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RESEARCH ARTICLE

ASSESSMENT OF KNOWLEDGE AND PERCEPTION ON RISK FOR CARDIOVASCULAR DISEASES

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ABSTRACT

Introduction: Cardiovascular diseases are a group of disorders of the heart and blood vessels. Cardiovascular diseases are the leading cause of death in India, and its contribution to mortality is rising. According to WHO, most cardiovascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet, obesity, physical inactivity and harmful use of alcohol using population wide strategies and for successful prevention of cardiovascular diseases, knowledge is an important pre requisite. Hence this study aimed to assess knowledge and perception on risk for cardiovascular diseases among the ministerial staffs. **Materials and Methods:** A cross sectional study was conducted among ministerial staffs working in various departments (Administrative section, academic section and clinical departments) of JIPMER, Puducherry. 263 ministerial staffs were selected by non-probability convenience sampling technique. The data was collected by using modified structured questionnaire. **Results:** The study showed that majority 53.6% had moderate level of knowledge and most of them 87.5% had increased perception on risk for cardiovascular disease. There was no correlation between knowledge and perception. There was an association between levels of knowledge with family history of cardiovascular diseases and between level of perception with smoking status & family history of cardiovascular disease at $p<0.05$. **Conclusion:** The above findings reveal the importance of the need for implementation of awareness on cardio vascular risk factors and disease.

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INTRODUCTION

Cardiovascular diseases (CVDs) are common disorders which affect the heart and blood vessels and they include coronary heart disease, cerebrovascular disease and peripheral arterial disease (World health Organization, 2017). The global burden of cardiovascular disease (CVD) has risen to large proportions. It is the primary cause of morbidity and mortality all over the world (Alwan, 2011). In 2013 there were > 54 million deaths (95% uncertainty interval [UI], 53.6–56.3million) globally and 32% of these deaths, or 17 million (95% UI, 16.5–18.1 million), were attributable to CVD (GBD, 2013). Cardiovascular diseases account for most non communicable disease deaths (World Health Organization, 2017). In India with the turn of the century, cardiovascular diseases (CVDs) have become the leading cause of mortality (Srinath, 2005). In comparison with the people of European ancestry, CVD affects Indians earlier and in their most productive midlife years (Joshi et al., 2007; Xavier et al., 2008). In addition, case fatality attributable to CVD in low-income countries, including India, appears to be much higher than in middle- and high-income countries (*Yusuf et al., 2014;* Prabhakaran et al., 2005). The World Health Organization (WHO) has estimated that, India would lose $237 billion from the loss of productivity with the current burden of CVD and spending on health care over a 10-year period (2005–2015). (Global Atlas on Cardiovascular Disease Prevention and Control, 2011). The major non-modifiable risk factors for CVDs in Indian population include: advancing age, heredity factors family history, gender and ethnicity. The major modifiable risk factors for CVDs in Indian population includes the following modifiable cardio metabolic risk factors (hypertension, dyslipidemia, diabetes mellitus, obesity) and modifiable lifestyle risk factors (smoking, less physical activity, nutrition, low social economic status) (Lucero, 2014). The incidence of CVD is increasing every day and 25% of all mortality is due to coronary artery disease. Population surveys from India, reported that prevalence of CVD may increase 9-fold and expected to cause doubling of deaths due to CVD by 2015 (Lohia, 2008-09). The proportion of deaths attributable to CVD rises rapidly for women after the age of 70, surpassing the proportion among men. This trend is driven predominantly by stroke deaths and explains the slightly higher proportion of deaths attributable to CVD for women (Roth, 2015). According to WHO most cardiovascular diseases can be prevented by modifying behavioral risk factors such as tobacco

use, diet, weight, physical inactivity and alcoholism using population-wide strategies (World health Organization, 2017). Risk factor alteration can help minimize clinical events and deaths in people with recognized CVD as well as in those who are at high risk due to possessing one or more risk factors. For successful prevention of CVD, knowledge is an important prerequisite (Alwan, 2011). So this study aimed to assess the knowledge and perception among the ministerial staffs. Cardiovascular disease (CVD) is the leading cause of death in India, and its contribution to mortality is rising; deaths due to CVDs are expected to double between1985–2015. Cardiovascular mortality in Asian Indian population is likely to climb up 103% in men and 90% in women by 2015. In fact, CHD has been predicted to rank first among the causes of death in Indian population by 2015 (Ezzati, 2002). The growth of cardiovascular diseases in India has been particularly pronounced in urban areas but many vascular deaths also occur in rural regions and this is still where the majority of the population lives. While there is some limited information about the causes and management of cardiovascular disease in urban regions, corresponding data for rural regions is scant (Gupta, 1996; Mohan, 2001). Cardiovascular diseases have assumed epidemic proportions in India as well. According to the World Health Report 2002, cardiovascular diseases (CVDs) will be the largest cause of death and disability in India by 2020. According to the World Health Report of 2002, deaths due to CHD in India rose from 1.17 million in 1991 to 1.59 million in 2000 and 2.03 million in 2010 (World Health Organization, 2002).

A total of nearly 64 million cases of CVD are likely in the year 2015, of which nearly 61 million would be CHD cases (the remaining would include stroke, rheumatic heart disease and congenital heart diseases). Deaths from this group of diseases are likely to amount to be a staggering 3.4 million (Burden of Disease in India, 2005). Cardiovascular disease (CVD) is one of the most preventable cause of death in the world, due to the fact that the majority of its risk factors are preventable or controllable, such as hypertension, dyslipidemia, diabetes, and obesity, and smoking, lack of physical activity, stress and unhealthy dietary practices. The social and environmental causes of CHD and stroke are well recognized, and enhanced population-based prevention programs could result in a significant decrease in CVD morbidity and mortality (Pearson, 2013). Knowledge about CVD and its modifiable risk factors is a vital pre-requisite to change the individuals' health attitudes, behaviors and lifestyle practices (Becker, 1977; Ford, 1991). [21]Hence it is essential for the nurses to find the existing knowledge and perception on risk for CVD in order to create awareness and reducing the risk for developing CVD.

Aswin K et al had conducted a study on cardiovascular disease risk factor profiling of Group C employees in JIPMER, Puducherry and the study findings concluded that the group C employees of the tertiary care hospital in south India have high prevalence of cardiovascular risk factors which might put them at the risk of increased cardiovascular morbidity and mortality in near future. There is need to take measures to promote healthy lifestyle, regular screening for NCDs and its risk factors, and appropriate management of the diseased hospital staff population. Policy measures that create conducive environments for quitting tobacco, engaging in physical activity, and consuming healthy diets are necessary to promote behavioral change, which will benefit this working population. The study has relevance to all primary care physicians; first to screen and adopt appropriate methods of lifestyle modification among the staffs and second to carry out screening program for risk stratification in different settings as proposed under settings-based approach by World Health organization for prevention and control of non-communicable diseases (Aswin, 2014).

METHODOLOGY

Research approach: Quantitative approach

Research design: Cross sectional descriptive survey design
Setting: Administrative, Academic block and Clinical departments JIPMER, Puducherry.
Population: All ministerial staffs working in Administrative, Academic block and Clinical department at JIPMER
Sample size and technique: 263 ministerial staffs & Non probability convenience sampling technique

Tool for Data collection

- Assessment of socio-demographic data
- **Knowledge:** Modified Heart disease fact questionnaire (HRFQ)
- **Perception:** Modified Perception of Risk for Heart Disease scale (PRHDS)

Description of Research tools: Sociodemographic – proforma consisted of age, gender, marital status, education, department of work (present), living environment, history of co-morbidities (self-reported), alcoholic status and family history of cardiovascular diseases. Modified Heart Disease Fact Questionnaire" (HDFQ) (Cioe, 2014), a 20 item questionnaire was used for assessing the level of knowledge on risk for cardiovascular diseases. Modified Perception of Risk for Heart Disease Scale" (PHRDS) (Cioe et al., 2014), a 4 point Likert scale (strongly disagree, disagree, agree and strongly disagree) with 15 items, was used for assessing the level of perception of risk for cardio vascular diseases. The items were further classified as dread risk, risk and unknown risk. The higher score on the PRHDS sub scales indicate higher perception of risk for cardiovascular diseases.

Data Analysis: Data collected from the subjects were transformed into excel master sheet and analyzed using statistical package for social sciences (SPSS) version-20. Descriptive (frequency and percentage) and inferential statistics (Karl Pearson correlation coefficient &chi-square test) were used in the study. All statistical analysis was carried out at a 5% level of significance.

Ethical Clearance: Permission was obtained from the Institute (JIPMER) Ethical Committee, Human studies. Informed consent was obtained from every participant after a brief explanation regarding the study by the researchers. Confidentiality was maintained during the data collection.

RESULTS AND DISCUSSION

The study results showed that majority of the ministerial staffs of about 122 (46.4%) were in the age group of 30-39 years, 157(59.7%) were males, 203(77.2%) were married, 130(49.4%) were under graduation, 135(51.3%) were administrative section ministerial staffs, 242(92%) were living

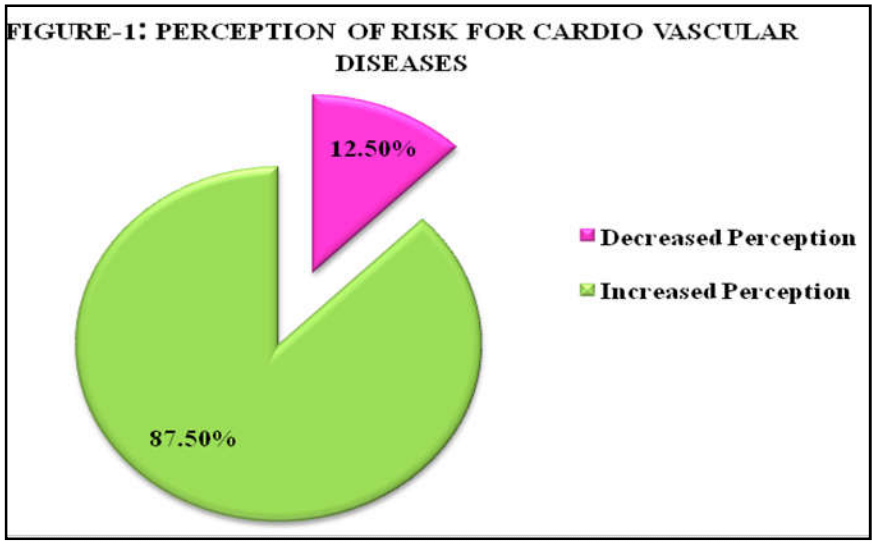
Table 1. Knowledge on risk for cardiovascular diseases among the ministerial staffs

Level of Knowledge	frequency (n)	percentage (%)	mean & range	standard deviation
Inadequate knowledge (<10 score - less than 50%)	28	10.6	14.003 & 6-20	3.14
Moderately Adequate knowledge {(10-15 score)–(50%-75%)}	141	53.6		
Adequate knowledge (>15 score - more than 75%)	94	35.8		

Table 2. Perception (domain wise) of risk for cardiovascular diseases

N=263

LEVEL OF PERCEPTION	DREAD RISK		RISK		UNKNOWN RISK	
	N (%)	MEAN & S.D	N (%)	MEAN & S.D	N (%)	MEAN & S.D
DECREASED PERCEPTION	157 (59.7)	8.197 2.477	49 (18.6)	10.110 2.102	36 (13.7)	18.11 3.69
INCREASED PERCEPTION	106 (40.3)		214 (81.4)		227 (86.3)	



with the family, 191(72.6%) had no history of co-morbidities, 237(90.1%) were non-smoker, 215(81.7%) were non-alcoholic and 210(79.8%) have no family history of cardiovascular diseases. Analysis revealed that there is no significant correlation between level of knowledge and perception of risk for cardiovascular disease. Association between the level of knowledge on risk for cardiovascular diseases found that family history of cardiovascular diseases had significant association at the level of $p< 0.05$ and the levels of perception of risk for cardiovascular diseases had significant association with smoking status at of $p<0.05$and the family history of cardiovascular diseases at $p< 0.01$.

Among over all ministerial staff majority 141(53.6%) had moderately adequate knowledge with mean knowledge score of 14.003 and standard deviation 3.14. This indicated that the ministerial staffs still need more awareness about the risk for cardiovascular diseases and findings were consistent with the study conducted by (Awad, 2014) to evaluate the public knowledge of cardiovascular diseases and risk factors in Kuwait using a pretested self-administered questionnaire on sample of 900 randomly selected Kuwaiti individuals. Respondent's knowledge regarding the CVD risk factors was moderate. Among them 6.6% did not know any CVD risk factor, whereas 13.2% indicated one to four, 32.0% five to seven, and 48.2% identified eight or nine risk factors. Among ministerial staffs, majority 230(87.5%) had increased perception of risk for cardiovascular diseases and 33 (12.5%) had increased perception of risk for cardio vascular disease with mean score of 36.39 (60.65%) and standard deviation 5.563. The above findings were consistent with the study done (Frijling, 2004) to assess the perceptions of cardiovascular disease risk among 1557 patients with the hypertension / diabetes revealed majority of them showed inadequate perceptions of their absolute risk such as 363 (23.3%) did not provide any risk estimates and remaining 1194 patients tended to overestimate their risk. A cross sectional study conducted (Dieu-My, 2017), to assess the knowledge, perception of cardiovascular risk factors and to screen for cardiovascular risks among college students. The study shown that college students were knowledgeable about cardiovascular risk factors; their perception of cardiovascular disease risk was low. The analysis done using Karl Pearson Correlation revealed that there was no significant correlation, between the knowledge and perception on risk for cardiovascular diseases among the ministerial staffs, which was consistent with the a prospective observational cohort, cross sectional study done (Cioe, 2014) to assess the cardiovascular risk factor knowledge, risk perception and actual risk in HIV- infected patients using Framingham Risk score (FRS), Heart disease Fact Questionnaire (HDFQ), Perception of risk of Heart Disease Scale (PRHDS). This study showed the risk factor knowledge was not predictive of perceived risk ($F (1117=0.130, p>0.05$). The analysis revealed that there was association between the family history of cardiovascular diseases and level of knowledge on risk for cardiovascular diseases at the level of significance of $p<0.05$ which was consistent with a cross sectional study conducted by Mukattash (2012) to assess the public knowledge and awareness of cardiovascular disease and its risk factors among 1000 Jordanians revealed the knowledge

was significantly associated with level of education, eating healthy diet and family history of cardiovascular diseases. But a telephone survey study conducted by Mosca (2000) to assess the awareness, perception and knowledge of heart disease risk and prevention among women in the united states revealed age influence the knowledge level. There was association between the smoking status and the level of perception of risk for cardiovascular diseases at the level of significance of $p<0.05$ and there was association between the family history of cardiovascular diseases and the level of perception of risk for cardiovascular diseases at the level of significance of $p<0.01$ which was controversial with the analysis done by Alwan[29] to assess perception of cardiovascular risk and comparison with actual cardiovascular risk revealed the level of perception was strongly associated with socioeconomic status. The findings were also controversial with the study conducted by Homko (Homko, 2008) to assess the cardiovascular disease knowledge and risk perception among underserved individuals at increased risk of cardiovascular disease revealed the knowledge level influenced by gender. In the study women perceived their risk to be significantly higher than that of their male counterparts.

Conclusion

Cardio vascular disease is most common non communicable disease contributes for the higher mortality rates in developing country like India which could be prevented to a great extent if the behavioral risk factors are modified. Hence Study on assessment of knowledge on risk factors of cardio vascular disease and individual's perception on their risk for cardio vascular disease will create awareness and motivation to seek medical help which will further enhance screening and early initiation of treatment for cardio vascular disease and cardiac rehabilitation.

Conflict of Interest: I declare that there is no conflict of interest present in the study.

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