

AWARENESS REGARDING CARDIOVASCULAR HEALTH AMONG OLDER  
POPULATION RESIDING IN BHARATPUR, NEPALShrestha R.\*<sup>1</sup>, Shrestha K.<sup>2</sup>, Singh J. P.<sup>3</sup> and Shrestha S.<sup>4</sup><sup>1,3,4</sup>Chitwan Medical College, Bharatpur.<sup>2</sup>Everest Hospital, Kathmandu.

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## ABSTRACT

Introduction/ Objective: Heart disease is the most frequent condition in older adults and the number one cause of death. People age 60 and older are much more likely than younger people to suffer a heart attack, to have a stroke, or to develop heart disease. Cardiovascular disease is also a major cause of disability, limiting the activity and eroding the quality of life of millions of older people. Hence, this study was conducted to identify the awareness regarding cardiovascular health among older population residing in Bharatpur Municipality, Chitwan. Methods: A descriptive, cross-sectional research design was used among 90 older people residing in Bharatpur-11 Municipality. Non-probability, consecutive sampling technique was used. Semi structured questionnaire was used to collect data by conducting semi-structured interview schedule. Data was analyzed in descriptive and inferential statistics (chi-square test with odd ratio). Results: Of the 90 participants, healthy people or normal BMI was found 67.8% and presence of chronic disease was found 75.6%. Among them, 66.1% were hypertensive, 55.8% were diabetes, 32.3% were hypothyroidism and 16.1% were stroke patients. The level of awareness regarding CVH was found aware (55.6%). On the basis of statistical analysis, ethnicity ( $p < 0.001$ ), religion ( $p < 0.0001$ ), and type of family ( $p = 0.002$ ) were significant associated factors with level of awareness regarding CVH among older aged people. Conclusion: It is concluded that nearly half of the respondents were unaware about CVH. Significant associated factors of awareness on CVH were ethnicity, religion, and type of family. Cost-effective community based awareness programs taking into account socio- demographic factors may be beneficial in this setting.

**KEYWORDS:** Awareness, Cardiovascular Health, Older Population.

## INTRODUCTION

Aging, in and of itself, increases the risk of chronic disease, especially cardiovascular disorders. Despite increasing with age, a large part of cardiovascular diseases (CVDs) could be prevented.<sup>[1]</sup> Adequate awareness of cardiovascular health may help reduce the population's exposure to modifiable risk factors and thereby contribute to prevention and control strategies.<sup>[2]</sup> Advances in medical technology have led to increases in the life expectancy as well as increases in the number of older people, which makes population ageing an international priority in the 21st century.<sup>[3]</sup>

Cardiovascular disease (CVDs) is the primary cause of disability and premature death throughout the world.<sup>[4]</sup> Changes that happen with age may increase a person's risk of heart disease. A major cause of heart disease is the buildup of fatty deposits in the walls of arteries over many years. The good news is there are things you can do to delay, lower, or possibly avoid or reverse your risk.

Cardiovascular diseases are major contributors to global non communicable disease burden. In 2012, the World health organization estimated that over 17 million people Awareness of CVDs and their risk factors can be a precondition for success in prevention and control of it.<sup>[5]</sup>

There is evidence of a strong link between cardiovascular disease and frailty (is a generic syndrome characterized by increased vulnerability to even minor stressors, which leads to higher risk of hospitalization, disability, institutionalization, and death) in older population. Therefore, effective CVD prevention should adopt a life-course approach by avoiding the development of cardiovascular risk factors in the first place (Primordial prevention).<sup>[6]</sup>

In 2002, Population growth rate and elderly was 5.9% of total population. Similarly, in Afghanistan (4.7%), Bangladesh (4.9%), Bhutan (6.5%), India (7.6%), Maldives (5.3%), Pakistan (5.8) and Sri Lanka (9.3).<sup>[7,8]</sup>

In USA, among older people an estimated 85.6 million have 1 or more types of CVD and total cost for CVD in 2011-2012 were \$116.9 billion as well as 51% of cardiovascular procedures were performed for older people ( $\geq 65$  years aged group). About two-thirds of CVD deaths occur in people age 75 and older.<sup>[9]</sup>

Hence, we sought in this study to estimate current levels of awareness regarding cardiovascular health among older population residing in Bharatpur, Chitwan, Nepal.

#### MATERIALS AND METHODS

This was community-based cross-sectional study conducted among ninety older people (more than 60

years) residing in Bharatpur, Nepal during month of March, 2019. Non-probability, consecutive sampling technique was used to enrolled sample for this study. Prior to data collection, informed consent was taken from each respondent and semi structured interview schedule along with anthropometric measurement of the respondents was taken. Research instrument was developed based on extensive literature reviewed which consisted three parts like socio-demographic, cardiovascular health based on general health survey and WHO CVD fact sheet. Data was analyzed using SPSS version 16.0 using descriptive and inferential statistic.

**Table 1: Age, Gender, Marital Status, Ethnicity, Religion, and Educational Status of the Respondents n=90.**

Variables	Number	Percentage
<b>Age Group (in completed years)</b>		
60-74	54	60.0
75-84	30	33.3
$\geq 85$	6	6.7
<b>Gender</b>		
Male	30	33.3
Female	60	66.7
<b>Marital Status</b>		
Married	57	63.3
Unmarried	9	10.0
Widowed/ Widower	20	22.3
Separated/ Divorced	4	4.4
<b>Ethnicity</b>		
Brahmin	43	47.8
Chhetri	32	35.6
Janajati	15	16.6
<b>Religion</b>		
Hindu	67	74.4
Non-Hindu	23	25.6
<b>Educational Status</b>		
higher than secondary level	15	16.7
secondary level	37	41.1
primary/elementary level	17	18.9
no schooling	21	23.3

**Table 2: Health Insurance, Type of Family, Living Arrangement, and Income Status of the Respondents n=90.**

Variables	Number	Percentage
<b>Health Insurance</b>		
Yes	14	15.6
No	76	84.4
<b>Type of Family</b>		
Nuclear	24	26.7
Joint	66	73.3
<b>Living Arrangement</b>		
living with Family	80	88.9
living singly	10	11.1
<b>Income Status (NPR/years)</b>		
100000-300000		26.7
300001-600000	16	17.8
600001-900000	19	21.1
>900000	31	34.4

**Table 3: BMI and Comorbidities Status of the Respondents n=90.**

Variables	Number	Percentage
<b>BMI</b>		
Under weight (<18.5kg/m <sup>2</sup> )	7	7.8
Healthy (BMI 18.5 - ≤ 24.9 kg/m <sup>2</sup> )	61	67.8
Overweight (BMI 25.0 - 29.9 kg/m <sup>2</sup> )	19	21.1
Obesity (BMI ≥ 30 kg/m <sup>2</sup> )	3	3.3
<b>Presence of Chronic Illness</b>		
Yes	68	75.6
No	22	24.4
<b>Comorbidities Status (n=68)</b>		
Hypertension	45	66.17
Diabetes	38	55.88
Hypothyroidism	22	32.35
Stroke	11	16.17

**Table 4: CVS Disease Risk Factors and Their Health Care Behaviour n=90.**

S. N.	Statements	No.	%
1.	Cardiovascular disease is the most common cause of death in Nepal	74	82.2
2	The older a person is, the greater their risk of having heart disease	78	86.7
3	Smoking is a risk factor for heart disease	86	95.6
4	Hypertension is a risk factor for heart disease	52	57.8
5	High cholesterol is a risk factor for heart disease	56	62.2
6	If your HDL is high you are at risk factor for heart disease	70	77.8
7	If your LDL is high you are at risk factor for heart disease	47	80.0
8	If you have a family history of heart disease, you are at risk for developing heart disease	72	80.0
9	Obesity increases a person's chance of getting heart disease	66	73.3
10	Diabetes is a risk factor for developing heart disease	53	58.9
11	Exercise lowers a person's chance of getting heart disease	56	62.2
12	Men have a greater risk of heart disease than women	58	64.4
13	You've started any intervention for weight increased problem in the last 12 months?	13	14.4
14	Have you ever had your cholesterol checked?	50	55.6
15	Have you ever smoked?	36	40.0
16	Do you drink beverages containing alcohol?	41	45.6
17	Do you participate in any physical activities such as running, swimming, gardening or walking etc for exercise	42	46.7

**Table 5: Respondents' Level of Awareness regarding CVH among Older People.**

Level of Awareness	Frequency	Percentage
Aware (≥11 median)	50	55.6
Unaware (<11 median)	40	44.4
Total	90	100.0

\*CVH: Cardiovascular Health; Median value of overall awareness score=11 (IQR=9-12)

## RESULTS

### *Socio-demographic Characteristics of Respondents* (table 1 & 2)

In regards to socio-demographic characteristics, out of 90 respondents, majority of the respondents were belongs to 60-74 years (60.0%), female (66.7%), married (63.3%) Brahmin (47.8%), Hinduism (74.4%), education secondary level (41.1%), not having health insurance facility (84.4%), joint family (73.3%), living arrangement with family (88.9%) and annual income more than nine lakh (34.4%).

### *BMI and Comorbidities Status of the Respondents* (table 3)

Majority of the respondents belongs to healthy BMI (67.8%) and presence of chronic illness (75.6%) and

among them, hypertension (66.17%), diabetes (55.88%), hypothyroidism (32.35%) and stroke (16.17%).

### *CVS disease risk factors and health care behaviour* (table-4)

Aware about major risk factors for heart disease as identified by respondents are smoking (95.6%) and least aware about intervention taken for weight increased problem in the last 12 months (14.4%).

### *Level of awareness regarding CVH* (table-5)

Respondents' level of awareness regarding cardiovascular disease is 55.6% aware among older people.

**Table 6: Association between Level of Awareness regarding CVH and Selected Variables n=90.**

Variables	Level of Awareness		$\chi^2$	UOR	p-value
	Aware No. (%)	Unaware No. (%)			
<b>Age Group (in years)</b>					
<75(54)	32(59.3)	22(40.7)	0.750	1.455	0.386
≥75(36)	18(50.0)	18(50.0)			
<b>Gender</b>					
Male (30)	18(60.0)	12(40.0)	0.360	1.312	0.549
Female (60)	32(53.3)	28(46.7)			
<b>Marital Status</b>					
Married (81)	45(55.6)	36(44.4)		1.00	0.641§
Unmarried (9)	5(55.6)	4(44.4)			
<b>Ethnicity</b>					
Brahmin/Chhetri(75)	36(48.0)	39(52.0)			
Janajati(15)	14(93.3)	1(6.7)		0.066	0.001§
<b>Religion</b>					
Hindu (67)	48(71.6)	19(28.4)		26.52	<0.001§
Non Hindu(23)	2(8.7)	21(91.3)			
<b>Educational Status</b>					
Literate(69)	37(53.6)	32(46.4)	0.447	0.712	0.504
Illiterate(21)	13(61.9)	8(38.1)			
<b>Health Insurance</b>					
Yes(14)	7(50.0)	7(50.0)	0.207	0.767	0.649
No(76)	43(56.6)	33(43.4)			
<b>Type of Family</b>					
Nuclear(24)	20(83.3)	4(16.7)		6.00	0.002§
Joint(66)	30(45.5)	36(54.5)			
<b>Living Arrangement</b>					
Living with Family(80)	41(51.2)	39(48.8)		0.117	0.38§
Living Singally(10)	9(90.0)	1(10.0)			
<b>Income Status(NPR/yr)</b>					
≤60000(40)	23(57.5)	17(42.5)	0.110	1.153	0.753
>60000(50)	27(54.0)	23(46.0)			
<b>Status of BMI</b>					
Non-obese (87)	49(56.3)	38 (43.7)		2.579	0583§
Obese (3)	1 (33.3)	2 (66.7)			
<b>Presence of Chronic Illness</b>					
Yes(68)	37 (54.4)	31 (45.6)	0.147	0.826	0.701
No(22)	13 (59.6)	9 (40.9)			

UOR: Unadjusted odd ratio; §: Fisher exact test; p value significant at <0.05

#### Association between Levels of Awareness regarding CVH with Selected Variables (table 6)

Similarly, There is factor associated between level of awareness regarding CVH with ethnicity (p=<0.001), religion (p=<0.0001), and type of family (p=0.002).

#### DISCUSSION

The present study aimed to find-out awareness regarding cardiovascular health among older people residing in Bharatpur-11 Municipality, Nepal. The major findings were reported 55.6% respondents were aware about cardiovascular health.

This finding was supported by a study conducted in India by Sadasivam et al (2016) reported that smoking (84.4%) felt that risk factor of CVD<sup>4</sup> and by Aminde et al (2017) reported that Only 36.0% were unaware about cardiac risk factors among adult people.<sup>[3]</sup>

The significant factors associated with cardiovascular health among older people were ethnicity, religion, and type of family.

This findings was contrast with a study conducted by Aminde et al (2017) which revealed that education, high monthly income, having a family history of CVD and being a formal smoker were significantly associated with moderate-to-good knowledge.<sup>[3]</sup>

#### CONCLUSION

We have found sub-optimal level of awareness regarding cardiovascular health in a population in Bharatpur, Nepal. Having ethnicity, religion and type of family were associated with level of awareness. Community education on CVH, targeting especially populations with

socio-demographic characteristics, may be beneficial in the combined efforts to achieve the reductions in CVDs formulated in WHO global action plan for the prevention and control of NCDs, 2013-2020.

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