



RESEARCH ARTICLE

ASSESSMENT OF NUTRITIONAL STATUS AND IMPARTING EDUCATION OF THE SELECTED SUBJECTS WITH CARDIOVASCULAR DISEASE

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ABSTRACT

Cardiovascular disease is a condition in which it is deals with irregular performance of the heart due to single or several reasons. It is epidemic in India and also one of the major causes of the death of the people. The experiment was carried out to assess the nutritional status of the selected subjects with cardiovascular disease and creation of static website for its management. Area and subjects were selected by the investigator. Nutritional status, Socio economic status, REAP, frequency consumption of common foods, of the selected subjects were assessed and observed. A static nutritional website was created by gathering material from various sources to overcome the problems of the subjects. The website was launched with the help of a programmer. The questionnaire which comprised of 30 questions was framed to assess the nutritional knowledge attitude and practice (KAP) of the selected subjects. Nutrition education was given by using oral posters, catalogues and the created static nutritional website. Before and after valuation KAP of the subjects were done by using questionnaire to assess the progress of the subjects. The mean score  $13 \pm 2.15$  obtained in pre test was increased to  $21 \pm 3.04$  after imparting nutrition education. The gain in nutritional knowledge scores was  $8 \pm 0.63$  and the quantum of improvement was 1.80 times.

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INTRODUCTION

Cardiovascular disease is a leading cause of ill health and death worldwide. High levels of cholesterol in the blood along with chronic inflammation in arterial walls lead to 'plaques' of fatty deposits getting established in blood vessels are growing in size. One of the plaques break open, blood clots can form that block the artery. If a coronary artery gets blocked as a result a heart attack ensues (Hindu, 2015). Cardiovascular diseases account for about 28% of all deaths in India. Roughly 40 million deaths occur annually in India due to cardiovascular diseases. Mortality rates among working-age adults are higher than those in developed countries, contributing to a substantial loss of productive years of life. Coronary heart disease has the highest incidence of all diseases in India, affecting approximately 35.8 million people (Mendis, 2011). An elevated concentration of serum LDL cholesterol is a major risk factor for CHD. In fact, some elevation of LDL cholesterol appears to be necessary for the initiation and progression of atherosclerosis. Comparisons between a diet low in saturated fats, with plenty of fresh fruit and vegetables, and the typical diet of someone living in the developing world show that in the

former there is a 73% reduction in the risk of new major cardiac events (Cohn, 2010). Hypertension nonetheless is a multifactorial disorder, and the mechanistic connections between insulin resistance and hypertension are largely conjectural; even so, evidence for a causal link is growing. When hypertension coexists with overt diabetes, which it commonly does, the risk for CVD, including nephropathy, is doubly increased (Hopkins, 2013). Patients with diabetes who are smokers are doubly at risk (Lerouth, 2013). Although heart disease can occur in different forms, there is a common set of core risk factors that influence whether someone will ultimately be at risk for heart disease or not. We start our discussion of heart disease by describing these common risk factors, and then move on to cover specific conditions. This paper deals with assessment of nutritional status, giving education to subjects with cardiovascular disease and assessment of impact of nutrition education.

MATERIALS AND METHODS

A Total of one hundred and six subjects comprising of eighty eight men and eighteen women with cardiovascular disease from three different private hospitals were selected by the investigator. Nutritional status, Socio economic status, Rapid Eating Assessment of Patients, frequency consumption of

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common foods of the selected subjects were assessed and observed. A static nutritional website was created by gathering material from various sources to overcome the problems of the subjects and normal individuals. The website was launched with the help of a programmer. The questionnaire which comprised of 30 questions was framed to assess the nutritional knowledge attitude and practice (KAP) of the selected subjects. Nutrition education was given by using oral posters, catalogues and the created static nutritional website. Before and after impact of KAP of the subjects were evaluated by using questionnaire to assess the progress of the subjects.

estimated to be currently affected by RHD with a significant number of them requiring repeated hospitalization and, often unaffordable, heart surgery in the next five to 20 years (World heart federation, 2014).50 per cent of subjects were having coronary heart disease which is the highest in rate among all the cardiovascular diseases. In developing countries, rates are predicted to increase by 120% in women and 137% in men from 1990 to 2020. (Maria *et al.*, 2011) Sixty per cent of the world's patients with heart disease, including CHD, are predicted to live in India by 2010 (Mendis, 2011). Table – XVI reveals that 3 per cent of subjects were having Cardiomyopathy and Cerebrovascular disease, 7 per cent of

**Table I. Type of Cardiovascular Disease of Subjects (Multiple Response)**

S.No.	Cardiovascular disease	No	Percentage	t value
1	Coronary heart disease	53	50	
2	Rheumatic heart disease	22	21	
3	Peripheral arterial disease	9	8	
4	Congenital heart disease	7	7	0.83*
5	Cerebro vascular disease	3	3	
6	Hypertensive heart disease	9	8	
7	Cardiomyopathy	3	3	

\*Significant at 1% level

**Table II. Mean Value of Food Intake of the Subjects**

S. No	Food groups	Suggested allowance ICMR*(g)	Actual intake by subjects (adults)	% excess/ deficit
1	Cereals and Millets	300	378	+ 12.6
2	Pulses	60	73	+ 12.1
3	Green Leafy Vegetables	100	81	-19
4	Roots and Tubers	100	78	-22
5	Other Vegetables	100	79	-21
6	Fruits	100	38	-62
7	Milk and Milk Products	300	210	-30
8	Fats and Oils	20	26	+13
9	Sugar and jaggery	20	13	-35

\*ICMR, 2005

**Table II. Mean Value of Food Intake of the Subjects**

S.No	Tests	Scores
1	Pre – test	09 ± 0.71
2	Post – test	19 ± 2.88
3	Gain in scores	10 ± 0.82
4	Quantum of Improvement	1.80 times

## RESULTS AND DISCUSSION

### Type of cardiovascular disease of subjects (Multiple Responses)

Table – I reveals that 3 per cent of subjects were having Cardiomyopathy and Cerebrovascular disease, 7 per cent of subjects were having congenital heart disease. The reported incidence of congenital heart disease is 8-10/1000 live births according to various series from different parts of the world. The prevalence of CHDs in adults was 2.4 per 1000 individuals in this cohort, with atrial septal defect (44.5%) being the most frequent defect. 8 per cent of subjects were having peripheral arterial disease (Fyler, 2010). It is estimated that around one in every five subjects over the age of 60 were affected by the condition to some degree. Men tend to develop the condition more often than women (Emedicine health, 2014). Other 8 per cent of subjects were having hypertensive heart disease. Hypertension or high blood pressure affects at least 1 billion subjects worldwide. Hypertensive heart disease is only one of several diseases attributable to high blood pressure (Reddy, 2010) 21 per cent of subjects were having rheumatic heart disease, At least 15.6 million subjects were

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### Mean value of food intake of the subjects

Table II reveals the details regarding the mean food intake of the selected subjects. The mean food intake was surplus with reference to cereals and millets (+12.6), Pulses (+12.1), Fats and oils (+ 13) for the adults. All the other food items were found to be deficit when compared to RDA. The mean value of the scores obtained by before and after education of the subject is described in the Table III. Table III shows that the improvement of the selected subject's knowledge after imparting the nutrition education. In the post test the subject's score was  $09 \pm 0.71$  and in the post test the scores was  $19 \pm 2.88$ . The quantum of improvement was 1.80 times

### Conclusion

From the present study, it may be concluded that proper education about the disease and healthy diet and lifestyle pattern among people makes better improvement in prevention and management of the cardiovascular disease.

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