

Impact of Focused Education about Heart Health and Hypercholesterolemia and its Relationship to Diet on the Selected Cardiovascular and Hypercholesterolemic Subjects

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Abstract

Every year, 17.1 million lives are claimed by the global burden of heart disease and stroke, 82 per cent of which are in the developing world and it continues to be the number one killer worldwide. CVD are the major cause of morbidity and mortality with dyslipidemia contributing significantly to atherosclerosis. In the present era, medical intervention for cardiovascular problems is beyond the reach of a common man living in a small town or rural areas. Towards this vein the present research is planned with the following objectives to develop a focused education modules on heart health and hypercholesterolemia and role of lifestyle and diet changes for the prevention of cardiovascular diseases and evaluate the impact of education in the disease prevention. Hence for the present study 30 cardiovascular subjects from the cardiac care clinic and 40 hypercholesterolemic subjects from rural villages through screening process were selected for conducting the focused education. To conduct the education, booklets, pamphlets and computer aided power point preparations were prepared about definition of cardiovascular disease, their types, symptoms and risk factors, various treatments, stress management through exercise and yoga, the causes, signs and symptoms for hypercholesterolemia, medical treatment for hypercholesterolemia, lifestyle changes and necessary dietary modification for hypercholesterolemia in both English and local language Tamil. The selected subjects were assembled in a common place and the same content covered in the booklets and pamphlets were explained to the subjects with simulated video clippings and pictures through computer aided presentations in local language. Finally the developed education modules such as booklet and pamphlets in the local languages were distributed to the subjects for their future use. A special Knowledge, Attitude and Practices interview schedule with scores was designed to test the effect of education on the selected subjects. Results showed statistically significant increase in their knowledge, attitude and practice towards their heart health. Thus, the focused education on heart health strengthened their knowledge, attitude and practices towards leading life with confidence.

Keywords: Dietary Modification, Focused Education, Hypercholesterolemia, Lifestyle Changes

1. Introduction

In the present era, Non-Communicable Diseases (NCDs) threw a great challenge to health care systems, experts and governments and poses to be the underlying cause

for poverty as well as threat to human resources and their physical, social and economic development¹. Non-Communicable Diseases include the — big four — Cardiovascular Diseases (CVD), cancer, diabetes and chronic respiratory diseases. They are responsible for 63

per cent deaths globally in 2008 with more than 80 per cent occurring in developing countries, attributed to poor dietary practices, insufficient physical activity and harmful use of tobacco and alcohol²

CVD rank first among NCDs and contribute to 48 per cent of deaths throughout the world. The factors that increase people's risk of developing these diseases are increased levels of blood pressure, cholesterol, BMI and blood sugar³. According to WHO Report⁴, elevated serum cholesterol is a modifiable risk factor and is associated with an estimated 4.4 million deaths each year and form a major cause for ischemic strokes and heart diseases worldwide.

Combination of lifestyle therapies i.e., enhanced physical activity, dietary modification and therapeutic intervention would help in the treatment and management of dyslipidemia. Nutrition counseling has an important role as part of the treatment for hypercholesterolemic patients. For effective reduction of blood cholesterol levels, dietary advice should continue to emphasize the importance of increasing the intake of dietary fiber and reducing the consumption of high-fat or cholesterol-containing foods^{5,6}.

In the modern era, medical interventions for cardiovascular problems are beyond the reach of a common man living in urban or rural areas. At the same time, timely screening, suitable dietary changes with cardio protective ingredients and life style changes may reduce the risk of cardiovascular problems. Towards this vein in the present research, efforts have been taken to develop the focused education module about heart health, hypercholesterolemia and role of lifestyle and diet changes for the prevention of cardiovascular diseases and evaluate the impact of education in the disease prevention.

2. Methodology

2.1 Selection of Locale

The present study was planned to conduct education both in city and villages. Hence for the conduct of the present study in the city, a cardiac care center located at the heart of Coimbatore city was selected. And to conduct the study in the village, a rural based NGO named Shanti Ashram was approached and among their service villages (40), 1/4th that is 10 villages were selected for the study.

2.2 Selection of Cardiovascular and Hypercholesterolemic Subjects

After obtaining permission from the hospital authorities, investigator approached the outpatients and developed rapport. The investigator was able to identify 30 most co operative cardiovascular subjects who were willing to participate in the study.

To select the subjects in the villages, screening process was done for hypercholesterolemia. Both men and women above 30 years of age, whoever was willing, were requested to come for screening programme with an empty stomach. Among the total men and women, who attended the screening programme for hypercholesterolemia from ten villages, 40 members with cholesterol level more than 200 mg% and not having symptom of any major ailments were selected for further study.

2.3 Development of Education Materials for Focused Education on Heart Health and Hypercholesterolemia

In order to sensitize the selected subjects in the present study in both the environments, namely cardiac care clinic and rural areas, the focused education modules were developed about cardiovascular disease and hypercholesterolemia. Regarding this booklets, pamphlets and computer aided power point preparations were prepared in both English and local language Tamil. Totally two booklets and three pamphlets were prepared for focused education. Among the two, one of the booklets comprised of information on the definition of cardiovascular disease, their types, symptoms and risk factors including stress. The booklets also provided essential tips regarding stress management through exercise and yoga. Another booklet explained the causes, signs and symptoms for hypercholesterolemia. The same booklet also covered aspects like medical treatment for hypercholesterolemia, lifestyle changes and necessary dietary modifications for hypercholesterolemia. The pamphlet number one provided information on the foods to be included/avoided and preventive measures for cardiovascular diseases. The second pamphlet stressed the importance of exercise in controlling blood cholesterol levels and the other one provided information on the role of stress in heart ailments and ways of stress management.

2.4 Conduct of Focused Education

The selected subjects were assembled in a common place and the same content covered in the booklets and pamphlets were explained to the subjects with simulated video clippings and pictures through computer aided presentations in local language.

The foods which are to be avoided by the both cardiovascular and hypercholesterolemic subjects were displayed (Figure 1) and they were individually called to have a look of it because to make them understand and register these foods and make them avoid it completely.

As a part of focused education, in order to sensitize the subjects about the need for dietary and life style changes as a preventive measure of heart problems, the investigator arranged a small interactive session. In which she requested a local person who had undergone heart surgery (Figure 2) to come and explain to the subjects the side effects, expenditure involved and other personal problems faced in his daily routine and the doctor was also

invited to advise them regarding diet in the management of CVD and importance of this study to the subjects.

Finally, the developed education modules such as booklet and pamphlets in the local languages were distributed to the subjects for their future use.

2.5 Evaluation of Focused Education on Healthy Heart and Hypercholesterolemia

In order to evaluate the focused education, a separate KAP interview schedule was formulated to test the knowledge, attitude and practice of the subjects in both the cardiac care clinic and rural areas. The KAP schedule had multiple choice questions on heart health and hypercholesterolemia their cause, sign and symptoms. Scores were allotted for each question. Impact was evaluated by comparing scores obtained by the subjects before and after education which was analyzed statistically.



Figure 1. Display of foods to be avoided by hypercholesterolemic subjects.



Figure 2. Experience of a person undergone heart surgery.

3. Results and Discussion

3.1 Changes in the Mean Knowledge, Attitude and Practice of the Selected Cardiovascular Subjects

The changes in the mean knowledge, attitude and practice of the selected cardiovascular subjects are presented in the (Table 1).

Before education the subjects did not have much knowledge about cardiovascular disease their cause and effect. But after education they were very receptive and grasped the facts and were inquisitive to know about CVD and hypercholesterolemia and hence there was a good change in the knowledge. From the (Table 1) it is clear that there was an increment in the knowledge scores

of the cardiovascular subjects after the focused education about healthy heart and role of diet, which was also statistically significant at one per cent level.

The selected cardiovascular subjects were having wrong attitude about their choice of foods such as type of oil to be used, foods which should included frequently and which should avoided and about the habit of smoking and alcoholism. But after attending the focused education classes (Figure 3) they showed gradual change in their attitude and the changes were statistically significant at one per cent level when tested.

The cardiovascular subjects did not have any desirable practices like doing exercise or yoga but were under the addiction of alcohol and tobacco and were eating fast food items and bakery items before they were educated.

Table 1. Changes in the mean knowledge, attitude and practice of the selected cardiovascular subjects

(n=30)

Parameter	Initial Mean±SD	Final Mean±SD	"t" Value
Knowledge	4.6±1.7	9.6±1.5	30.1**
Attitude	3.7±1.6	7.5±1.4	21.0**
Practice	2.3±1.4	5.7±1.3	20.1**

**Significant at one per cent level



Figure 3. Focused education through developed modules.



Figure 4. Testing KAP of experimental group.

But after education (Figure 4) there was a good change in their practices which was significant at one per cent level.

Thus, proving nutrition counseling has an important role as a part of the treatment for cardiovascular disease.

3.2 Changes in the mean knowledge, attitude and practice of the selected hypercholesterolemic subjects

Table 2 gives detail about the changes in the mean knowledge, attitude and practice of the selected hypercholesterolemic subjects.

Before education the hypercholesterolemic subjects as they were from rural villages were unaware of the condition called hypercholesterolemia and they were lacking in all the medical and nutritional aspects. Hence the investigator explained from the basic aspects and made them understand the concepts. They also showed

very much interest in gaining knowledge as it was very new to them.

When the pre test was conducted the majority scored only zero and only few got one or two marks that is also by chance. But after education there was very great improvement in their knowledge scores and when the initial and final readings were analysed one per cent significant level of increment was seen in the scores.

When focused education was given the subject were very interested to know what it is about, but when it comes to them, why should we follow it was their question. Hence the investigator made them understand as they themselves were suffering from the condition, it is very important for them to follow the changes, which was imparted deeply. Hence a positive change was seen with their attitude after the education which was significant at one per cent level.

Table 2. Changes in the mean knowledge, attitude and practice of the selected hypercholesterolemic subjects

Parameter	Initial Mean \pm SD	Final Mean \pm SD	"t" Value
Knowledge	2.15 \pm 1.75	9.82 \pm 2.31	24.52**
Attitude	2.73 \pm 2.09	9.63 \pm 1.56	27.30**
Practice	1.73 \pm 1.38	7.20 \pm 1.29	25.14**

(n=40)

** Significant at one per cent level

When it comes to practice the same level of difficulty was seen but the subjects were trying to follow it and at the end of study maximum number of subjects were following the good habits such as blending of cooking oil, reduced intake of non vegetarian foods, quitting of smoking and alcohol consumption and regular walking was seen in some of the subjects, which was reflected in their final scores of practice. One per cent significant level of increase was seen in the practice scores of the selected subjects.

4. Conclusion

The focused education on heart health strengthened their knowledge, attitude and practices towards leading life with confidence and lead a heart healthy life.

5. References

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