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Knowledge and awareness of cardiovascular risk factors among young adults

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ABSTRACT

Cardiovascular diseases (CVD) are becoming a major cause of death worldwide. Understanding the risk factors for CVD could provide important perception towards the etiology, course, prevention, and treatment for this key health problem. Aim of the survey was to create awareness on the cardiovascular risk factors among young adults. A self-administrated questionnaire was prepared and circulated via an online platform. The data were analysed and the results represented as a bar graph. The data were analysed with SPSS software (SPSS). In this survey, about 52% of the young adults were aware of cardiovascular risk factors, about 57.4% of subjects agreed that smoking is a risk factor of cardiovascular disease, but 42% were not aware of it. 65.3% are aware that elevated blood pressure is also a risk factor for CVD. 56.4% knew that obesity increases a person's risk of cardiovascular disease, but 44% did not agree with that. The survey concluded that there was moderate awareness among young adults about the risk factors of cardiovascular disease, and hence more health awareness should be created for common cardiovascular diseases.

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INTRODUCTION

Cardiovascular disorder (CVD) is a collection of disorders influencing the heart in blood vessels, and it involves coronary artery disease (CAD) such as angina and myocardial infarction. Other CVDs involve stroke, cardiac failure, hypertension heart disease, cardiomyopathy, congenital heart disease, irregular heart rhythms, valvular heart disease and rheumatic heart disease (Bucholz *et al.*, 2018). It is well known that CVD risk factor in young population is associated with an elevated risk of death (Lynch *et al.*, 2006). In India, CVDs are the leading explanation for death. At the same time in terms of disease burden, CVD holds the third place while infectious and parasitic diseases and unintentional injuries hold the first two places. In India, deaths due to CVDs increases at a rapid pace. During 1990 the death due to CVD was 1,17 million, which was increased to 1,59 million, while in 2010, it was 2,03 million (McGurnaghan *et al.*, 2019). The most significant step in strengthening cardiovascular disease prevention is to turn the behaviour into an

entrenched lifestyle such a change would be more efficient and cost-effective. If the risk factor is well known, the identification of individuals with these factors can prevent significant deaths by complementary preventive programs (Cao *et al.*, 2020). CADs are associated with a number of risk factors, which can be modifiable and nonmodifiable. The modifiable risk factors include high BP; high levels of blood cholesterol; smoking; diabetes; overweight or obesity; lack of physical activity; unhealthy diet and stress. Those that can't be regulated (conventional or nonmodifiable) include age (increase in age is associated with increased risk of CAD); sex (men are at high risk than women); race background and family history (Hajar, 2016). Patients with chronic kidney disease (CKD) often develop cardiovascular disease (VD), and retinopathy (Grunwald *et al.*, 2020). During the advancement of cardiovascular disease, the molecular myocardial systems (e.g., a proteome) undertake multiple and distinct profiling of directed animal types of social disease systems changes (Chung *et al.*, 2020). Most recently, a study stated that Type 1 diabetes (T1D) and obesity are closely correlated with the risk of CVD and may begin in the pediatric era (Zucchini *et al.*, 2020). In a previous study, the awareness of CVD risk and barriers to prevent were evaluated among American women (Mochari-Greenberger *et al.*, 2010). In the study by Chinju George, the knowledge on risks of CVD was assessed among people above 30 years of age (George and Andhuvan, 2014).

Physical inactivity also contributes to obesity, which increases the risk for cardiovascular as well as various other deadly disorders like cancer, diabetes etc. (Shukri, 2016). Thyroid cancer is the most widespread endocrine malignant cancer (Ma *et al.*, 2019). Glioma is the prime cause of cancer in adolescent people, and it accounts for about 80% of all malignant tumours (Li *et al.*, 2020). Naturally occurring medicinal plants can inhibit the growth of various cancers (Rengasamy *et al.*, 2018; Gan *et al.*, 2019). Adiponectin is considered to be one of the key factors for obesity, and it is believed to be an important link of the connection between obesity and breast cancer (Mohan *et al.*, 2015). Physical activity increases the antioxidant status, which is potential to reduce the risk of deadly disorders (Ramya, 2018). The present study is aimed to assess and create awareness of the risk factors associated with CVD among young adults.

MATERIALS AND METHODS

A self-administered questionnaire was designed based on the risk factor of cardiovascular disease, and the questionnaire was distributed through an online google form among young people. In light of the responses, the factual examination was performed. The analysis of the results was done using SPSS software and represented as a bar graph. The Pearson Chi-square analysis was also done in comparison with the age group of the respondents.

RESULTS AND DISCUSSION

The results of the present survey are represented in the following bar charts.

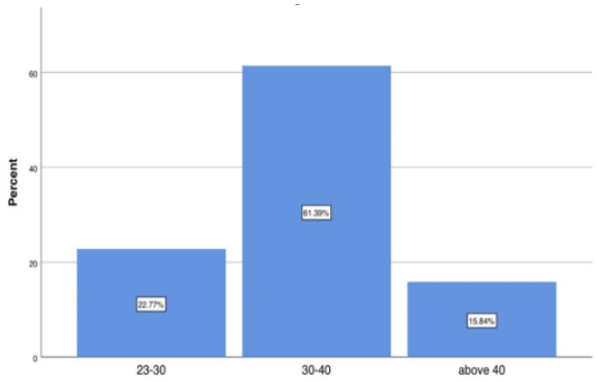

Figure 1: Bar graph showing the age distribution of the respondents

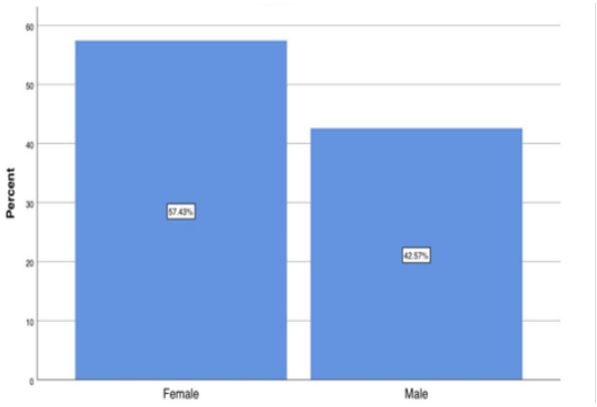

Figure 2: Bar graph on the gender distribution of the respondents

The questionnaire was attended by 101 participants out of which 61.39% of the participants were aged 30-40 years, 22.77% were about 23-30 years, as shown in Figure 1. Figure 2 depicts that about 57.43% of females and 42.57% of males participated in this survey. A study revealed that the risk factor score was high in males compared to females (Henry, 2005). In Figure 3, it depicts that 57.43% are aware that smoking is a major CVD risk factor, but 42.57% were not aware of it. In Figure 4, it depicts that 65% were aware that high blood pressure is a key risk factor for CVD. Nearly 47% of CVD

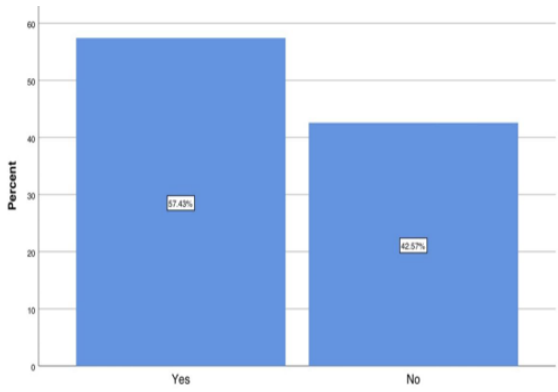

Figure 3: Bar graph showing the percentage distribution of awareness on smoking as a risk factor associated with heart disease

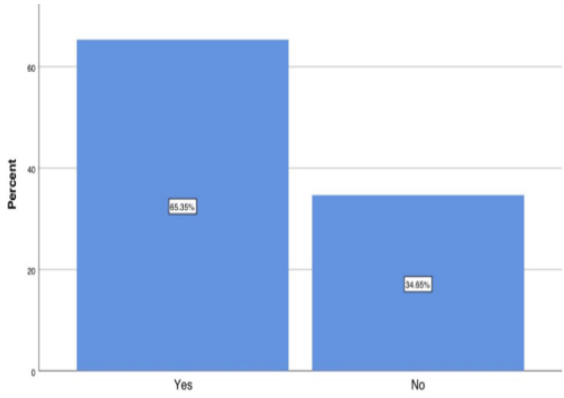

Figure 4: Bar graph showing the percentage distribution of awareness on high blood pressureas a risk factor for heart disease

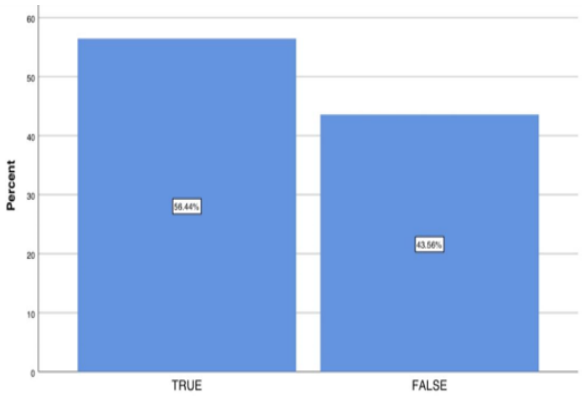

Figure 5: Bar chart showing the percentage distribution of awareness on obesity as a CVD risk factor

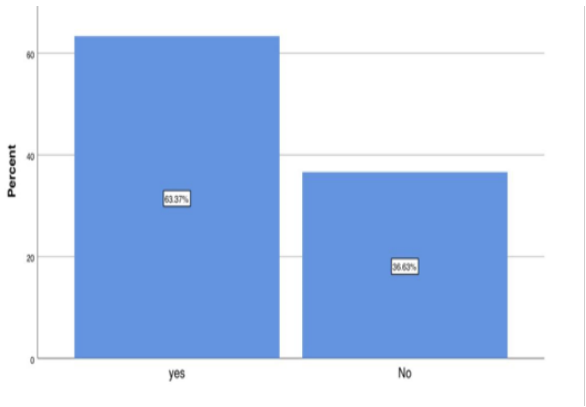

Figure 6: Bar chart showing the percentage distribution of awareness on family history as a key CVD risk factor

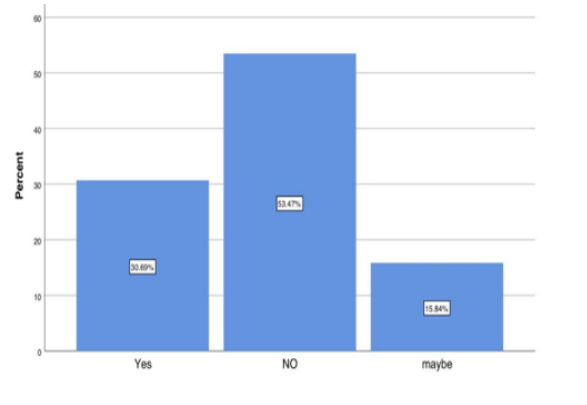

Figure 7: Bar chart showing the percentage distribution of awareness on age as a CVD risk factor

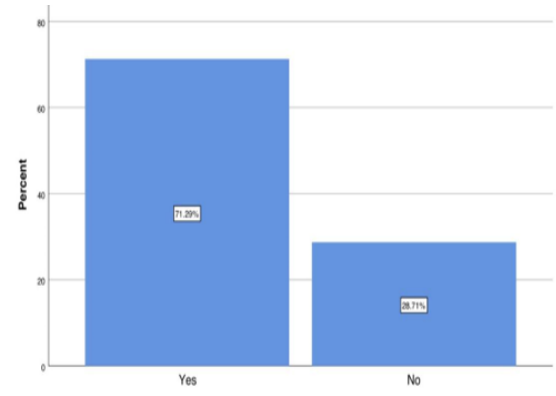

Figure 8: Bar chart showing the percentage distribution of awareness on diabetes as a CVD risk factor

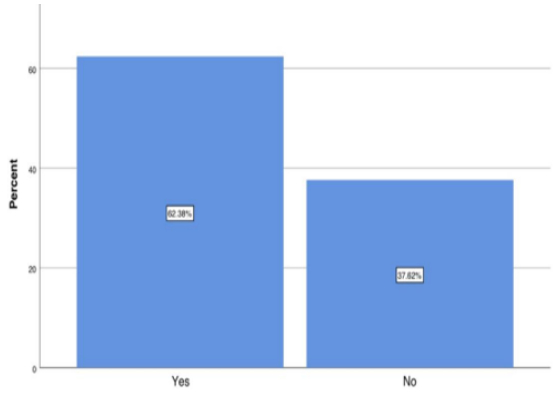

Figure 9: Bar chart showing the percentage distribution of awareness on physical activity canprevent CVD

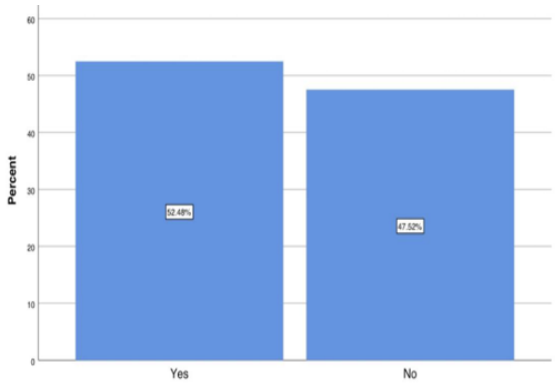

Figure 10: Bar chart showing percentage distribution of awareness on the symptoms associated with heart disease as chest pain and shortness of breath

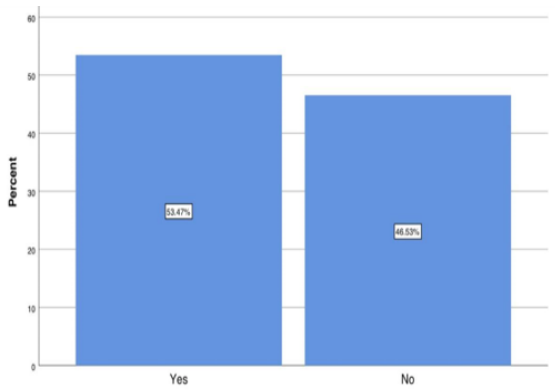

Figure 11: Bar chart showing the percentage distribution of awareness on healthy lifestyle practices to prevent heart diseases

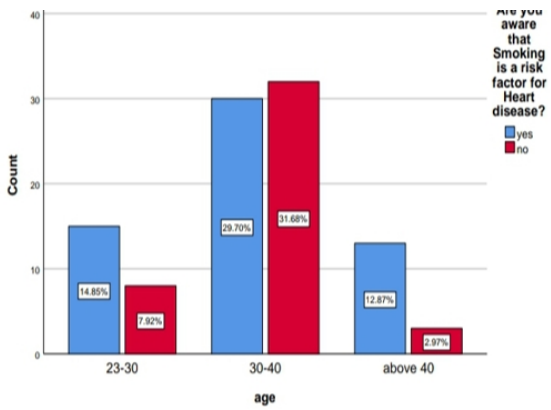

Figure 12: Bar graph shows the association of age group with an awareness of smoking as a CVD risk factor

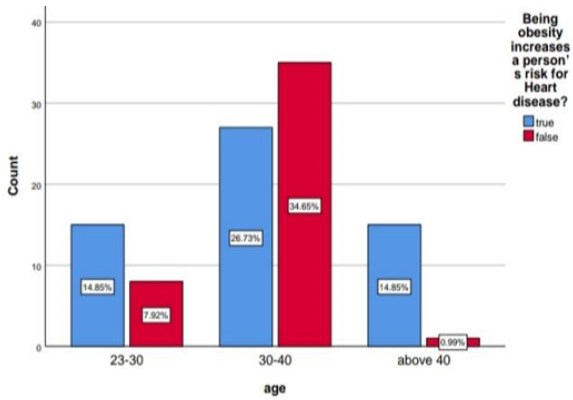

Figure 13: Bar graph shows the association of age group with awareness about obesity as a CVD risk factor

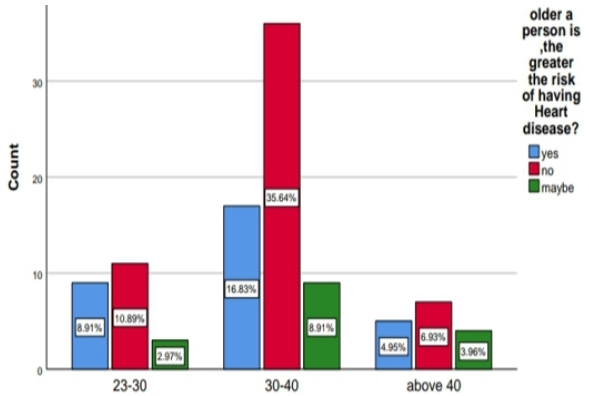

Figure 14: Bar graph shows the association of age group with awareness on age as a risk factor for heart disease.

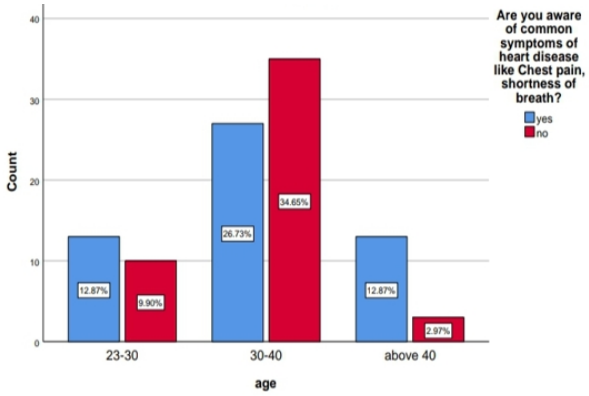

Figure 15: Bar graph shows the association of age groups with the awareness of common symptomsassociated with heart disease as chest pain and shortness of breath

globally are due to elevated BP (Wu *et al.*, 2015). Figure 5 depicts that 63% of participants agreed obesity increases the risk of CVD. A similar study was found where it concluded that obesity was more widespread (56%) and in the North Indian sample (27 %) (Chaturvedi *et al.*, 2008; Wu *et al.*, 2015). Figure 6 depicts that 63.3% agreed with the fact that persons with a family history of CVD are a major risk for CVD, but 36% did not agree with that. Relevant to that study, 67% has agreed that a person with family history has higher chances of getting CVD (Pierpont and Moller, 2012). Figure 7 shows that 53% are not aware that older people have a higher risk for CVD rest were not aware of it; it shows a lack of awareness among the study respondents. A similar study reported that only a few participants were aware that increased age is associated with a high risk of CVD (George and Andhuvan, 2014). Figure 8 shows 71% of subjects were aware that men with diabetes are more prone to CVD than women with diabetes, and very few are not aware of it.

Similarly Henry (2005) found that most of the population accepted that men with diabetes have more chance of getting CVD. Figure 9 depicts that 62.3% of subjects were aware that those who are regular physical activity are less prone to CVD, but 37.62% were not aware of it. Relevant to this, a study was found where more population supported that regular physical activity will decrease the chance of CVD (Valle *et al.*, 2004). Figure 10 shows that 52.48% of subjects knew about common symptoms of cardiovascular disease, but 47.52% did not know about it. Comparatively, it was found that 95% of participants were aware of the symptoms of heart disease (George and Andhuvan, 2014). Figure 11 shows that 52.48 % were aware of risk factors of cardiovascular disease, but 47.52% were not aware of it. An opposing study was found where 65% of the respondents were not aware of any risk factors (Lynch *et al.*, 2006). Figure 12 shows that 53.47% of subjects were aware that a healthy lifestyle and diet leads to less cardiovascular disease, whereas 46% of subjects were not aware of it. Relevant to this study, the prevalence rate for hypertension was 49% for males and 51.3% for females residing in urban areas and 55.3% for males and 59.6% for females residing in rural areas. The awareness among the age group of 30-40 years was better than the participants of other age groups (Pearson's Chi-square value-6.357, DF-2, p-value -0.042 <0.05). The risk of hypertension was higher in the urban area population with a smoking habit, inappropriate salt intake, sedentary lifestyle, obesity or a diagnosis of hypercholesterolemia (Metintas *et al.*, 2009).

This study reports a statistically significant association of age groups with an awareness of smoking as a CVD risk factor. The study respondents aged 30-40 years were more aware of smoking being a risk factor for CVD (Chi-square test P-value-0.042). The participants aged 30-40 years are having better awareness than the participants of other age groups (Pearson's Chi-square value-2.989, Df-2, p value-0.001<0.05) (Figure 13). This study also reports a statistically significant association of age group with awareness about obesity CVD risk factor. The study respondents aged 30-40 years were more aware of obesity being a risk factor for CVD. (Chi-square test, p-value-0.001 statistically significant) The differences in awareness among the age groups are not statistically significant (Chi-square value-2.446, Df-4, p-value-0.654 >0.05) (Figure 14). There is no association between the age group and the awareness on age as a risk factor for cardiovascular disease (Chi-square test, p-value-0.654). Also, a statistically significant association of age group with awareness about common symptoms of heart disease was noted (Chi-square test, p-value-0.024). The participants aged 30-40 years were more aware of common symptoms of heart disease (Chi-square value-0.798, Df-2, p value-0.024<0.05) (Figure 15).

The use of natural products is used widely nowadays to treat many lifestyle disorders (Menon *et al.*, 2016; Rengasamy *et al.*, 2016). The use of traditional and alternative medicine in various diseases is documented in many studies (Ponnulakshmi *et al.*, 2019; Wu *et al.*, 2019). Previous studies have demonstrated that 4-shogaol from ginger may be a novel anticancer agent (Chen *et al.*, 2019). Garcinol has also shown strong activity against breast cancer and leukemia (Jainu *et al.*, 2018). Bionanotechnology has a pivotal role in the development of novel thera-

pies (Ke *et al.*, 2019; Wang *et al.*, 2019). The awareness of the risk factors of CVD among the young population plays a key role in decreasing the onset of heart diseases among them and also in their future life. This can be attained by leading a healthy lifestyle by managing modifiable risk factors.

CONCLUSION

The study can be concluded that the awareness about the risk factors of CVD among adults of age 30-40 years was more compared to other age groups, and therefore measures to improve awareness is needed which can be imparted by health education as a community initiative.

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The authors declare that there is no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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