Impact of nutrition counselling on knowledge and practice scores of cardiovascular disease subjects

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ABSTRACT

The impact of nutrition counselling was studied on random sample of 30 in the age group of 41-60 years. Pre-exposure knowledge level of respondents regarding disease, role of diet and lifestyle was assessed by pre-structured questionnaire. Nutrition counselling was given to the respondents with the help of flash cards. Impact of nutrition counselling was assessed after 30 days of nutrional counselling (post-exposure knowledge). Majority of subjects belonged to the age group of 41-50 (66.67%) followed by 51-60 years (33.33%). More than half of the subjects had studied up to primary school (56.67%) followed by illiterates (43.33%). The pre-test knowledge counselling showed that about 43.33 per cent of the subjects had low followed by medium and high knowledge scores. About three-fourth of the subjects (74.00%) had the knowledge score between 20-40 per cent. After the counselling majority of the subjects had knowledge score of 80-100 per cent (46.67%). Majority (73.33%) modified their dietary and lifestyle pattern after the diet counselling; majority restricted intake of whole milk and milk products, fried food, butter and ghee. They increased the intake of fruits, vegetables, cereals, pulses, millets, papaya, watermelon, pomegranate and pineapple. They also included flax and fenugreek seeds in their diet. Thus the respondents gained significant knowledge regarding the role of diet in cardiovascular disease after counselling.

Keywords: Nutrition counselling; CVD; knowledge level; lifestyle pattern

INTRODUCTION

Cardiovascular disease (CVD) is the major cause of sudden death among adults throughout the globe. The disease is considered as important public health problem not only in the developed countries but also in developing countries like India with changing lifestyle. World health organization (Anon 1997) predicted that by the year 2020 up to three quarters of deaths in developing countries would result from non-communicable diseases and that coronary heart disease will top the list of killers. It has been found that over 80 per cent of deaths and 85 per cent of disability from CVD occur in low and middle income countries (Reddy 2004). Among these CVD affects Indians with greater frequency and at a younger age than their counterparts in developed countries as well as many other developing countries. In addition to high rates of mortality CVD manifests here almost 10 year earlier on an average than other countries in the world (Gupta 2004).

CVD rates doubled in India due to the dietary changes associated with epidemiological transition from rural sustenance to urban-oriented economy. Current urbanisation rate in India is 35 per cent as compared to 15 per cent in 1950. Rising affluence has modified the dietary pattern characterized by increased consumption of diets rich in fat, sugar and calories which is directly related to heart disease.

Lack of knowledge of the simplest facts of nutrition is at the root of a high proportion of causes of heart diseases. To prevent the increasing problem of CVD in India it is undoubtedly ideal to make public aware of the alarming state of the disease by improving their knowledge level. Nutrition counselling is therefore needed to motivate and create public awareness to preserve healthy traditional lifestyle and adopt healthy dietary and lifestyle choices to reduce most of the modifiable risk factors of heart disease.

METHODOLOGY

The study was carried out during 2014-2015 at 2 hospitals of Hubli and Dharwad cities. About 30 subjects were selected by purposive sampling method. A detailed questionnaire was developed to elicit the information wrt age, gender, education, occupation, family size, family type, area of living and income level of the subjects. Multiple choice questions were developed to assess the knowledge of the subjects pertaining to diet and lifestyle factors of CVD.

Nutrition counselling was done through lectures using flash cards. Fifteen flash cards were developed regarding food for healthy heart. Nutrition counselling was done for about 45 minutes to 1 hour. After one month knowledge scores and dietary practices were assessed by using standard pre-tested questionnaire.

To study the impact of nutrition counselling on knowledge and practices of subjects post-counselling test was done. Scores one and zero were awarded respectively to each correct and wrong answer. Knowledge scores were calculated by the total number of correct answers given by the subjects. Each correct answer was given one mark. The subjects were further classified into low, medium and high knowledge categories based on the formula:

Mean ± (0.425*SD)

Frequency, percentage, mean and standard deviation were used to interprêt the data and subjects were classified based on knowledge level into low, moderate and high categories based on the above formula.

RESULTS and DISCUSSION

Demographic profile of subjects is given in Table 1. Twenty subjects belonged to the age group of 41-50 years (66.67%); about half of the subjects were studied up to primary level (56.67%); majority of subjects had medium size families (80.00%) and belonged to nuclear families (96.67%); lived in urban areas (73.33%); most of them were married (86.67%). Their occupation was mainly business (43.33%). In case of females all were housewives (100.00%). Majority of the subjects belonged to Hindu religion (70.00%); one third of subjects fell in the income range of Rs 20001-25000/month.

Classification of subjects based on the knowledge score before and after the counselling is depicted in Table 2. More number of subjects had 20-40 per cent knowledge score (43.33%) followed by 40-60 per cent (36.67%) and very few had the score of 0-20 per cent (20.00%) before the counselling. However after the intervention majority of the subjects had knowledge score of 80-100 per cent (46.67%), followed by 60-80 per cent (26.67%) and 40-60 per cent (20.00%).

Knowledge level status of subjects before and after the nutrition counselling is depicted in Fig 1. After nutrition education there was shift from low to medium and high knowledge level. Under low score category the number of subjects was shifted from 63.33 to 6.67, under medium knowledge from 36.67 to 50.00 and under high knowledge level from 0.00 to 43.33 per cent.

Majority of the subjects had knowledge score of less than 40 per cent and they belonged to moderate and low knowledge level before conselling. Similarly low knowledge scores have been noted by several investigators (Kaur and Chawla 2006, Barbora et al 2008). Positive improvement in the knowledge score was noted among the subjects after nutrition counselling (Table 2). Similar improvement in the knowledge of the patients has been noted by Venkataramanamma and Khader (2002) who found positive impact of nutrition education on knowledge of fisher women. Puri et al (1984) have also noted positive impact of counselling on nutrition knowledge.

Impact of nutrion counselling on lifestyle behaviours is presented in Table 3. In total 73.33 per cent subjects modified their dietary and lifestyle pattern after the diet counselling. Majority of subjects restricted the intake of whole milk and milk products (56.67%), fried food (30.00%) and butter and ghee consumption (13.33%). Very few restricted salt intake (6.67%); maximum subjects increased the intake of fruits and vegetables (60.00%), cereals, pulses and millets (53.33%), papaya, watermelon, pomegranate and pineapple (40.00%), flax seeds (33.33%) and fenugreek seeds (26.67%) in their diet. Non-vegetarians increased the intake of fish (33.33%) and restricted animal food (6.67%) and egg (3.33%) consumption. Along with dietary changes there was an improvement in the lifestyle practices of the subjects viz regular exercise (43.33%), restricted smoking (6.67%) and alcohol consumption (3.33%).

Table 1. Demographical profile of subjects selected for nutrition counselling study (n= 30)

Parameter	Male (n= 20)		Female (n= 10)		Total	
	Frequency	%	Frequency	%	Frequency	%
Age (years)						
41-50	14	70.00	6	60.00	20	66.67
51-60	6	30.00	4	40.00	10	33.33
Education level						
Illiterates	7	35.00	6	60.00	13	43.33
Primary school	13	65.00	4	40.00	17	56.67
Occupation						
Business	13	65.00	0	0.00	13	43.33
Private	4	20.00	0	0.00	4	13.33
Agriculture	3	15.00	0	0.00	3	10.00
Housewife	0	0.00	10	100.00	10	33.33
Family size (number)						
Small (<4)	5	25.00	0	0.00	5	16.67
Medium (4-6)	15	75.00	9	90.00	24	80.00
Type of family						
Nuclear	20	100.00	9	90.00	29	96.67
Joint	0	0.00	1	10.00	1	3.33
Area of living						
Urban	15	75.00	7	70.00	22	73.33
Rural	5	25.00	3	30.00	8	26.67
Marital status						
Married	20	100.00	6	60.00	26	86.67
Widow/widower	0	0.00	4	40.00	4	13.33
Religion						
Hindu	15	75.00	6	60.00	21	70.00
Muslim	5	25.00	4	40.00	9	30.00
Monthly income (Rs)						
5000-10000	4	20.00	1	10.00	5	16.67
10001-15000	5	25.00	2	20.00	7	23.33
15000-20000	0	0.00	2	20.00	2	6.67
20001-25000	7	35.00	3	30.00	10	33.33
>25000	3	15.00	1	10.00	4	13.33

Table 2. Distribution of subjects based on knowledge score before and after nutrition counselling (n= 30)

Knowledge score (%)	Number of subjects			
	Before		After	
	Frequency	%	Frequency	%
0-20	6	20.00	-	-
20-40	12	43.33	2	6.67
40-60	11	36.67	6	20.00
60-80	-	-	8	26.67
80-100	-	-	14	46.67

CONCLUSION

Nutrition counselling positively improved nutrition knowledge and practices of heart disease subjects. Nutrion counselling based on dietary and lifestyle modification can be used as the basis of prevention and management of heart diseases.

Table 3. Impact of nutrition counselling on lifestyle behaviour (n= 30)

Parameter	Frequency	Percentage
Modification		
Dietary and lifestyle pattern not modified	8	26.67
Modified dietary and lifestyle pattern	22	73.33
Diet		
Increased fruit and vegetable consumption	18	60.00
Increased consumption of cereals, pulses and millets	16	53.33
Increased intake of papaya, watermelon, pomegranate and pineapple	12	40.00
Increased fish intake	10	33.33
Use of flaxseeds in diet	10	33.33
Use of fenugreek seeds in diet	8	26.67
Restricting fried food	9	30.00
Restricting salt	2	6.67
Avoiding whole milk and milk products	17	56.67
Restricting butter and ghee	4	13.33
Restricting animal foods	2	6.67
Restricting egg consumption	1	3.33
Lifestyle		
Regular exercise	13	43.33
Restricting smoking	2	6.67
Restricting alcohol consumption	1	3.33

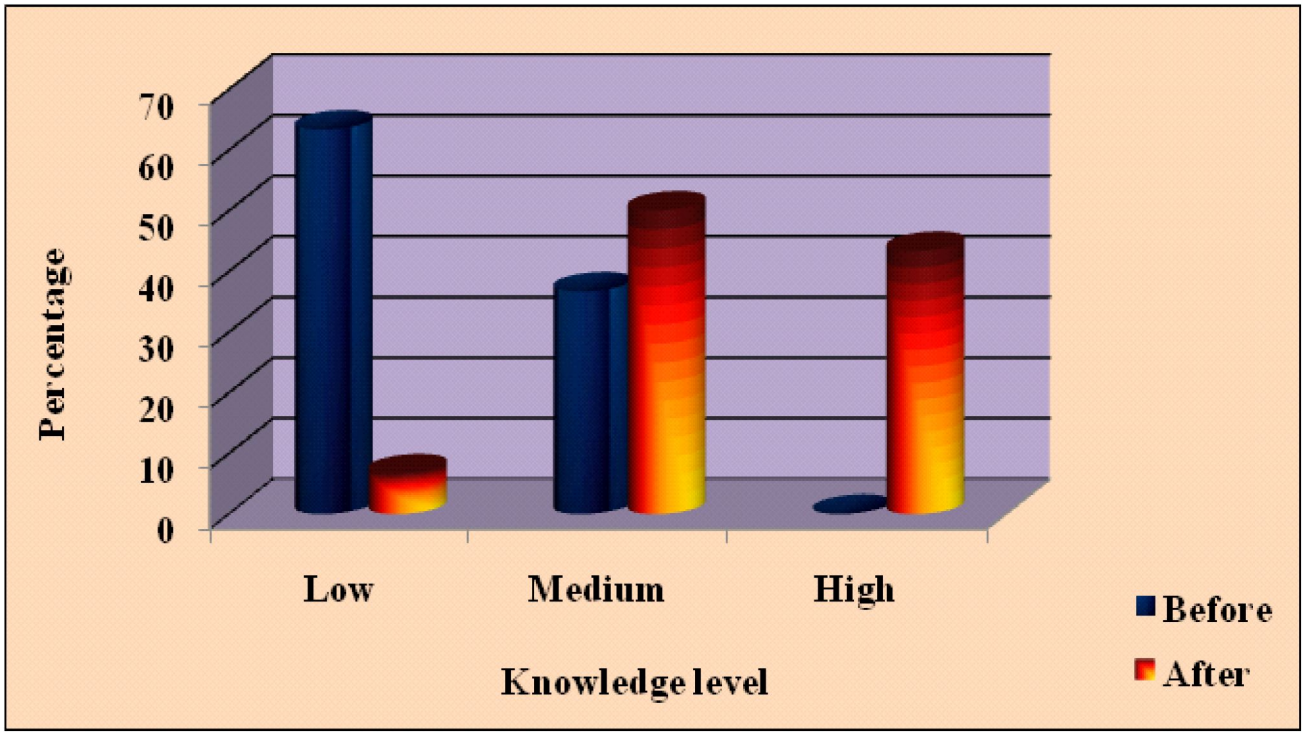

Fig 1. Impact of nutrition counselling on knowledge level of subjects

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