

Physical Activity Level and Perception regarding Lifestyle of the Patients Suffering from Coronary Artery Disease (CAD) in Kashmir

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ABSTRACT

Coronary Artery disease (CAD) has attained the shape of epidemic in India; one third of all mortality is attributed to cardiovascular diseases. A sedentary lifestyle and poor cardio respiratory fitness are each associated with a twofold or more increase in CHD risk. The present study was conducted in the hospital settings with the aim to assess the physical activity level and perception about lifestyle of the patients suffering from CAD in Kashmir. The sample was collected from various private clinics and the government hospitals of Kashmir and a structured questionnaire was used. The results of the study revealed that most of the respondents 59.7% were urbanites, and only 40.3 % were rural dwellers, out of which majority *i.e.*, 70% were males and only 30 % were females. The most disturbing revelation of the study is that a significant number of young males (30-39 yrs) *i.e.*, 8.6 % rural and 10.1% urban males suffered from the disease. The activity patterns were sedentary, highest number of respondents *i.e.*, 82.7% respondents did not performed any kind of physical activity. In contrast to females, males were active. Rural dwellers were much active than their urban counterparts, which can be ascertained by the following figures, about 28.3 % performed some light physical activity every week and 25.8 % respondents belonging to the age group of 30-39 yrs performed moderate physical activities every week. About 83.2 % respondents irrespective of the age groups admitted that lifestyle changes are responsible for the development of this disease. Males had better understanding of lifestyle practices leading to the disease. It was indicated that a higher number of urban dwellers had attempted at cutting down the calories and tried to lose weight. Respondents belonging to the youngest age group of 30-39 years were more careful about the lifestyle which is evident from their attempts of cutting down calories *i.e.*, 83.1 % losing weight 89.2 %, believing that lifestyle changes are responsible for many diseases 90.8 % and about 69.2% believed that lifestyle modification can help in the management of this disease. Proper nutrition, health education and above all physical activity can prevent the disease to a greater extent

Key Words : CAD, Physical activity, Sedentary Lifestyle, Prevalence, dwelling, Gender, Perception

INTRODUCTION

Cardiovascular diseases account for major incidence of non-communicable diseases, becoming one of the leading causes of deaths in India and have traversed the boundaries of gender; dwelling etc. Chauhan *et al.* (2013). Coronary artery disease (CAD) has attained the shape of epidemic in India, one third of all mortality is imputed

to CVD Prabhakaran *et al.* (2016). The Registrar General of India reported that CHD caused 17 per cent of total deaths and 26 percent of adult deaths in the year 2001-2003. There are many causative factors for CVD, Controllable: Smoking (Keto *et al.*, 2016), High Blood Pressure. (Milane *et al.*, 2014), Physical inactivity (Sinha *et al.* 2016), BMI ≥ 30 (Alkhawam, 2016), High blood Cholesterol (Peters *et al.*, 2016), Psychological factor

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(Khayyam-Nekoue *et al.*, 2012) and Non-controllable: Diabetes (Hajar *et al.*, 2017), Age and Gender (Vitale *et al.*, 2010, Dallongeville *et al.*, 2010; De Smedt D *et al.*, 2016), Family History (Bittencourt *et al.*, 2018).

A sedentary lifestyle and poor cardio respiratory fitness are each associated with a twofold or more increase in CHD risk. Proper and regular aerobic exercise lowers blood pressure, reduces triglyceride concentration, improves HDL-C, helps in weight control and enhances insulin sensitivity. Other potential benefits of exercise include increased myocardial electrical stability, decreases platelet aggregation and fibrinogen levels. European guidelines on cardiovascular disease prevention in clinical practice (2016), strongly recommend regular exercise training as a cornerstone of CAD prevention and treatment (Piepoli, 2016).

Purpose:

There is an increased incidence and prevalence of CAD in the valley and this increase is partly attributed to physical inactivity, besides improper diet, wrong cooking practices and ethnic predisposition. The current study is an attempt to assess the physical activity levels and perception of the patients suffering from CAD in Kashmir.

METHODOLOGY

The present study was conducted in the hospital settings, using random purposive sampling technique on the basis of estimated prevalence of the disease. A structured questionnaire was used to elicit the required data.

RESULTS AND DISCUSSION

Fig. 1 reveals the distribution of the respondents as per dwelling. It was seen that most of the respondents,

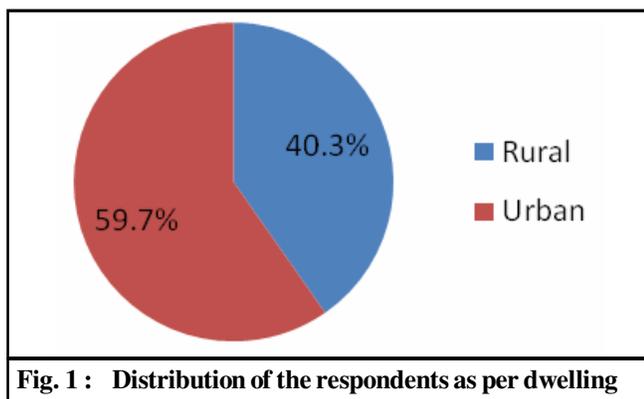


Fig. 1 : Distribution of the respondents as per dwelling

i.e., 59.7 % (n=597) belonged to the urban area and only 40.3 % (n=403) were from rural areas.

Fig. 2 indicates that most of the respondents *i.e.*, 70 % (n=700) were males and 30 % (n=300) were females indicating that a significant number of women suffered from this disease.

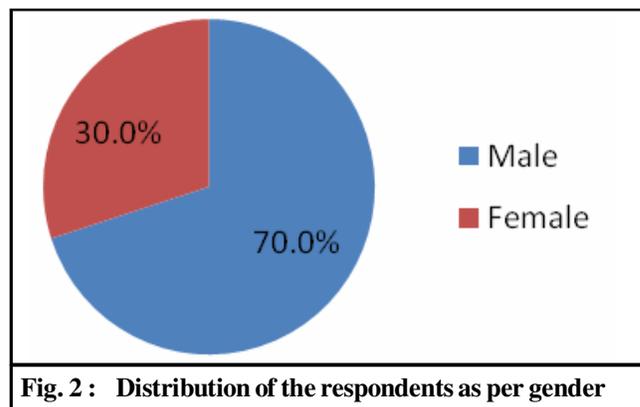


Fig. 2 : Distribution of the respondents as per gender

Fig. 3. revealed that most of the respondents *i.e.*, 34.9% (n=349) belonged to the age group of 50-59 yrs, followed by 30.2 % (n=302) in the age group of 40-49 yrs and an alarming number of 6.6% (n=66) belong to 30-39 yr age group, indicating that the disease is percolating down the younger age groups.

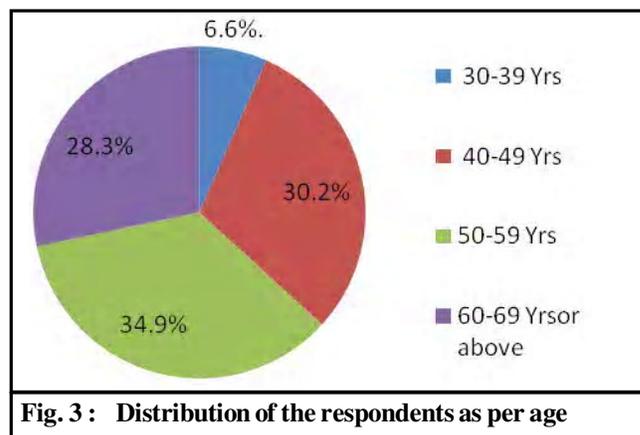


Fig. 3 : Distribution of the respondents as per age

Table 1 A higher number of respondents *i.e.*, 82.7% (n= 827) indicated that they did not did performed any kind of physical activity .Males 23.7 % (n=166) in comparison to females are active. Statistically, significant differences are marked between male gender and physical activity in terms of; rarely or never do any physical activity ($\chi^2= 17.7$; $df=1$; $p= 0.00$); and perform activities to improve flexibility, once a week or more ($\chi^2 = 8.26$; $df= 1$; $p=0.004$).

Table 1 : Physical activity level of the respondents as per gender

Physical activity	Gender					
	Male		Female		Total	
	N	%age	N	%age	N	%age
Rarely or never doing any physical activity ($\chi^2= 17.7$; $df=1$ $p= 0.00$)						
Yes	98	14.0	75	25.0	173	17.3
No	602	86.0	225	75.0	827	82.7
Total	700	100.0	300	100.0	1000	100.0
Performing Some Light or moderate physical activity ,but not every week ($\chi^2=0.59$ 5; $df=1$ $p= 0.441$)						
Yes	166	23.7	78	26.0	244	24.4
No	534	76.3	222	74.0	756	75.6
Total	700	100.0	300	100.0	1000	100.0
Performing some light physical activity every week ($\chi^2= 0.086$; $df=1$ $p= 0.769$)						
Yes	162	23.1	72	24.0	234	23.4
No	538	76.9	228	76.0	766	76.6
Total	700	100.0	300	100.0	1000	100.0
Performing moderate physical activities every week, but less than 30 minutes a day,5 days a week ($\chi^2= 0.919$;$df=1$; $p = 0.891$)						
Yes	142	20.3	62	20.7	204	20.4
No	558	79.7	238	79.3	796	79.6
Total	700	100.0	300	100.0	1000	100.0
Performing vigorous physical activities every week, but less than 20 minutes a day, 3 days a week ($\chi^2 = 13.83$; $df=1$; $p = .000$)						
Yes	54	7.7	5	1.7	59	5.9
No	646	92.3	295	98.3	941	94.1
Total	700	100.0	300	100.0	1000	100.0
Performing 30 minutes or more per day of moderate physical activities, 5 or more days a week ($\chi^2 =0.539$; $df=1$; $p= 0.463$)						
Yes	25	3.6	8	2.7	33	3.3
No	675	96.4	292	97.3	967	96.7
Total	700	100.0	300	100.0	1000	100.0
Performing 20 minutes or more per day of vigorous physical activities, 3 or more days a week ($\chi^2 = 8.26$; $df=1$; $p=0.004$)						
Yes	48	6.9	7	2.3	55	5.5
No	652	93.1	293	97.7	945	94.5
Total	700	100.0	300	100.0	1000	100.0
Performing activities to increase muscle strength, such as lifting weights, once a week or more ($\chi^2=2.85$; $df=1$; $p= 0.091$)						
Yes	29	4.1	6	2.0	35	3.5
No	671	95.9	294	98.0	965	96.5
Total	700	100.0	300	100.0	1000	100.0
Performing activities to improve flexibility, such as stretching or yoga, once a week or more ($\chi^2=6.506$; $df=1$; $p=0.011$)						
Yes	20	2.9	1	0.3	21	2.1
No	680	97.1	299	99.7	979	97.9
Total	700	100.0	300	100.0	1000	100.0

Table 2 indicates that a higher number of rural respondents *i.e.*, 28.3 % (n=114) performed some light physical activity every week and around 24.3 % (n=98) performed moderate physical activities every week ,but < 30 minutes / day, for five days a week, which is far greater than urban respondents, however, urban respondents *i.e.*, 5.2% (n=31) showed a higher participation in activities like 30 minutes or more per day

of moderate physical activities, for 5 or more days and about 8.7 % (n=52) urban respondents performed 20 minutes or more per day of vigorous physical activities, 3 days or more a week. A highly significant difference was observed between the dwelling and physical activity with respect to, 30 minutes or more per day of moderate physical activities, for 5 or more days ($\chi^2 = 16.62$; $df=1$; $p=0.00$), doing 20 minutes or more per day of vigorous

Table 2 : Physical activity level of the respondents as per dwelling

Physical activity	Dwelling					
	Rural		Urban		Total	
	N	%age	N	%age	N	%age
Rarely or never doing any physical activities ($\chi^2 = 0.532$;df= 1; p= 0.466)						
Yes	74	18.4	99	16.6	173	17.3
No	329	81.6	498	83.4	827	82.7
Total	403	100.0	597	100.0	1000	100.0
Performing Some light or moderate physical activities, but not every week ($\chi^2 = 0.040$;df=1; p= 0.842)						
Yes	97	24.1	147	24.6	244	24.4
No	306	75.9	450	75.4	756	75.6
Total	403	100.0	597	100.0	1000	100.0
Performing some light physical activity every week ($\chi^2 = 8.977$;df=1; p=0.003)						
Yes	114	28.3	120	20.1	234	23.4
No	289	71.7	477	79.9	766	76.6
Total	403	100.0	597	100.0	1000	100.0
Performing moderate physical activities every week, but less than 30 minutes a day, 5 days a week ($\chi^2 = 6.38$;df=1; p= 0.012)						
Yes	98	24.3	106	17.8	204	20.4
No	305	75.7	491	82.2	796	79.6
Total	403	100.0	597	100.0	1000	100.0
Performing vigorous physical activities every week, but less than 20 minutes a day, 3 days a week ($\chi^2 = 1.70$; df=1; p= 0.191)						
Yes	19	4.7	40	6.7	59	5.9
No	384	95.3	557	93.3	941	94.1
Total	403	100.0	597	100.0	1000	100.0
Performing 30 minutes or more per day of moderate physical activities, 5 or more days ($\chi^2 = 16.62$;df=1; p=0.00)						
Yes	2	0.5	31	5.2	33	3.3
No	401	99.5	566	94.8	967	96.7
Total	403	100.0	597	100.0	1000	100.0
Performing do 20 minutes or more per day of vigorous physical activities, 3 or more days a week ($\chi^2 = 29.37$; df=1; p= 0.00)						
Yes	3	0.7	52	8.7	55	5.5
No	400	99.3	545	91.3	945	94.5
Total	403	100.0	597	100.0	1000	100.0
Performing activities to increase muscle strength, such as lifting weights, once a week or more ($\chi^2 = 14.60$;df=1; p=0.00)						
Yes	25	6.2	10	1.7	35	3.5
No	378	93.8	587	98.3	965	96.5
Total	403	100.0	597	100.0	1000	100.0
Performing activities to improve flexibility, such as stretching or yoga, once a week or more ($\chi^2 = 11.48$; df=1;p= 0.001)						
Yes	16	4.0	5	0.8	21	2.1
No	387	96.0	592	99.2	979	97.9
Total	403	100.0	597	100.0	1000	100.0

physical activities, 3 or more days a week ($\chi^2 = 29.37$; df=1; p=0.000), doing activities to increase muscle strength, such as lifting weights, once a week or more ($\chi^2 = 14.60$; df=1; p=0.00), some light physical activity every week ($\chi^2 = 8.977$; df=1; p=0.003), moderate physical activities every week, but less than 30 minutes a day, 5 days a week ($\chi^2 = 6.38$; df=1; p= 0.012).

Table 3 reveals that most of the respondents

belonging to the youngest age group of 30-39yrs performed moderate physical activities every week, but less than 30 minutes a day, for 5 days a week, 25.8 % (n=17) and similar number of respondents 25.8 % (n=17) performed various activities to increase muscular strength once a week or more and about 24.2 % (n=16) performed activities to enhance flexibility, once a week or more. About 23.5 % (n=71) and 21.2 % (n=64) belonging to

the age group of 40-49 yrs did some light physical activity every week and performed some light or moderate physical activities, but not every week respectively. Statistically significant differences were observed between age and; rarely or never doing any physical activity ($\chi^2= 34.96$; $df=3$; $p=0.00$) ,doing some light physical activity every week, ($\chi^2=11.63$; $df=3$; $p= 0.009$), doing moderate physical activities every week, but less

than 30 minutes a day, 5 days a week ($\chi^2 = 35.35$; $df=3$; $p=0.00$), vigorous physical activities every week, but less than 20 minutes a day, 3 days a week ($\chi^2=19.67$; $df=3$; $p=0.00$), 30 minutes or more per day of moderate physical activities, 5 or more days a week ($\chi^2 =37.70$; $df=3$; $p =0.00$), doing activities to increase muscle strength, such as lifting weights, once a week or more ($\chi^2=106.2$; $df=3$; $p= 0.00$), doing activities to increase flexibility, such as

Table 3 : Physical Activity level of the respondents as per age

Physical activity	Age									
	30-39yrs		40-49yrs		50-59yrs		60-69yrs or above		Total	
	N	%age	N	%age	N	%age	N	%age	N	%age
Rarely or never do any physical activities ($\chi^2= 34.96$;$df = 3$; $p=0.00$)										
Yes	3	4.5	31	10.3	64	18.3	75	26.5	173	17.3
No	63	95.5	271	89.7	285	81.7	208	73.5	827	82.7
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing some light or moderate physical activities, but not every week ($\chi^2 = 6.795$;$df = 3$; $p= 0.79$)										
Yes	12	18.2	64	21.2	85	24.4	83	29.3	244	24.4
No	54	81.8	238	78.8	264	75.6	200	70.7	756	75.6
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing some light physical activity every week. ($\chi^2=11.63$;$df=3$;$p= 0.009$)										
Yes	6	9.1	71	23.5	77	22.1	80	28.3	234	23.4
No	60	90.9	231	76.5	272	77.9	203	71.7	766	76.6
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing moderate physical activities every week, but less than 30 minutes a day, 5 days a week ($\chi^2=35.35$;$df=3$; $p=0.00$)										
Yes	17	25.8	94	31.1	49	14.0	44	15.5	204	20.4
No	49	74.2	208	68.9	300	86.0	239	84.5	796	79.6
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing vigorous physical activities every week, but less than 20 minutes a day, 3 days a week ($\chi^2=19.67$;$df=3$; $p=0.00$)										
Yes	4	6.1	24	7.9	29	8.3	2	0.7	59	5.9
No	62	93.9	278	92.1	320	91.7	281	99.3	941	94.1
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing 30 minutes or more per day of moderate physical activities, 5 or more days a week ($\chi^2=37.70$;$df=3$; $p=3.08$)										
Yes	10	15.2	8	2.6	14	4.0	1	0.4	33	3.3
No	56	84.8	294	97.4	335	96.0	282	99.6	967	96.7
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing 20 minutes or more per day of vigorous physical activities, 3 or more days a week($\chi^2 =37.70$;$df=3$; $p=0.00$)										
Yes	1	1.5	8	2.6	38	10.9	8	2.8	55	5.5
No	65	98.5	294	97.4	311	89.1	275	97.2	945	94.5
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing activities to increase muscle strength, such as lifting weights, once a week or more ($\chi^2 =106.2$;$df=3$; $p= 0.00$)										
Yes	17	25.8	10	3.3	5	1.4	3	1.1	35	3.5
No	49	74.2	292	96.7	344	98.6	280	98.9	965	96.5
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0
Performing activities to improve flexibility, such as stretching or yoga, once a week or more ($\chi^2 =171.2$;$df=3$; $p=0.00$)										
Yes	16	24.2	5	1.7	0	0.0	0	0.0	21	2.1
No	50	75.8	297	98.3	349	100.0	283	100.0	979	97.9
Total	66	100.0	302	100.0	349	100.0	283	100.0	1000	100.0

stretching or yoga, once a week or more ($x^2=171.2$; $df=3$; $p=0.00$).

Table 4 highlights that males had better understanding of lifestyle practices leading to the disease which is evident from the results, a higher number of males 59.1 % (n=371) attempted at cutting down the calories, 40.6% (n=255) believed that family feuds can accelerate the disease .About 63.5 % (n=399) men believed that lifestyle modification can help in the management of the disease and 59.2 % (n=372), tried to lose weight and another 81.7 % (n=513) believed that improper lifestyle can accelerate the disease. However, Insignificant difference is observed between gender and lifestyle ($x^2 =9.34$; $df =5$; $p=0.096$).

Table 5 depicts that a higher number of urban

respondents *i.e.*, 66.3 % (n=337) had attempted at cutting down the calories and tried to lose weight, whereas, a majority of rural respondents 93.9 % (n=372) believed that lifestyle is responsible for many diseases and can be corrected to help in the management of the heart diseases, however, a less number of respondents 47.5 % (n=188) attempted at cutting down calories and losing weight 49.2 % (n=195). A highly significant difference was observed between the dwelling and lifestyle ($x^2 = 420.36$; $df= 5$; $p=0.00$).

Table 6 indicates that most of the patients 83.2 % (n=752) across all the age groups admitted that lifestyle changes are responsible for the diseases and about 61.9 % (n=560) affirmed that lifestyle modification can help in the management of the diseases. Furthermore, the

Table 4 : Perception of the respondents about lifestyle as per gender (Multiple Choices)

Perception of lifestyle	Gender					
	Male		Female		Total	
	N	%age	N	%age	N	%age
Attempted at cutting down calories	371	59.1	154	55.8	525	58.1
Family feuds accelerate the disease	255	40.6	105	38.0	360	39.8
Lifestyle modification can help in the management of the disease	399	63.5	161	58.3	560	61.9
Tried to lose weight	372	59.2	148	53.6	520	57.5
Lifestyle can accelerate the disease	513	81.7	239	86.6	752	83.2

($x^2 = 9.34$; $df=5$; $p = 0.096$)

Table 5 : Perception of the respondents about lifestyle as per dwelling (multiple choices)

Perception of lifestyle	Dwelling					
	Rural		Urban		Total	
	N	%age	N	%age	N	%age
Attempted at cutting down calories	188	47.5	337	66.3	525	58.1
Family feuds accelerate the disease	172	43.4	188	37.0	360	39.8
Lifestyle modification can help in the management of diseases	372	93.9	188	37.0	560	61.9
Tried to lose weight	195	49.2	325	64.0	520	57.5
Improper lifestyle can accelerate the disease	372	93.9	380	74.8	752	83.2

($x^2 =420.36$; $df=5$; $p = 0.00$)

Table 6 : Perception of the respondents about lifestyle as per age (Multiple Choices)

Perception of lifestyle	Age									
	30-39yrs		40-49yrs		50-59yrs		60-69yrs or above		Total	
	N	%age	N	%age	N	%age	N	%age	N	%age
Attempted at cutting down calories	54	83.1	223	75.6	160	54.4	88	35.2	525	58.1
Family feuds can accelerate the disease	25	38.5	135	45.8	110	37.4	90	36.0	360	39.8
Lifestyle modifications can help in the management of disease	45	69.2	180	61.0	179	60.9	156	62.4	560	61.9
Tried to lose weight ever	58	89.2	204	69.2	165	56.1	93	37.2	520	57.5
Improper lifestyle can accelerate the disease	59	90.8	244	82.7	239	81.3	210	84.0	752	83.2

($x^2 = 206.73$; $df=15$; $p = 0.00$)

table displays that the respondents belonging to the age group of 30-39 years were more careful about the lifestyle which can be ascertained from their attempts of cutting down calories 83.1 % (n=54) losing weight 89.2 % (n=58), believing that lifestyle changes are responsible for many diseases 90.8 % (n=59) and lifestyle modification can help in the management of this disease 69.2 % (n=45). The %age of respondents being careful about these lifestyle practices was seen diminishing with the increasing age. A highly significant difference was observed between the variables ($\chi^2 = 206.73$; $df = 15$; $p = 0.00$).

Discussion:

The socio demographic profile of the subjects revealed that a higher number of the respondents *i.e.*, 60% belonged to the urban area and only 44 % belonged to rural area, strengthening the fact that urban dwellers have predominance over rural people and the results of this study are in line with the findings of Gupta *et al.* (2016) who reported that there is an Increasing CHD prevalence over the last 60 years, from 1% to 9% -10% in urban populations and <1% to 4%-6% in rural populations. The current study revealed that the disease was more common in men *i.e.*, 70%; however 30% respondents were women, which was otherwise considered as disease of men, these results are in concurrence with the results of Mandal *et al.* (2009), Kamilli *et al.* (2007). Kumar *et al.* (2016), Singh *et al.* (1997) and Gupta *et al.* (1995) and Hassan *et al.* (2014) reported the higher prevalence of CAD among men than women in Kashmir. Most of the respondents *i.e.*, 34.9% belonged to the age group of 50-59yrs, followed by 30.2 % in the age group of 40-49 yrs and an alarming number of 6.6% were in the age group of 30-39 yr, indicating that the disease is percolating down the younger age groups.

Lack of physical activity was found to be one of the important factor for developing CAD, most of the respondents revealed that they did not performed any kind of physical activity, and, only 24 % reported to do some light or moderate physical activity, but not every week and another 23 % reported some light physical activity every week. Males comparatively were physically active than females. Rastogi *et al.* (2004), in his study analysed, a positive association between non-work sedentary activity and CHD risk and recommended that physical activity should be promoted. World health statistics (2015) has reported that the physical inactivity

is a major CVD risk factor in India. Rural respondents were better at physical activities than their urban counterparts which can be assessed by the following figures, about 28% rural respondents performed some light physical activity every week and another 24 % performed moderate physical activities every week, but less than 30 minutes a day, for five days a week, which is far greater than urban people. These results can be corroborated with the findings of Ruth *et al.* (2012), who in his study concluded that people living in rural area had much higher levels of physical activity and lower risk of being overweight and obese as compared to those living in an urban area. These findings are contrary to the findings of Krishnan *et al.* (2016) reporting that there was no difference in physical activity between rural and urban areas of Kerala. Gupta *et al.* (2008), reported that low physical activity level was widespread in 20-39 urban adults, the current study too shows some homologous results that, though a miniscule of respondents belonging to the various age groups particularly age group 30-39yrs perform moderate physical activities every week, but less than 30 minutes a day, for 5 days a week, 25.8 % and similar number of respondents 25.8% performed various activities to increase muscular strength, 24.2 % performed activities to improve flexibility. Females were less active than males, these findings are in line with the results of Heyderi *et al.* (2015), reporting that inappropriate physical activity was found to be significantly associated with the female gender and younger ages 30-40 years of age. ICMR-INDIAB study by Anjana *et al.* (2014) who reported that one of every two individuals in her study, were physically inactive, and <10% of the respondents engaged in any recreational physical activity, and physical was higher in urban areas and for women.

Furthermore, the present study revealed that 82 % of the respondents believed that lifestyle can accelerate the coronary heart disease, 62 % believed that lifestyle modification can help in the management of the disease and about 58 % attempted at cutting down the calories .A fair percentage of respondents 50 % even tried to lose weight. About 40 % believed that family feuds can accelerate the disease; similar results were reported by Menotti (1997), who in his study conducted in Italy revealed that all the participants recognised stress as the major cause of heart disease. Urban male respondents had better understanding of various lifestyle factors leading to the disease, which can be assessed by: 60% attempted at cutting down the calories, 41% believed that

family feuds can accelerate the disease, similar results were obtained by Khayyam-Nekoue *et al.* (2012), about 64% reported that lifestyle modification can help in the management of the disease, 59% tried to lose weight, 82% believed that lifestyle can accelerate the disease. The respondents belonging to the age group of 30-39 years were more careful about the lifestyle which can be ascertained from their attempts, about 83 % attempted at cutting down calories, 90 % tried to lose weight, 99% believed that lifestyle changes are responsible for many diseases and 69% believed that lifestyle modification can help in the management of this disease ,these results are in line with the findings of Potvin *et al.* (2000), who reported that higher number of young people recognised the lifestyle changes are responsible for CAD and its management can help in the prevention of the disease and attempted at cutting down the calories ,most of the heart patients considered diet as an important factor for treatment

Conclusion:

It can be concluded that Coronary artery disease is common among urban dwellers than their rural counterparts and was mostly seen among males than females, whereas, the disease is seeping into the rural and less affluent classes equally. Needless to say it is caused by the improper lifestyle, increased purchasing power and nutrition transition in the rural areas. The most disturbing revelation of the study is that significant number respondents of 8.6 % rural and 10.1% urban males suffering from the disease belonged to the young age group of 30-39 yrs. Additionally, the activity patterns are very poor among the respondents. Males are comparatively active than females and had better understanding of lifestyle factors leading to disease. Respondents mostly believed that better lifestyle can accelerate the coronary heart disease and modified lifestyle can help in the management of the disease. Therefore, with proper nutrition and health education, counselling on improving lifestyle practices, the disease can be prevented to a greater extent and can be managed effectively.

REFERENCES

Alkhawam, H., Nguyen, J., Sayanlar, J., Sogomonian, R., Desai, R., Jolly, J.P., Vyas, N., Syed, U., Homsy, M. and Rubinstein, D. (2016). Coronary artery disease in patients

with body mass index 30 kg/m² : a retrospective chart analysis. *J. Community Hospital Internal Medicine Perspectives*, **6**: 31483, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4942517/pdf/JCHIMP-6-31483>.

Anjana, R.M., Pradeepa, R., Das, A.K., Deepa, M., Bhansali, A. and Joshi, S.R. (2014). ICMR-INDIAB Collaborative study group .physical activity and inactivity patterns in India – results from the ICMR –INDIAB study (Phase I) (ICMR-INDIAB5). *Internat. J. Behavioural Nutrition & Physical Activity*, **4**:11-26, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/24571915>.

Bittencourt, Márcio Sommer (2018). Family History of Cardiovascular Disease: How Detailed Should It Be? *Mayo Clinic Proceedings*, **93**: 9 : 1167 – 1168, retrieved from [https://www.mayoclinicproceedings.org/article/S0025-6196\(18\)30576-7/abstract](https://www.mayoclinicproceedings.org/article/S0025-6196(18)30576-7/abstract).

Chauhan, S. and Aeri, B.T. (2013). Prevalence of cardiovascular disease in India and its economic impact: A review. *Internat. J. Scientific & Research Publications*, **3**(10): 2250-3153, retrieved from <http://www.ijsrp.org/research-paper-1013/ijsrp-p2234.pdf>.

Dallongeville, J., De Bacquer, D., Heidrich, J., De Backer, G., Prugger, C., Kotseva, K., Montaye, M., Amouyel, P.: EUROASPIRE Study Group (2010). Gender differences in the implementation of cardiovascular prevention measures after an acute coronary event. *Heart*, **96**:1744-9. 10.1136, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/20956490>.

De Smedt, D., Clays, E., Annemans, L., Doyle, F., Kotseva, K., Pajk, A., Prugger, C., Jennings, C., Wood, D., De Bacquer, D. (2012). Health related quality of life in coronary patients and its association with their cardiovascular risk profile: results from the EUROASPIRE III survey. *Internat. J. Cardiology*, **168**(2):898-903, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23201081>

Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*, **385**:117–171, retrieved from [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)61682-2/full text](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)61682-2/full text).

Gupta, R., Prakash, H., Majumdar, S. *et al.*, (1995). Prevalence of Coronary Heart Disease and coronary risk factors in an urban population of Rajasthan. *Indian Heart J.*, **47**: 331-338, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/8557274>.

Gupta, R., Gupta, V.P. and Bhagat, N. (2008). A Tertiary care hospital-based study of conventional risk factors

- including lipid profile in proven coronary artery disease. *Indian Heart J.*, **60**:26-33, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2541843/>.
- Hajar, R. (2017). Diabetes as “Coronary Artery Disease Risk Equivalent”: A Historical Perspective, *Heart Views*, **18** (1): 34–37, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5448252/>
- Hassan, Alkhawam, James, Nguyen, Jason Sayanlar, Robert Sogomonian, Ronak Desai, Josh Paul, Jolly, Neil, Vyas, Umer, Syed, Maher, Homsy and David, Rubinstein (2016). Coronary artery disease in patients with body mass index =30 kg/m²: a retrospective chart analysis. *J. Community Hospital Internal Medicine Perspective*, (6) 3: 10.3402/jchimp.v6.31483.,retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4942517/>.
- Heydari, G, Hosseini, M., Yousefifard, M. and Asady, H. (2015). Smoking and Physical Activity in Healthy Adults: A Cross-sectional Study in Tehran. *Tanaffos*, **14**(4): 238-245, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4841990/>
- Kamili, M., Dar, I., Ali, G and Wazir, H. (2007). Prevalence of coronary artery disease in Kashmiris. *Indian Heart J.*, **59**(1) : 44-9, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/19098334>.
- Keto, J., Ventola, H., Jokelainen, J., Linden, K., Sirkka, Kiukaanniemi, K. Timonen, M. and Ylisaukko-oja, (2016). Cardiovascular disease risk factors in relation to smoking behaviour and history: a population-based cohort study. *Open Heart*, **3**: e 000358, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27493759>.
- Khayyam-Nekouei, Z., Neshatdoost, H., Yousefy, A., Sadeghi M. and Manshaee, G. (2013). Psychological factors and coronary heart disease. *Iranian Society of Atherosclerosis*, **9**(1):102-11, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23690809>
- Krishnan, M.N., Zachariah, G., Venogopal, K., Mohann, P.P., Hari Krishnan, S., Sanjay, L., Jeyaseelan and Thankappan, K.R. (2016). Prevalence of coronary artery disease and its risk factors in Kerala, South India: A community based cross sectional study. *BMC cardiovascular disorders*, **16**:12, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4712491>.
- Kumar, R. and Sharan, K.H. (2016). A comparative study on awareness of cardiovascular risk determinants among rural and urban women population of Davangere district, Karnataka, India. *Internat. J. Community Medicine & Public Health*, **3**(12):3336-3339, retrieved from <http://www.ijcmph.com>.
- Mandal, S. and Saha, J.B. (2009). Prevalence of ischemic heart disease among urban population of Siliguri, West Bengal. *Indian J. Community Medicine*, **34**(1): 19-23, retrieved from <http://www.ijcm.org.in/article.asp?issn=0970-0218;year=2009;volume=34;issue=1;spage=19;epage=23;aulast=Mandal>.
- Menotti, A. (1997). Knowledge attitude and practices regarding coronary cardiopathy. The Italian section of the HELP (Heart European Leaders Panel) study. *Giornale italiano di Cardioogial*, **27** (11):1125-32., retrieved from <https://europepmc.org/abstract/med/26444210>.
- Milane, A., Abdallah, J., Kanbar, R., Khazen, G., Ghassibe-Sabbagh, M., Salloum, A. K., Youhanna, S., Saad, A., El Bayeh, H., Chammas, E., Platt, D. E., Hager, J., Gauquier, D., Zalloua, P., Abchee, A., FGENTCARD Consortium. (2014). Association of hypertension with coronary artery disease onset in the Lebanese population. *SpringerPlus*, **3**:533, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4176843/>.
- Piepoli, M.F., Hoes, A.W., Agewall ,S., Albus, C., Brotons, C., Catapano, A.L., —, Smulders, Y., Tiberi, M., van der Worp, H.B., van Dis, I., Verschuren, W.M.M., Binno, S., ESC Scientific Document Group (2016). European Guidelines on cardiovascular disease prevention in clinical practice: The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts) Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR). *European Heart J.*, **37**: 2315–2381, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/27222591>.
- Potvin, L., Richard, L. and Edwards, A.C. (2000). Knowledge of cardiovascular disease risk factors among the Canadian population: Relationships with indicators of socioeconomic status. *Canadian Medical Association Journal*, **162** (9 Suppl):S5-11, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/10813022>.
- Prabhakaran, D., Jeemon, P. and Roy, Ambuj (2016). Cardiovascular disease in India: Current epidemiology and future directions, *Circulation*, **133**:1605-1620, retrieved from American heart association, retrieved from <http://ahajournals.org/content/133/16/1605>.
- Rastogi, T., Reddy, K.S., Vaz, M., Spiegelman, D., Prabhakaran, D., Willett, W.C., Stampfer, M.J. and Ascherio, A. (2004). Diet and risk of ischemic heart disease in India. *American J. Clinical Nutrition*, **79**:582–92, retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/15051601>.
- Registrar General of India (2013). Report on Medical Certification of cause of death. New Delhi, India: office

- of the Registrar General, retrieved from www.censusindia.gov.in/2011-document/med_2013.pdf.
- Ruth, M., Creber, M., Smeeth, L., Robert, H. and Gilman Miranda, J.J. (2010). Physical activity and cardiovascular risk factors among rural and urban groups and rural-to-urban migrants in Peru: a cross sectional study. *Pan American journal of public health*, 28(1): 1–8, retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2957283/>.
- Singh, R.B., Sharma, J.P., Rastogi, V. *et al.* (1997). Social class and coronary disease in a rural population of north India, *European Heart J.*, **18** : 588-595. retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.594.3971&rep=rep1&type=pdf>.
- Sinha, U. and Bhardwaj, S.D. (2016). Prevalence of Coronary Artery Disease and Its Association with Various Risk Factors in Rural Area of Nagpur. *National J. Community Medicine*, **7**(8):703-707, retrieved from http://njcmindia.org/uploads/7-8_703-707.pdf.
- Vitale, C., Fini, M., Speziale, G and Chierchia, S. (2010). Gender differences in the cardiovascular effects of sex hormones. *Fundamentals of Clinical Pharmacology*, **24**:675-85, retrieved from 1472-8206. <https://www.ncbi.nlm.nih.gov/pubmed/20199585>.
- World Health Statistics (2015). retrieved from https://www.who.int/gho/publications/world_health_statistics/2015/en/.
