Al Ameen J Med Sci 2017; 10(2):112-118● US National Library of Medicine enlisted journal ● ISSN 0974-1143

ORIGINAL ARTICLE CODEN: AAJMBG

Perception of risk of cardiovascular disease among early adulthood in Lucknow city

Bhawana Dayal* **and Neetu Singh**

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

Abstract: *Aims and Objectives:* The purpose of this study was to assess perception of risk of cardiovascular disease among early adults in Lucknow city and its association with demographic variables. *Background:* Assuming risk perception in a healthy manner may lead to healthy behavioural changes leading to better health outcomes. *Design:* A descriptive study. *Methods:* Using descriptive statistics and regression analysis, a convenience sample of 250 adults was used. *Results:* A total 62% individuals perceived themselves at a risk of heart disease, of which age, gender and employment had a strong association with risk perception. The mean and SD for total risk perception among male and female was 47.46±5.26 and 49.05±4.5 respectively, thus women assuming more risk perception than men. Age had a strong and significant association with dread risk (β=0.185, p<.01) and Risk (β=0.036, p<.01) with no significant association with Unknown risk and total risk. Meanwhile Gender had a marginal significant association with total risk ((β=0.1.235 p<.10) and significant association with unknown risk (β=0.903, p<.05). Also the perception of risk according to the type of family had no significant association. Employment had a significant association with unknown risk (β=0.2.736, p<.05) and less association with Total risk (β=0.464, p<.10). Women's living alone and in step families, individuals in age group (30-35), and retired respondents perceived the risk most. *Conclusion:* Our data indicates that educational intervention is needed among adults to enhance their awareness and reduce their risk perception. The information gained from this present study will help to further implement policies to combat the health of people who are at the risk of developing CVD or are already suffering from.

Keywords: Risk perception, CVD, Health behaviour, Lifestyle, Behavioural change.

Introduction

In Today's era where everything has turned its direction towards technology, it gets a little tough to follow the daily routine of a healthy lifestyle, the rapid economic growth is trailed by not only change in lifestyle but also various cultural changes have taken place. Lifestyle of an individual including nutrition plays an imperative role in the aetiology of various diseases that takes a toll on the man's health among which one of them is the Cardiovascular Diseases, which has increased the pervasiveness of non-communicable diseases in India that has ultimately outgrown through gender, age, locations etc. CVD has been designated as the leading cause of mortality and morbidity in India, representing a total of 31% of all global deaths [1]. 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. Early Adulthood or Young Adulthood often defined as a stage from the age of 20- 40 years where transition takes place from exploration to experimentation, a phase of life which involves personal and economic independence, a time where an individual gets involved in exploring themselves to the fullest, they become more self- focused [2]. The perception of an adult towards their risk factors of heart diseases can cause a drastic change in their ability to act in making their health related decisions [3].

Background: In India where CVD has been estimated to be the cause of death of 1.5 million people annually [4], it might soon become the country with the highest mortality and morbidity because of CVD [5]. Over the past years where India has seen such a rapid growth in its economy, the burden of diseases has also increased subsequently. The load of diseases including communicable and Non-

communicable is expected to rise far more that its present percentage by 2020. 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 [6].

Lucknow, the capital of Uttar Pradesh is situated 123 meters above sea level and it has always been a multicultural city. It is situated on 26.30 & 27.10 North latitude and 80.30 & 81.13 East longitude. Lucknow covers an area of 2528 sq.km. The population of district Lucknow as per census 2011 is 4,588,455. Currently with a literacy rate of 61.31%, Lucknow enjoys a sustainable growth but studies conducted have seen a high prevalence of risk factors such as low fruit intake (88.2%), low vegetable intake (99.1%), increased body mass index (15.9%), increased waist circumference (22.5%), and hypertension (20.9%) in the age group of 20-40 years [7]. The prevalence of CVD because of changing lifestyle based on clinical diagnosis & ECG is 7.1% with 8.8% in Urban area and 3.8% in Rural area ($p<0.01$). Diagnosis on the basis of ECG alone was 3.0% in males and 8.1% in females ($p<0.05$). Isolated Q wave was present in 2.1% subjects while ST segment depression was present in 3.0% of subjects [8].

Perception of Risk of CVD: Risk perception most commonly stated as a judgement that a person makes about the characteristics and severity of risk, mostly explained in terms of health [9] explains risk perception a very important predictor that ascertains a person's commitment towards healthy lifestyle. In a study done by [10] to assess the perception of women living with coronary heart disease it was found that most of the participants failed to recognize the significance of risk factors and symptoms, they even refuted the existence of any disease following diagnosis and treatment. risk factors and risk perceptions among HIV-infected adults states that knowledge regarding RFs of CVD is not predictive of perceived risk of CVD $F[1,117] = 0.13$, $p > .05$), the perceived risk was weakly associated with estimated risk but significantly correlated $r(126) = .24$, $p = .01$) [11, 7]. States that behavioural change is implemented through knowledge and perceived risk that has been stressed through various behaviour motivation theories. People's perception towards risk factors of CVD reveals perceived dietary factors, particularly consumption of salty, fatty, and oily food, as the main determinants of CVD, respondents commonly linked smoking, alcohol intake, and high blood pressure with cardiac ailments but account a mixed opinion regarding the causal role of body weight and physical inactivity [12].

Purpose and significance: Assuming what the risk can do to your health is important for two reason first too keep a track of your health by reducing those risk behaviours, secondly preventing CVD by efficiently communicating their risk to health professionals. The main purpose of this study was to assess perception of risk of CVD among early adulthood in Lucknow city and its association with demographic variables. Specifically this research paper answers two questions:

1) What is the percentage of people who are at the perception of risk of heart disease?
2) What are the associations between demographic variables and perception of risk of CVD?

Various review of literature has been gone through and no such study has been conducted in the Lucknow city. This study will act as a baseline for future researches that will specifically deal with the risk factors of CVD, because the changing lifestyle and urbanization diseases have taken a toll on the health of people. Perception of individual is highly influenced by his surroundings. Therefore demographic effect on the risk perception stands of utmost importance. Future development of policies and programmes lies on the fact of how the people perceive their risk and up to what extent.

Material and Methods

Design, sample and setting: Perception of Risk among Early adults in Lucknow city was conducted using a descriptive study. The criteria included in the study were:

1) Selected individuals belonging to the age group of 20-40 years)
2) Literate individuals not diagnosed with CVD and a Lucknow citizen.

The study was conducted in the city of Lucknow, participants were approached personally and permission was obtained from them by telling the gist of the study. Participants were recruited from university and houses. A convenience sample of 250 was recruited in the present study.

Data collection procedures: The participants were made aware of the study, with the participation being totally voluntary; withdrawal from the research by any subject at any time of the study was accepted. The names of the subjects were not revealed at any part of the study nor was it noted down anywhere for any future reference, instead of names coding of the subjects was done. Each and every data was kept strictly personal pre and post research.

Data collection tools: The Perception of Risk of Heart Disease Scale is basically a 20- item instrument that measures an individual's insight of developing a heart disease in the future [13]. This scale hardly takes 20 minutes as it is a self reported scale. The items on the scale have a 4 point Likert Scale response that ranges from strongly agree (1) to strongly disagree (4). The total alpha for this scale was. 80, it has been tested on 295 individuals for internal consistency, test-retest reliability, and construct validity. The perception is calculated by summing up the scores, the higher the score the higher the perception whereas the self reported demographic details of the individuals were collected through a pre designed and pre tested questionnaire age categorised as 20-40 years (early adulthood), gender as male or female, type of family as Nuclear, Joint or Extended, Single Parenting, Childless, Step family, Grandparent family and employment quotes as Unemployed, retired, housewife, self – employed and professional. The internal consistency of the overall tool was .948 (95% CI: 0.938 – 0.956). The score of 0.7 and above was considered acceptable.

Data Analysis: Data was analysed using SPSS (version 20), descriptive statistics was used to describe the study variables by reporting their frequencies and percentages. Data was analysed by reporting their means and SD. To answer the first research questions percentage and SD was applied whereas for the second questions there were four regression equations in which the total score of PRHDS, dread risk, risk and unknown risk were dependent variables whereas all four demographic characteristics were independent.

Results

Sample descriptions: Two hundred and fifty respondents completed the questionnaire, thus depicting a 100% response rate. The average age of the respondents was 27.42 ± 6.7 (20-40 years), of which 129 (51.60%) belonged to the age group of 20 to 25 years, 53 (21.20%) belonged to the age group of 25 to 30 years, 24 (9.60%) were from the age group of 30 to 35 years and 44 (17.60%) were found between the age group of 35 to 40 years. There were a total number of 143 (57.20%) female and 107 (42.80%) male respondents mostly living in joint family (21.60%), followed by grandparent family (4.00%), single parenting (3.60%), childless (1.20%) and step family (80%). The percentage of professional and self-employed respondents was 16.40% and 18.40% with housewives and retired respondents being 3.20% and 9.60% only. All study variables are reported in Table1 and Table 2.

Table-1: Demographics (n=250)

Variables	Frequency	%
Age (in years)		
20 to 25	129	51.60
25 to 30	53	21.20
30 to 35	24	9.60
35 to 40	44	17.60
Gender		
Male	107	42.80
Female	143	57.20
Employment		
Unemployed	131	52.40
Retired	8	3.20
Housewife	24	9.60
Professional	41	16.40
Self-employed	46	18.40
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

Table-2: Mean and Standard Deviation for continuous variables (n=250)				
Variables	**M**	**SD**	**Possible Range**	**Actual Range**
Age	27.42	6.7	20-40	20-40
Total PRHDS	48.736	4.9	20-80	20-60
Dread risk	16.42	3.99	7-28	7-25
Risk	18.008	3.10	6-24	6-20
Unknown risk	13.94	2.81	7-24	7-22

Table-3: Multiple regression analysis of demographic variables on perception of risk of heart disease

	Total risk@		Dread Risk#		Risk^		Unknown Risk&	
Variable	**β**	**t-value**	**β**	**t-value**	**β**	**t-value**	**β**	**t-value**
Age	0.103	1.817	0.185***	4.084	0.036***	-3.431	0.04	1.254
Gender	1.235*	1.794	-0.05	-0.091	0.433	.881	0.903**	2.341
Type of family	0.388	1.430	0.318	1.463	0.171	.027	0.065	0.430
Employment	-0.464*	-1.908	-0.254	-1.303	0.153	1.065	-0.373**	-2.736

@ F (4, 245) =3.364	P= 0.011	R^2= 0.052
# F (4, 245) =4.888	P= 0.001	R^2= 0.074
^ F (4, 245) =3.560	P=0.008	R^2=0.055
& F (4, 245) =5.634	P=0.000	R^2=0.084

*** Sig. at 1% level of significance (p<.01)
** Sig. at 5% level of significance(p<.05
*Sig. at 10% level of significance(p<.010

a. Dependent Variable: Total risk, Dread Risk, Risk, Unknown risk

b. Predictors: (Constant), Employment, Type of family, Gender, Age

Demographics and perception of risk of CHD: As shown in Table 3, Age had a strong and significant association with dread risk (β=0.185, p<.01) and Risk (β=0.036, p<.01) similar to results observed by [13] with no significant association with Unknown risk and total risk. Meanwhile Gender had a marginal significant association with total risk ((β=0.1.235 p<.10) and significant association with unknown risk (β=0.903, p<.05). Also the perception of risk according to the type of family had no significant association. Although Employment had a significant association with unknown risk (β=0.2.736, p<.05) and less association with Total risk (β=0.464, p<.10).

Perception of Risk of Heart Disease among respondents: The perception of risk was categorised into dread risk, risk and unknown risk based on the PRHD Scale, according to figure no. 1, the results revealed that 62% respondents fell in the category of risk, followed by 16.8% falling in dread risk category and 21.2% in unknown risk defining that majority of respondents perceived of having a heart disease in the coming future. The mean and SD for total risk perception among male and female was 47.46±5.26 and 49.05±4.5 respectively (Table no.4).

Fig-1: Detailed status of Perception of risk of heart disease

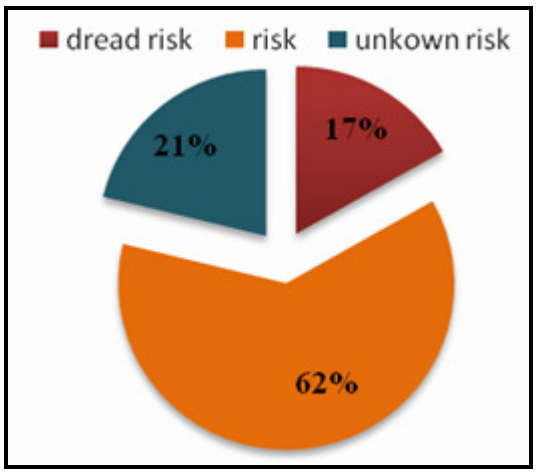

Table-4: Mean and SD of risk perception associated with demographic characteristic				
Age category	**PRHDS Dread Risk**	**PRHDS Risk**	**PRHDS Unknown Risk**	**Total risk**
20 to 25	15.6± 3.39	18.5± 4.9	14.1±2.73	48.3±4.4
25 to 30	16.41±4.3	17.9±2.9	13.5±3.4	47.9±6.08
30 to 35	17±3.63	17.9±2.5	13.8±2.8	48.8±4.4
35 to 40	18.3±4.7	16.5±4.39	13.8±2.1	48.75±5.05
Gender				
Male	16.5±4.7	17.7±3.3	13.18±2.84	47.46±5.26
Female	16.32±3.3	18.22±2.9	14.5±2.66	49.05±4.56
Type of Family				
Nuclear	16.3±4.1	17.9±3.18	13.8±2.7	48.1±4.4
Joint	15.9±3.6	18.4±3.0	14±3.10	48.6±6.5
Single parenting	17.2±2.8	16.5±2.1	13.5±3.4	47.3±2.9
Childless	22.3±4.9	16.6±3.5	14±4.5	53±3.6
Step family	19.5±9.1	18.5±6.3	16.5±0.7	54.5±3.5
Grandparents	26.9±2.5	18.4±2.1	14.1±2.3	49.4±3.1
Employment				
Unemployed	16±3.5	18.2±2.6	14.4±2.6	48.6±4.2
Retired	18±4.2	19.37±4.2	15±2.7	52.37±3.7
Housewife	17.29±3.6	17.87±3.3	14.29±2.8	49.45±4.5
Professional	16.6±3.6	17.45±3.5	13.78±2.7	47.85±5.5
Self-employed	16.54±5.3	17.76±3.5	12.41±2.8	46.7±5.9

Discussion

The present study was conducted to assess the percentage of people assuming the risk of heart disease and association of it with demographic variables. More than half of the respondents assumed themselves at the risk of heart disease in coming future, with an mean score total risk (49out of 80). Researchers have indicated that though knowledge may be present but individuals could be ignorant of their own perception and to some degree of the itinerary of the disease [14]. More family oriented programmes and initiatives to deal with the risk within the working environment (through teaching methods, camps, home visit, poster, etc) should be included to decline the status of disease among adults. As indicated in previous studies women's have failed to recognize the significance of risk factors and symptoms, they even refuted the existence of any disease following diagnosis and treatment [15], Findings also designate that there is a gap between the craving for knowledge and the aptitude to access and absorb information in key areas concerning CHD and personal health behaviours. Thus it is very important to enhance the awareness worldwide and reduce the gap between perception and individual characteristics.

The results indicated a strong and significant association with gender similar to the findings by [16], because the age group is of 20-40 years, an age group where people perceive their risk most similar to the study where 43.6% individuals agreed they were at risk of CVD [17]. Gender having a marginal association with total risk proves that even though men and women are at similar risk, women perceive risk more (49.05±4.5) than men similar as indicated in table no.4 to the similar findings by [18]. Research findings indicate that type of family had no association

with risk perception, in contrast to the study conducted by [19] where individuals living alone (Table no-4) perceived more risk. Employment had a significant association with risk perception thus such individuals need to enhance their ability to change the behaviour, in out study retired individuals perceived more risk than other counterparts (52±3.7).Further studies that include important variables such as knowledge, attitude and practices of CVD need to investigate further its association with risk perception as the concept of enhanced knowledge directly on risk factors modification has been emphasized in a lot of studies [20] as understanding your own risk is important for making further behavioural changes and improving their perception towards heart disease

Conclusion

This study assessed the risk perception of early adults in lucknow city with heart disease and its association with demographic variables. Adults perceived themselves at the risk of heart disease. Age and employment was associated with higher perception of risk of CVD with marginal association with gender. There was no significant association between perception of risk of CVD and type of family. Women's, individuals living alone and in step families, individuals in age group (30-35), and retired individuals perceived the risk most.

Our data indicates that educational intervention is needed among adults to enhance their awareness and reduce their risk perception. The information gained from this present study will help to further implement policies to combat the health of people who are at the risk of developing CVD or are already suffering from.

Acknowledgement

Special mention goes to the respondents who took time to complete this survey along **with** Dr. Rakesh Pradhan Chief Medical Officer, BBAU Lucknow for providing all the needed help throughout the study.

References

1. World Health Organization. Cardiovascular Diseases fact sheet. Department of Non-communicable Diseases and Environmental. *WHO.* 2015. Retrieved 05/07/2016
2. Erikson, Erik H. Childhood and Society. *Penguin.*1975,pp-151-155.
3. Hart P. Women's perceptions of coronary heart disease: an integrative review. *Journal of Cardiovascular Nursing* 2005; 20:170-176.
4. WHO Fact Sheet. (2010-2011). Developed under WHO collaborative centres at WHO community Centre Mumbai AIIMS New Delhi, Madras Diabetes Research Foundation, Chennai Department of Pulmonary Medicine, PGIMER Chandigarh, Tata Memorial Hospital Mumbai, and Institute of Palliative cares Kozhikode, centre for chronic disease control and Department of Neurology at Christian Medical College Ludhiana. From *http://www.searo.who.int/india/topics /cardiovasculardiseases/CVD_fact_sheet.pdf* (Retrieved 06/08/2016)
5. World Health Organization. The World Health Report 2002. Reducing Risk, Promoting Healthy Life. Geneva, Switzerland. From *http://www.who.int/whr/ 2002/en/. WHO* 2002. (Retrieved 05/07/2016).
6. Mahmood SE, Bhardwaj P, Srivastava JP, Mathur KP, Zaidi ZH and Shaifali I, 2012. Sociodemographic risk factors of cardiovascular disease in rural Lucknow. *International Journal of Medicine and Public Health,* 2012; 2(1):56-61.
7. Armitage CJ and Conner M. Social cognition models and health behaviour: A structured review. *Psychology and health,* 2000; 15(2):173-189.
8. Joshi P, Idris MZ, Saran RK, Natu SM. A study of coronary heart disease and the associated risk factors in Lucknow district, India. *Int J Biol Med Res.* 2013; 4(1): 2966-2972
9. Tod AM, Read C, Lacey A and Abbott J. Barriers to uptake of services for coronary heart disease: qualitative study. *BMJ,* 2001; 323(7306):214.
10. Lisk CJ and Grau L. Perceptions of women living with coronary heart disease: a pilot investigation. *Women & health,* 1999; 29(1): 31-46. From *http://www.tandfonline.com/doi/abs/10.1300/J013v 29n01_03* (Retrieved 30/09/2016)
11. Cioe PA, Crawford SL and Stein MD. Cardiovascular risk-factor knowledge and risk perception among HIV-infected adults. *Journal of the Association of Nurses in AIDS Care,* 2014; 25(1):60-69.
12. Oli N, Vaidya A, Subedi M and Krettek A. Experiences and perceptions about cause and prevention of cardiovascular disease among people with cardio metabolic conditions: findings of in-depth interviews from a peri-urban Nepalese community. *Global health action,* 2014; 7.
13. Ammouri AA and Neuberger G. The perception of risk of heart disease scale: Development and psychometric analysis. *Journal of nursing measurement,* 2008; 16(2):83-97.
14. Zerwic JJ, King KB and Wlasowicz GS. Perceptions of patients with cardiovascular disease about the causes of coronary artery disease Heart &

Lung: *The Journal of Acute and Critical Care,* 1997; 26(2): 92-98.
15. Lisk CJ and Grau L. Perceptions of women living with coronary heart disease: a pilot investigation. *Women & health,* 1999; 29(1):31-46. From *http://www.tandfonline.com/doi/abs/10.1300/J013v29n01_03* (Retrieved 30/09/2016)
16. Mosca L, Mochari H, Christian A, Berra K, Taubert K, Mills T, Burdick KA and Simpson SL. National study of women's awareness, preventive action, and barriers to cardiovascular health. *Circulation,* 2006; 113(4):525-534.
17. Winham DM and Jones KM. Knowledge of young African American adults about heart disease: a cross-sectional survey. *BMC Public Health,* 2011; 11(1):1.
18. Homko CJ, Santamore WP, Zamora L, Shirk G, Gaughan J, Cross R, Kashem A, Petersen S and Bove AA. Cardiovascular disease knowledge and risk perception among underserved individuals at increased risk of cardiovascular disease. *Journal of Cardiovascular Nursing,* 2008; 23(4):332-337.
19. Oertelt-Prigione S, Seeland U, Kendel F, Rücke M, Flöel A, Gaissmaier W, Heim C, Schnabel R, Stangl V and Regitz-Zagrosek V. Cardiovascular risk factor distribution and subjective risk estimation in urban women -The BEFRI Study: a randomized cross-sectional study. BMC medicine, 2015; 13(1):1.
20. Crouch R and Wilson A. Are Australian rural women aware of coronary heart disease?. *International Journal of Nursing Practice,* 2010; 16(3):295-300.

*All correspondences to: Mr. Bhawana Dayal, Senior Research Fellow, 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. Email: bhawana3326@gmail.com