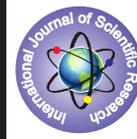


Awareness of Risk Factors and its Correlates in Patients of Hypertension and Coronary Heart Disease in Jamnagar District: A Cross-sectional Study



Community Medicine

KEYWORDS: non-communicable disease, risk factor, lifestyle modification.

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ABSTRACT

Background: Hypertension (HTN) and Coronary Heart Disease (CHD) are major public health problems in the current global health scenario. Amending modifiable risk factors can greatly influence the disease progress and complications in patients and prevention in the population. **Aim:** To estimate the awareness of risk factors of HTN or CHD and to find out the association of awareness of risk factors with socio-demographic factors. **Methods:** The present study was a hospital-based cross-sectional study done in 400 patients. **Results:** Knowledge about risk factors of HTN and CHD is not satisfactory and often comes after the onset of the disease and not prior to it. Significant association was seen in the level of awareness between area of living, literacy status, socio-economic status and also duration of illness. **Conclusion:** Our study elicited that unless other aspects of development like literacy, poverty and uncontrolled urbanization are not addressed, health cannot be achieved. Also, non-pharmacological treatment is given a step-motherly treatment instead of its proven efficacy.

Introduction:

Non-communicable diseases (NCDs) have taken over communicable diseases as the leading cause of morbidity and mortality globally. Of all the NCDs, cardiovascular disease (CVD) is a major cause of disability and premature death throughout the world, and contributes substantially to the escalating costs of health care. Of an estimated 58 million deaths globally from all causes in 2005, cardiovascular disease accounted for 30%. This proportion is equal to that due to infectious diseases, nutritional deficiencies, and maternal and perinatal conditions combined.¹ India is walking on the double-edged sword of communicable diseases as well as NCDs. And, contrary to the popular belief, CVDs are indeed common in the Indian sub-continent.²

Hypertension (HTN) is the most common form of CVD and also a major risk factor for other CVDs like coronary heart disease (CHD). A recent meta-analysis has shown prevalence of hypertension as 40.8% and 17.9% in urban and rural population of India.³ HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart diseases deaths in India.⁴ It is presumed that mortality rates for CHD will become greater with the constantly increasing prevalence of risk factors.⁵ The increase in prevalence of HTN and CHD is largely attributable to rapid transition of lifestyle practices in developing countries like India.⁶ Assessment of knowledge regarding these risk factors, especially modifiable ones, is very important in patients too. Since, awareness can lead to risk factor modification and control leading to better secondary prevention by better disease control, slowing disease progression and reducing chances of complications. It was observed that though several population-based studies are done to assess knowledge of risk factors, studies in patients have been neglected so far. Considering this background, there is an obvious need for a research with regards to HTN and CHD, especially to assess the awareness of risk factors of the same and its correlates among the patients already diagnosed with these diseases to prevent further complications.

Aims and objectives:

- (1) To estimate the awareness of risk factors of HTN or CHD
- (2) To find out association between awareness regarding HTN or CHD with socio-demographic factors.

Materials and Methods:

Study area and design: The present study was a hospital-based cross-sectional study conducted in selected urban and rural areas of Jamnagar, a coastal district is in the western - most part of the country for a period of one year, from July 2013 to June 2014.

Study Population: Patients attending Non-communicable disease

(NCD) clinics at the Tertiary care hospital and at the selected Community Health Centers (CHCs) of study district.

Inclusion criteria:

1. Patients who are aged 30 years or more.
2. Patients who are already diagnosed as having HTN and CHD.

Exclusion criteria:

1. Patients who do not satisfy the inclusion criteria.
2. Patients not willing to participate.
3. Patients who are critically or mentally ill.
4. Patients who were diagnosed as hypertensives during current pregnancy.

Sample Size and Sample Selection: Since prevalence (P value) from previous studies on the topic of present study is not available, an anticipated P value is taken as 50%, as per WHO practical manual⁷. Relative allowable error of 10% was taken and using the formula $4pq/L^2$ a sample size of 400 was calculated. Out of 400 sample size, 50% study subjects (200 subjects) were selected from tertiary care hospital of study district and of remaining 50% (200) study subjects from CHCs of study district. There are 11 CHCs in study district, of which 50% were chosen through simple random technique. If a patient had been already included in the study, then next patient was taken up instead of this one for the study to avoid repetition.

Ethical Clearance: The study protocol was reviewed and approved by The Institutional Ethical Committee (IEC) of the institution. An informed consent was taken from all participants of the study after fully explaining the purpose of the study and assuring them of full confidentiality.

Data Collection: Data collection was done by personal interview that was carried out in language understood by the study subjects using a pre-designed, pre-tested, semi-structured proforma comprising questions about socio-demographic factors, his/her knowledge about risk factors of HTN or CHD. In addition, clinical examination along with blood pressure and anthropometric measurements were done. All the individuals who participated in the study gave their consent to be part of the study.

Data Entry and Analysis: Data entry was done using Microsoft Office Excel 2007 and data analysis was done using MedCalc Ver. 13.2.2.

Results:

The study population comprised of 400 hypertensive and CHD patients attending selected health-facilities of Jamnagar. Among the

subjects interviewed, 7.5 % (30) belonged to the age group of 30-39 years, 25.5 % (102) belonged to the age group of 40-49 years, 26.25 % (105) belonged to the age group of 50-59 years, 27.25% (109) belonged to the age group of 60-69 years, 13.5 % (54) belonged to the age group of > 69 years. Of the study subjects, 43% (172) were males and 57% (228) were females. 346 (86.5%) were married, 5 (1.25%) were never married, 49 (12.25%) were widowed. 53.75% (215) were from urban non-slum area, whereas 23.75% (95) from urban-slum and 22.5% (90) were from rural areas. 48.75% (195) subjects were educated up to primary level, 16.5% (66) were educated up to secondary level, 4.75% (19) were educated up to higher secondary levels while 4% (16) had received education up to graduation or above while the rest were illiterate. 45.25% (181) were housewives. This was followed by 15.75% (63) of labourers and 10.5% (42) of retired people. While 8.5% (34) owned some kind of business, 5.25% (21) were doing service, 5.75% (23) were farmer, and 9% (36) were involved in various kind of occupation like housemaid, driver etc. clubbed under "others". Out of total enrolled patients, 86.5% (346) were married, 1.25% (5) was unmarried, and 12.25% (49) were either widow or widower. In the present study, maximum i.e. 36.25% (145) study subjects belonged to socio-economic class IV, followed by 26.25% (105) from class II, 22.5% (68) from class III, 9.25% (37) from class I and 5.75% (23) from class V. It was observed that 5.25% (21) were not aware of the risk factors of HTN or CHD while the rest were aware of at least one risk factor for the same.

Majority had knowledge about unhealthy food (94.5%) like high salt intake, fatty food etc. and stress (34.5%) as a risk factor, while only 12%, 4.25% and 0.75% had knowledge regarding tobacco use and alcohol, physical inactivity and obesity as risk factors for HTN or CHD. Among those who were aware about various risk factors, 93.5% (374) had information from health professionals, while 5 (1.25%) had information from media, friends etc. We observed that 93% (372) gained knowledge about risk factors after they were diagnosed, 1.75% (7) before having the disease and 5.25% had no knowledge regarding the risk factors at all.

There was no significant difference in level of awareness about risk factors between male and female sex or age of the patients. However, significant association was seen in level of awareness between area of living (i.e. rural, urban slum and urban town) ($p = 0.01$), education (literate and illiterate) ($p = 0.01$), SES status ($p = 0.04$) and also duration of illness ($p = 0.009$).

Discussion:

Study subjects between the ages of 30-59 years, which is supposed to be the prime age for economic productivity comprised of nearly 3/5th of the total study subjects. Prevalence was found to be lowest in younger age. The findings of Pandor's study (2006) in Jamnagar city were similar⁸. More than half of the patients were female and this was comparable to results from studies conducted in Turkey, India, USA and Nigeria^{9, 10, 11, 12}. However, the proportion of male (54.74%) and female patients (45.26%) in her study was almost the reverse than in the present study. More than half of the total study subjects were from urban non-slum followed by urban-slum and rural areas. This finding was comparable with findings of Bhanushali V. (2002)¹³. Literacy status of an individual affects his lifestyle and attitudes, thus his vulnerability to risk factors or in disease management. 26% of the patients were illiterate while the majority had varied levels of education. However, literacy levels were higher (92%) in Pandor's study.⁸ Type of occupation also affects individual's chances for developing risk factors/HTN or CHD. In the present study, nearly 1/2 of the patients were housewives followed by labourers and retired people. However, the scenario was quite different in a prior study in Jamnagar. 8 Marriage is a very important factor affecting the stress in the life of an individual thus affecting CHD/ HTN. Majority of the recruited patients were married. The findings were comparable to other studies.^{8, 13} We observed that that only 35.5% of the patients were from upper socio-economic class (class I and II), while remaining 64.5% were from lower socio-economic class (class III, IV and V). This could be due to the fact that in government health care

set up, beneficiaries (patients) are generally from lower socio-economic class or this might as well suggest the possibility of similar distribution of HTN and CHD among low as well as upper class as a result of epidemiological transition. However, majority belonged to SES I and none from class V in the study carried out by Pandor J. 8 But the findings of Mahajan et al. (2012) were similar to the current study.¹⁵

Better awareness facilitates secondary prevention i.e. improved control and better lifestyle practices. So an attempt was made to study the awareness of risk factors amongst the study subjects. It was observed that the majority (94.5%) were aware of at least one risk factor. This was much promising then a study done in Saudi Arabia where 68% of the participants had poor knowledge regarding HTN.¹⁶ Most of them identified unhealthy food like high salt intake, fatty food etc. and stress as a risk factor, while only a handful had knowledge regarding tobacco use and alcohol, physical inactivity and obesity as risk factors for HTN or CHD. Shah T. (2005) found that 71.33% knew about fatty food as risk factor so awareness regarding unhealthy diet was better in the present study.¹⁴ However, compared to those in the present study, Shah's study subjects were better aware for obesity (27.67%), smoking (22.33%), high cholesterol (23%) and sedentary life style (26.33%) as risk factors.¹⁴ Health professionals formed a major source of this information in our study. It was unfortunate that as high as 93% gained this knowledge about risk factors only after they were diagnosed.

There was no significant difference in level of awareness about risk factors between male and female sex or age of the patients. However, significant association was seen in level of awareness between area of living (i.e. rural, urban slum and urban non-slum), education, SES status and also duration of illness. Shah T. (2005) found that awareness level for various risk factors was greater in males than in females.¹⁴

Conclusion:

Hypertension is an enormous public health issue because though it is a reversible risk factor for coronary heart disease, stroke, congestive heart failure, renal failure, peripheral vascular disease amongst others, still it continues to rage in today's world. Studies have shown that cardiovascular disease can be prevented or managed by modifying various risk factors. However, we find that even the patients suffering from the diseases are not well aware of the risk factors, and often they become aware only after they are already being afflicted by it. This is a matter of serious concern and proper health education should be mediated by television, newspaper, social sites, radio and health professional should invest more time to do opportunistic counselling. Our study elicited that unless other aspects of development like literacy, poverty, uncontrolled urbanization are not addressed public health awareness and action will face disregard too.

Tables: Table 1: Socio-demographic profile of the study sample (N=400)

Socio-demographic Variables	No	Percentage (%)
Age group (in completed years)		
30-39	30	7.5
40-49	102	25.5
50-59	105	26.25
60-69	109	27.25
>69	54	13.5
Sex		
Male	172	43
Female	228	57
Religion		
Hindu	323	80.75
Muslim	75	18.75

Others	2	0.5
Locality		
Urban	215	53.75
Urban slum	95	23.75
Rural	90	22.5
Literacy status		
Illiterate	104	26
Literate	296	74
Marital Status		
Married	346	86.5
Widowed	49	12.25
Never married	5	1.25
Occupation		
Labourer	63	15.75
Business	34	8.5
Farmer	23	5.75
Service	21	5.25
Housewife	181	45.25
Retired	42	10.5
Others	36	9
Socio economic class (according to Modified Prasad scale 2014)		
Upper class (I)	37	9.25
Middle class (II+III)	195	48.75
Lower class (IV+V)	168	42
Duration of HTN		
≤ 5 years	232	58
>5 years	168	42

†according to Modified Prasad Scale 2014. Class II & III and IV & V have been clubbed together

Table 2: Distribution of study subjects according to the source of information of the risk factors of HTN or CHD

	No.	%
Source of information (n=400)		
Aware	Health professional	374 93.5
	Others	5 1.25
Unaware	21	5.25
Time of gaining knowledge about the risk factors (n=379)		
Before having the disease	7	1.75
After having the disease	372	93
Knowledge of risk factors* (n=379)		
Unhealthy diet including salt intake	378	94.5
Obesity	3	0.75
Physical inactivity	17	4.25
Stress	138	34.5
Tobacco use and alcohol	48	12

Table 3: Association between awareness regarding risk factors and various socio-demographic factors

Demographic factor	Risk factors				X ² value	P value
	Aware (n=379)		Unaware (n=21)			
	No.	%	No.	%		
Sex						
Male	160	42.22	12	57.14	1.251	0.2634
Female	219	57.78	9	42.86		

Age (in yrs)						
≤ 50	156	41.16	5	23.81	1.822	0.1771
> 50	223	58.84	16	76.19		
Locality						
Urban	210	55.41	5	23.81	8.636	0.01*
Slum	88	23.22	7	33.33		
Rural	81	21.37	9	42.86		
Education						
Illiterate	93	24.54	11	52.38	6.635	0.01*
Literate	286	75.46	10	47.62		
Socioeconomic class†						
Upper class (I)	37	9.76	0	0.00	6.341	0.042*
Middle class (II+III)	188	49.60	7	33.33		
Lower class (IV+V)	154	40.63	14	66.67		
Duration of HTN						
≤ 5 years	226	59.63	6	28.57	6.656	0.0099*
>5 years	153	40.37	15	71.43		

†according to Modified Prasad Scale 2014, Class II & III and IV & V have been clubbed together *P < 0.05 (statistically significant)

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