarwal Private Kanya Mahavidyala, Kichha (Uttarakhand) India

■ REFERENCES

Dudina, A., Cooney, MT., Bacquer, DD., Backer, GD., Ducimetière, P., Jousilahti, P., Keil, U., Menotti, A., Njølstad, I., Oganov, R., Sans, S., Thomsen, T., Tverdal, A., Wedel, H., Whincup, P., Wilhelmsen, L., Conroy, R., Fitzgerald, A. and Graham, I. (2011). Relationships between body mass index, cardiovascular mortality, and risk factors: a report from the SCORE investigators. *Eur. J. Cardiovasc Prev. Rehabil*,**18**(5):731-742.

Hotchkiss, J. (2009). Association of body mass index, waist circumference and waist-hip ratio with mortality in the scottish health surveys. *J. Epidemiol. & Community Health* , **63** (Suppl II):A1–A36. A21.

Wilson, F., Peter, W. and Schaefer, J.E. (2003). Impact of Body Mass Index on coronary heart disease risk factors in men and women. *American J. Cardiology*, **18**(2) : 213-218.

Xavier, S. (2008). India to carry majority of world's heart disease burden by 2010. *J. American Dietetic Association*, **123** (7) : 1423-1435.