ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 10, pp.40768-40773, October, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

KNOWLEDGE ASSOCIATED WITH CARDIOVASCULAR DISEASE AMONG EARLY ADULTHOOD

***Dayal Bhawana and Singh Neetu**

Department of Human Development and Family Studies, School for Home Sciences, Babasaheb Bhimrao Ambedkar University (central university), Vidya Vihar, Raibareli road, Lucknow-226025, Uttar Pradesh India

ARTICLE INFO

Article History:
Received 20th July, 2016
Received in revised form
22nd August, 2016
Accepted 15th September, 2016
Published online 30th October, 2016

Key words:

CVD, risk factors,
Signs and symptoms,
Addiction pattern.

ABSTRACT

Background: CVD has been designated as the leading cause of mortality and morbidity in India, representing a total of 31% of all global deaths**.** With the growing incidences and presence of CVD in both urban and rural area among male and females, it gets necessary to look into the depth and quote the causes for the growing condition. This study was performed to assess the level of knowledge among early adulthood on signs and symptoms, Risk factors, physical activity, morbidity pattern and addiction related to CVD

Methods: A descriptive cross sectional survey was performed using a pretested self administered questionnaire on 250 purposively selected adult respondents, Frequency, mean and SD was used to assess the level of knowledge.

Results: The response rate was 100%. The knwoeldge of respondents on signs and symptoms, RFs and morbidity Pattern was very low where 60% could not identify Diabetes mellitus as one of the RF, along with high blood pressure and high cholesterol(55.2 and 50.8%). the most common identified symptom was chest pain (71.60) but other symptoms such as dyspnoea (49.20%), sudden numbness or weakness of the arm , face or leg (72.80%),loss of balance or coordination (71.60%) were least identified or not at all known by the study subjects. The majority of respondents were students yet they were unaware of the normal range of HDL (92%), LDL (92.4%) apart from this they were not even aware of the normal range for Blood pressure and Sugar (60.4% and 77.6). In this study, 39.6% assumed that there was no relationship between exercise and heart health while 54 % believed that brisk walking is not good enough.

Conclusion: This is the first study in Lucknow region based on knowledge associated with CVD among early adulthood. The present study reports that the adults have comparatively low knowledge related to CVD, which can be associated with increased risk and worsened condition of the participants in future. The participants had a fair enough knowledge on smoking and alcohol but the associated risk factors, sign and symptoms of CVD was quite poor . There is an urgent need to enrol the participants into educational interventions to bring about the change in the perception and knowledge of individuals.

Citation: Dayal Bhawana and Singh Neetu. 2016. "Knowledge associated with cardiovascular disease among early adulthood", *International Journal of Current Research*, 8, (10), 40768-40773.

INTRODUCTION

CVD has been designated as the leading cause of mortality and morbidity in India, representing a total of 31% of all global deaths (WHO Fact sheet, 2015). With the growing incidences and presence of CVD in both urban and rural area among male and females, it gets necessary to look into the depth and quote the causes for the growing condition. In India where CVD has been estimated to be the cause of death of 1.5 million people annually (Gaziano *et al*., 2006), it might soon become the country with the highest mortality and morbidity because of CVD (World Health Report, 2002). Where India faces a total of 53% deaths due to non-communicable disease in India CVD shares its percentage of 24%, with this growing rate India is about to face an epidemic of cardiovascular disease in the coming years (NCD Profile WHO,2011c) . Where the total burden of CVD in the world is constituted to be about 17.3 million deaths per year, heart attacks were responsible for 7.3 million deaths and strokes were responsible for 6.2 million deaths, it is even estimated that 80% of all death occurs due to Heart Attack and stroke (WHO, 2008) in which India shared its percentage of 2.94 million deaths in 2015 (National commission on macroeconomics and Health, 2005). With the increasing stress and changing lifestyle of today's generation mostly in the adulthood, they become more prone to various deliberating Risk factors tends to increases the chances of

****Corresponding author: Dayal Bhawana and Singh Neetu***
Department of Human Development and Family Studies, School for Home Sciences, Babasaheb Bhimrao Ambedkar University (central university), Vidya Vihar, Raibareli road, Lucknow-226025, Uttar Pradesh India

CVD in the coming future. Thus, an optimal management of risk factors is must, thus it is very important that an individual must be able to identify their risk factors. Estimating the prevalence of risk factor is very important as CVD is a multi-factorial disease, with a wide variety of factors affecting the health of an individual and subsequently leading to CVD. Various Risk factors including modifiable and non – modifiable have shown to affect the condition of people through time. (Armitage and Conner, 2000) states that behavioural change is implemented through knowledge and perceived risk that has been stressed through various behaviour motivation theories The purpose of this study was to assess the level of knowledge regarding CVD by judging their outlook on various parameters like Risk Factors, dietary pattern, morbidity pattern, addiction pattern and Physical activity. There has been no such study in this area specifically on Early Adulthood related to knowledge regarding CVD.

MATERIALS AND METHODS

A cross sectional descriptive study was conducted involving participants belonging to the age group of 20-40 years. Multistage sampling was done for selection of the wards through which charak pathology Aliganj and University Health Centre, BBAU Lucknow was selected and purposive sampling was applied for selecting the subjects in the desired age group at each ward. A total of 250 sample size was selected for this study in the Lucknow Region. The criteria for selecting the participants involved

Inclusive Criteria

- Selected individuals belonging to the age group of 20-40 years.

Exclusive criteria

Patients with mental illnesses leading to confusion were excluded from participating• in the study, e.g. delirium, dementia, psychosis, schizophrenia etc. A structured questionnaire was developed based on the literature review on various studies already conducted to assess the knowledge related to CVD of the participants (Sug *et al*., 2001; Jafary *et al*., 2005; Hamarneh *et al*., 2011; Gill and chow, 2010); it was divided into three sections 1) General information 2) specific information 3) knowledge related to CVD.

- **General Information:** This part basically involved all the questions related to the general profile of the participants that included age, religion, caste, monthly income, employment, type of family, family of history of disease and consumption pattern of food.
- **Specific information:** this part covered the specific details like the present morbidity status, weight, WHR, BMI, Height.
- **Knowledge related to CVD:** This section comprised of 5 areas with 4 questions in each section to be answered as yes, I do not know and No. the section included questions related to Controllable Risk factors, morbidity pattern, Signs and symptoms, physical activity, and addiction pattern.

Each of the section was analyzed and questioned separately so that enabled us to identify the specific knowledge gaps in the population. The independent variable of the study were Age, sex, Marital Status, Income, employment, Morbidity status, (self-reported) Type of family (nuclear family system was defined as a household consisting of two parents and their legal children; extended family system was defined as a household where multiple generations of family were living together, single parenting defined as a single parent taking care of their children, childless family defined as a family with no legal children, step family defined as living in with parents through second marriage of their parents, grandparent family defined as living with grandparents), BMI, Weight, Height, WHR (taken by the interviewer) Family History of any disease, Smoking habit, Alcohol consumption, and Nutritional Habits and the dependent variable was the Knowledge of respondents about CVD (self reported).

RESULTS

General Information

The response rate among the 250 respondents was 100%. The total number of female respondents were (57.20), the majority of the people belonged to the age group of 20 to 25 years of age (51.60), the mean age of the participants was 27.42 ±6.7 years. A significant number (68.80) lived in a nuclear family followed by 21.60 % living in joint family out of which majority (52.40) were unemployed and (63.20) were single with 53.20% belonging to Middle Income Group as shown in Table 1.

Table 1. General details of respondents

Characteristic	Detail	Frequency (n=250)	Percentage
Age category	20 to 25 years	129	51.60
	25 to 30 years	53	21.20
	30 to 35 years	24	9.60
	35 to 40 years	44	17.60
Gender	Male	107	42.80
	Female	143	57.20
Religion	Hindu	219	87.60
	Muslim	30	12.00
	Christian	1	0.40
Caste of respondent	General	130	52.00
	OBC	32	12.80
	SC	79	31.60
	ST	9	3.60
Marital status	Single	158	63.20
	Married	90	36.00
	Divorced	2	0.80
Employment	Unemployed	131	52.40
	Retired	8	3.20
	Housewife	24	9.60
	Professional	41	16.40
	Self-employed	46	18.40
What is your monthly income?	LIG (below 30k)	97	38.80
	MIG (30,001-50,000)	133	53.20
	HIG (50,001 and above)	20	8.00
Type of family	Nuclear family	172	68.80
	Joint or extended	54	21.60
	Single parenting	9	3.60
	Childless	3	1.20
	Step family	2	0.80
	Grandparent family	10	4.00

According to Table No. 2 (55.2%) respondents did not had a family history of high cholesterol in contrast with the 20% people who have had a history. Similarly 51.2%, 64.4% and 48% did not have a history of blood pressure, heart disease and diabetes respectively. While 24.8%, 11.6%, 13.6% and 8.4% were not sure of any such condition occurring in their family. The nutritional uptake pattern of the respondents is represented

in table no.3 where consumption of milk pulses, vegetables, fruits and pulses dominates the other food practices with their percentage being 43.20%, 90.40%, 53.60 % and 82.40%. While the consumption of animal products and fast food is being restricted to 8.80 and 11.60 percent on a daily basis.

Table 2. Family History of Disease

Characteristic	Detail	Frequency (n=250)	Percentage
Do any of your primary relatives (parents, grandparents and sibblings) have a history of high cholesterol?	Yes	50	20.0
	No	138	55.2
	Not sure	62	24.8
Do any of your primary relatives (parents, grandparents and sibblings) have a history of blood pressure?	Yes	93	37.2
	No	128	51.2
	Not sure	29	11.6
Do any of your primary relatives (parents, grandparents and sibblings) have a history of heart disease?	Yes	55	22.0
	No	161	64.4
	Not sure	34	13.6
Do any of your primary relatives (parents, grandparents and sibblings) have a history of Diabetes?	Yes	109	43.6
	No	120	48.0
	Not sure	21	8.4

Table 3. Nutritional uptake pattern of respondent

Characteristic	Detail	Frequency (n=250)	Percentage
Consumption pattern of milk	Daily	108	43.20
	3-4 days	43	17.20
	Weekly	16	6.40
	Occasionally	37	14.80
	Never	46	18.40
Consumption pattern of vegetables	Daily	226	90.40
	3-4 days	12	4.80
	Weekly	9	3.60
	Occasionally	3	1.20
Consumption pattern of fruits	Daily	134	53.60
	3-4 days	67	26.80
	Weekly	27	10.80
	Occasionally	21	8.40
	Never	1	0.40
Consumption pattern of pulses	Daily	206	82.40
	3-4 days	30	12.00
	Weekly	8	3.20
	Occasionally	3	1.20
	Never	3	1.20
Consumption pattern of animal products	Daily	22	8.80
	3-4 days	23	9.20
	Weekly	24	9.60
	Occasionally	85	34.00
	Never	96	38.40
Consumption pattern of fast food	Daily	29	11.60
	3-4 days	41	16.40
	Weekly	46	18.40
	Occasionally	116	46.40
	Never	18	7.20

Table 4. Waist Hip artio of male and females

Characteristic	Detail	Range	Frequency (n=250)	Percentage
Waist to hip ratio of Male n=107	Low	<94 cm	64	25.60
	High	94-102 cm	29	11.60
	Very High	>102 cm	14	5.60
Waist to hip ratio of Female n=143	Low	<80 cm	94	37.60
	High	80-88 cm	42	16.80
	Very High	>88 cm	7	2.80

Specific information: Most of the people at present did not suffer from any morbidity condition with a percentage of 112 (44.80%), followed by those 87 (34.80%) who were seeking medical help for some or the other kind of illness which includes certain severe conditions such as high cholesterol 12 (4.8%), arthritis 9(3.5%) , lower abdomen pain 7(2.8%), hypotension 8(3.2%) , dengue 3(1.2%), thyroid 3(1.2%), migraine 6(2.4%), hypothyroid 1(.4%), cervical 2(.8%), Tuberculosis 2(2.8%), paralysis 3(1.2%), gastric discomfort 4(1.6%), Urinary tract infection 4(1.6%), liver cancer 1(.4%), cyst 1(.4%), sinus 1(.4%), asthma 1(.4%), osteoporosis 2(.8%), kidney disorder 5(2%), liver failure 1(.4%), typhoid 1(.4%), hepatitis 1(.4%), fatty liver 1(.4%) and kidney stones 1(.4%) while conditions like weakness 9(3.5%), hand shake 2(.8%), fatigue 6(2.4%) , diarrhoea 1(.4%), heaviness1(.4%), anxiety 4(1.6%),fever 2(.8%), irregular periods 7(2.8%), obesity 5(2%), throat pain 4(1.6%), back pain 7(2.8%), depression 2(.8%), leg swelling 1(.4%) which involves less distress yet imperative care. Quite equal number of people was found from diabetes and hypertension with 9.20 % (23) and 10.00% (25) respectively. Only 2 (.80%) people were suffering from both diabetes and hypertension and 1 (.40%) from coronary heart disease. (Figure 1)

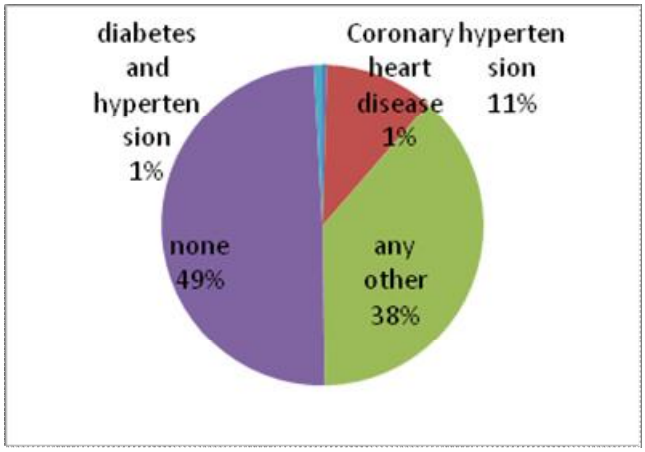

Figure 1. Morbidity Status

The WHR for male and female was high among 11.60% and 16.80 % respondents respectively. The mean height and weight of the respondents was 162±11.59 cm and 62.62 ±11.91 kg respectively.

Knowledge related to CVD

a) **Controllable Risk factors:** The majority of participants had fair amount of knowledge towards the predisposing RFs related to CVD but fairly and equal amount were either not aware or did not believe it to be a risk factor associated with any CVD condition. High fat intake (59.2%), smoking (67.6%) and inactivity (62.8%) were the risk factors of which most of the people were aware whereas factors like high BP (32.8), diabetes (40.0) and high cholesterol (29.6),people were not at all aware that these factors also contribute to the heart disease according to Figure No.2

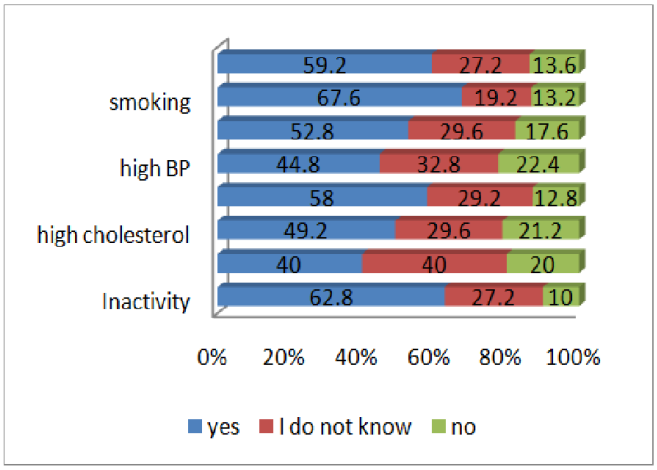

Figure 2. Controllable Risk Factors associated knowledge with CVD

b) **Morbidity Pattern:** The majority of respondents 80.4%, 80.4%,68%, 53.2%, 67.2% were unaware of the normal range of HDL, LDL, Fasting blood sugar level, normal blood pressure level and BMI level. In case of any emergency 36.8% were not aware of any clinic in their where they can report for any situation, while 44.8% did not know that lifestyle is highly associated with the risk fo developing CVD and 44.8% did not know that CVD is a preventable disease.

c) **Sign and symptoms:** Chest pain being the most common symptom was identified by a majority of respondents (71.60) while few believed (12.0) that it's not one of the symptoms associated with CVD. Difficulty in breathing or dyspnea was identified by 50% of the population whereas symptom such as pain or discomfort in the jaw, neck or back was not known by 52.80 % respondents, followed by sudden numbness or weakness of the face, arm and leg 60.80% could not identify it as a symptom. The sudden trouble seeing in one or both eyes, sudeen dizziness, trouble walking or lack of coordination and severe head with no known cause was not identified by 58.80%, 57.20% and 62.00% respectively as shown in figure no. 3

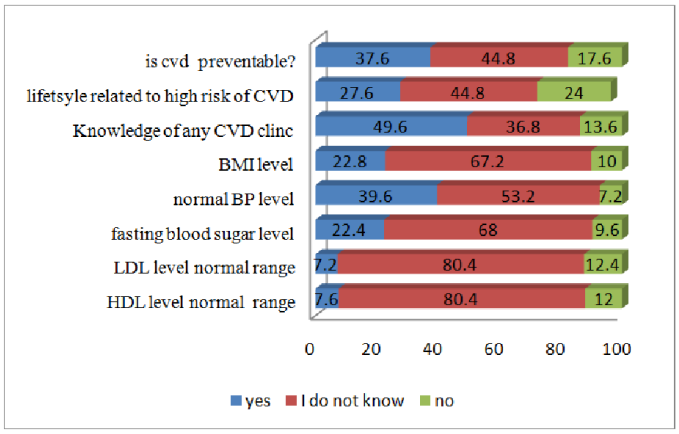

Figure 2. Morbidity pattern associated knowledge with CVD

d) **Physical Activity:** The Physical activity associated knowledge of the respondents in figure no.4 shows that 60.40% believed that there is a relationship between exercise and heart attack, while 46% supported the fact that brisk walking is fair enough to give us good health and 77% had faith that yoga and meditation will improve a person's health in contrast to 17.20% who believed that they had no idea what good can yoga do to their health. Similarly 34.40% disapproved the fact that irregular physical activity will increase a person's chance of having a heart attack

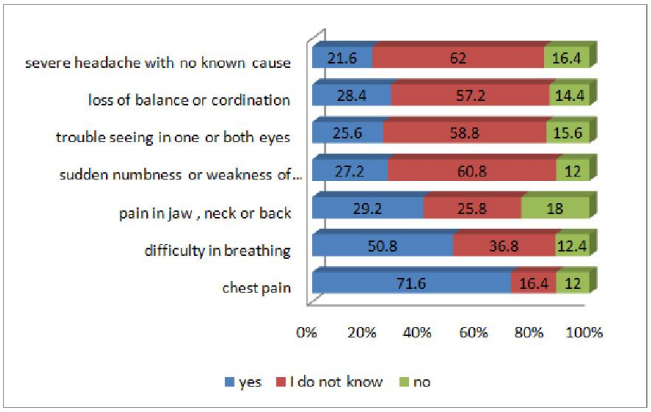

Figure 3. Sign and symptom associated knowledge related to CVD

e) **Addiction Pattern:** Interestingly 83.20% correctly identified smoking being injurious to heart, on the other hand 71.20% clearly stated that people consuming alcohol tend to be more prone to heart failure. Similarly 72.80% believed that any type of tobacco intake may aggravate the condition but only few (35.60) linked medication as addiction to creating heart trouble.

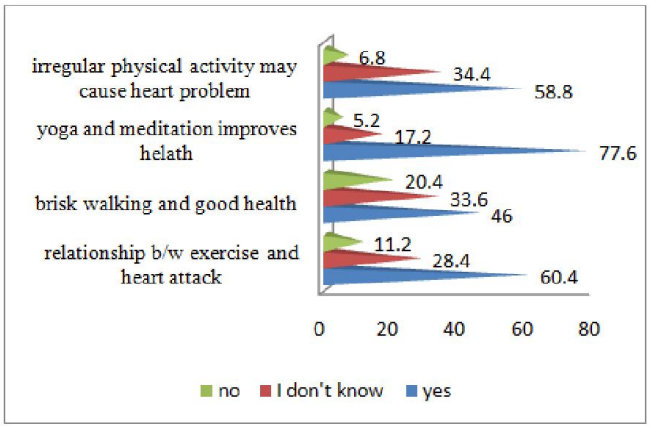

Figure 4. Physical activity associated knowledge related to cvd

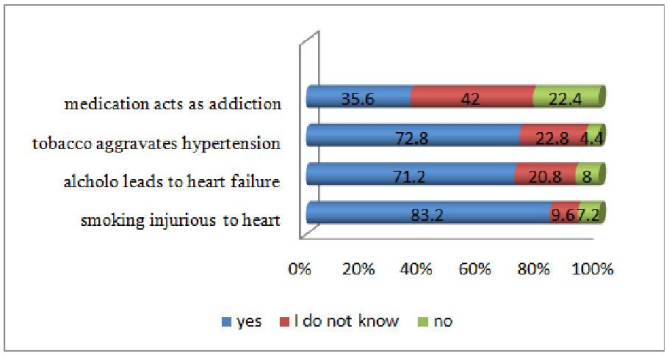

Figure 5. Addiction pattern associated knowledge related to CVD

DISCUSSION

This is the first known study in Lucknow, and probably among Early Adulthood to comprehensively demonstrate the current level of knowledge about risk factors, signs and symptoms, morbidity pattern, physical activity and addiction pattern associated with CVD. More than half of the study subjects were not aware of Diabetes Mellitus being an important risk factor associated with CVD, the results has been consistent based on previous studies (Saeed *et al*., 2009). The findings are quite worrisome given the thought that the number of people suffering by DM will have an absolute increase by 2030 (Wild *et al*., 2004). High Blood pressure and High cholesterol associated knowledge was found highly poor; more than half of the respondents could not identify it as a risk factor, similar results have been supported in a study done by (Mochari *et al*., 2009). CVD being a preventable disease is not known by a handful number of people (62.4%), which is quite a thing to be concerned for as the adulthood period is the most exposed period to various information related to health aspects yet lack of knowledge in association poor lifestyle and increased CVD risk (68.8%) is another troublesome fact, which has been reported in various studies (Potvin *et al*., 2000), thus assuming it to be a global concern at present time. Even though the majority of respondents were students yet they were unaware of the normal range of HDL (92%), LDL (92.4%) apart from this they were not even aware of the normal range for Blood pressure and Sugar (60.4% and 77.6). A quite worrisome finding in the current study was the knowledge of symptoms related to cvd in which the most common identified symptom was chest pain (71.60) but other symptoms such as dyspnoea (49.20%), sudden numbness or weakness of the arm , face or leg (72.80%), loss of balance or coordination (71.60%) were least identified or not at all known by the study subjects quite similar to the study done by (Jafray *et al*., 2005) (Awad *et al*., 2014). The American Heart Association has recently focused on physical inactivity as a major modifiable risk factor for heart disease. In this study, 39.6% assumed that there was no relationship between exercise and heart health while 54 % believed that brisk walking was not good enough. Smoking, alcohol and tobacco intake have been associated with increased heart problems by a majority of respondents in this study similar to various other studies (Khan *et al*., 2006) but medication is not believed to be an addiction as 64.4% believed that medication does not makes our body dependent entirely on medicine.

Conclusion

This is the first study in Lucknow region based on knowledge associated with CVD among early adulthood. The present study reports that the adults have comparatively low knowledge related to CVD, which can be associated with increased risk and worsened condition of the participants in future. The participants had a fair enough knowledge on smoking and alcohol but the associated risk factors, sign and symptoms of CVD was quite poor. There is an urgent need to enrol the participants into educational interventions to bring about the change in the perception and knowledge of individuals.

REFERENCES

Al Hamarneh, Y.N., Crealey, G.E., McElnay, J.C. 2011. Coronary heart disease: health knowledge and behaviour. *Int J Clin Pharm*, 33:111–123.

Armitage, C.J. and Conner, M., 2000. Social cognition models and health behaviour: A structured review. *Psychology and health*, *15*(2), pp.173-189

Awad, A. and Al-Nafisi, H., 2014. Public knowledge of cardiovascular disease and its risk factors in Kuwait: a cross-sectional survey. *BMC public health*, *14*(1), p.1.

Gaziano, T.A., Opie, L.H. and Weinstein, M.C., 2006. Cardiovascular disease prevention with a multidrug regimen in the developing world: a cost-effectiveness analysis. *The Lancet*, *368* (9536), pp.679-686.

Gill, R., Chow, C.M. 2010. Knowledge of heart disease and stroke among cardiology inpatients and outpatients in a Canadian inner-city urban hospital. *Can J Cardiol*., 26:537–540.

Jafary, F.H., Aslam, F., Mahmud, H., Waheed, A., Shakir, M., Afzal, A., Qayyum, M.A., Akram, J., Khan, I.S., Haque, I.U. 2005. Cardiovascular health knowledge and behavior in patient attendants at four tertiary care hospitals in Pakistan– a cause for concern. BMC Public Health, 5:124.

Khan, M.S., Jafary, F.H., Jafar, T.H., Faruqui, A.M., Rasool, S.I., Hatcher, J. and Chaturvedi, N., 2006. Knowledge of modifiable risk factors of heart disease among patients with acute myocardial infarction in Karachi, Pakistan: a cross sectional study. *BMC cardiovascular disorders*, *6*(1), p.1.

Ministry of Health and family welfare. 2005. National commission on macroeconomics and Health- burden of disease in India, Forecasting vascular diseases cases and associated mortality in India. Retrieved 12/06/2016 from http://www.who.int/macrohealth/action/Report%20of%20the%20National%20Commission.pdf

Mochari, H., Ferris, A., Adigopula, S., Henry, G. and Mosca, L., 2007. Cardiovascular disease knowledge, medication

adherence, and barriers to preventive action in a minority population. *Preventive cardiology*, *10*(4), pp.190-195.

Potvin L *et al*. Knowledge of cardiovascular disease risk factors among the Canadian population: relationships with indicators of socioeconomic status. *CMAJ* 2000; 162(9 Suppl.):S5–S11.

Retrieved from http://www.who.int/nmh/countries/ind_ en. pdf?ua=1

Saeed, O., Gupta, V., Dhawan, N., Streja, L., Shin, J.S., Ku, M., Bhoi, S. and Verma, S., 2009. Knowledge of modifiable risk factors of Coronary Atherosclerotic Heart Disease (CASHD) among a sample in India. *BMC International health and human rights*, *9*(1), p.1.

Sug Yoon, S, Heller, R.F., Levi, C., Wiggers, J., Fitzgerald, P.E. 2001. Knowledge of stroke risk factors, warning symptoms, and treatment among an Australian urban population. Stroke, 32:1926–1930.

Wild, S., Roglic, G., Green, A., Sicree, R., King, H. 2004. WHO-global prevention of diabetes: estimates for the year 2000 and projections for 2030. *Diabetes Care,* 27:1047-1053.

World Health Organization. 2002. The World Health Report 2002. Reducing Risk, Promoting Healthy Life. Geneva, Switzerland. Retrieved 05/07/2016 from http://www. who.int/ whr/ 2002/en/.

World Health Organization. 2008. Causes of death, Geneva. Retrieved 15/02/2016 from http://www.who.int/healthinfo/ global_burden_disease/ cod_2008_sources_methods.pdf.

World Health Organization. 2011c. Non- communicable Disease Profile India. Retrieved 15/02/2016 from http://www.who.int/nmh/publications/ncd-profiles-2014/en/

World Health Organization. 2015. Cardiovascular Diseases fact sheet. Department of Non-communicable Diseases and Environmental. Retrieved 05/07/2016 from http://www. who.Int/mediacentre/factsheets/fs317/en/.

****