

A Study to Assess the Importance of Antioxidant in Reducing Risk of Heart Attack Among Middle Age People in Selected Urban Areas of Ahmedabad, Gujarat

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Abstract

Pre-experimental study was conducted to assess the effectiveness of information booklet regarding importance of antioxidant in reducing risk related to heart attack among middle age group people in selected urban areas of Ahmedabad, Gujarat. The study was conducted among middle age group people and selected areas of Ahmedabad, Gujarat.

The main objective of our study was to evaluate the effectiveness of information booklet regarding importance of antioxidant in reducing risk related to heart attack among middle age group people in selected urban areas of Ahmedabad, Gujarat.

The 'General system model' was used as the conceptual framework. A quantitative approach with experimental study design was used to achieve the objective of the study. The samples consisted of 30 middle age people in selected urban areas of Ahmedabad. The purposive sampling technique was used to collect the sample. A structured questionnaire was used to assess the knowledge regarding importance antioxidants in reducing risk related to heart attack among middle age people in selected urban areas of Ahmedabad.

Data gathered was analyzed and interpreted using both experimental and inferential statistics. The mean and SD on concept mapping in pretest was 7.53 and 4.956, whereas the mean and SD of post test was 14.76

and 6.67. the calculated 't' value was greater than tabulated 't' value. Hence the null hypothesis was rejected and the research hypothesis was accepted. The result shows that when information booklet was given to middle age people, they achieve the best scores. This study therefore, offers an encouraging solution towards improvement of middle age people's performance regarding importance of antioxidants.

Keywords: Importance of Antioxidant; Reducing Heart Attack; Information Booklet

Introduction

An antioxidant is a molecule that inhibits the oxidation of other molecules in human body. Antioxidant protect the body from damage caused by harmful molecules called free radical. Antioxidants are manmade or natural substances that may prevent or delay some type of cell damages. Examples of antioxidants include: Beta-carotene, lycopene, lutein, Seleniu Vitamin A, Vitamin C, Vitamin E.¹

Antioxidant are chiefly available to us through vitamins, enzymes, and minerals. Vitamin E is actually a group of eight tocopherols. Alpha tocopherols is the most widely available tocopherol and also the most potent in terms of its effect on

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the body. Vitamin E is fat-soluble and protects cell membranes that are mainly composed of fatty acids. Vitamin C or ascorbic acid is water-soluble and it scavenges for free radicals that are present in aqueous environments within the human body. Beta carotene is also water soluble and is particularly effective in tackling free radicals in areas of low concentration. Selenium, manganese and zinc are trace elements that are important components of several antioxidant enzymes such as superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase. Enzymes work as both primary and secondary antioxidants and help repair oxidized DNA and target lipids that are oxidized.²

Vitamin A is also fat soluble and is designed to protect the body from certain types of pollutants that it is exposed to every day. Vitamin C is typically deficient in many people who suffer from heart disease. You can get a good dose of Vitamin C by eating a variety of citrus fruits, such as oranges and tangerines. Vitamin E on the other hand, is a fat-soluble antioxidant. It protects the fatty tissue of the body and it helps maintain a good cholesterol level by keeping the bad cholesterol from attaching itself to the blood vessels as it passes through. This helps to reduce the risk of heart disease. Beta-carotene is a red-orange pigment found in plants and fruits, especially carrots and colorful vegetables. Lycopene is the antioxidant that gives tomatoes their rich red color, when tomatoes are heat-treated, the lycopene becomes more bio-available. Lutein is called a carotenoid vitamin. It is related to beta-carotene and Vitamin A. Foods rich in lutein include broccoli, spinach, kale, corn, orange, pepper, kiwi, grapes, juices. Antioxidants prevent or repair the cell damage that free radicals cause including damage to the innermost 3 layers of the arteries. They lower the risk of heart attack by preventing the formation of plaque in the arteries and the oxidation of LDL cholesterol.³

Background Of The Study

Antioxidant vitamins C and E and also beta carotene could have an important role to play in the primary prevention of cardiovascular disease. Antioxidants in the studies were found to be most effective in early stages of atherosclerosis the cause of heart attack, stroke and peripheral vascular disease. Daily intake of Vitamin C between 45 & 113 mg/dl was linked to a reduced risk of cardiovascular disease & below 41 micromol/

liter in that case there is an increased chance of cardiovascular disease.⁴

National health & nutrition examination survey epidemiological follow-up study with a cohort of more than 11000 adults show a reduction in cardiovascular mortality of 42% for men and 25% for women who consumed at least 50 mg vitamin C daily in the diet. As health professionals' follow-up study the relative risk for cardiovascular disease was 29% lower for those with the higher beta carotene consumption. Second national health and nutritional examination survey, a representative study of 6624 men & women the relative risk for CHD and stroke was reduced by around 27%.⁵

In the US health professional follow-up study of almost 40000 men employed in the health sector daily vitamin C consumption, 149 to 1162 mg/day compared to 92 mg was not associated with reduced risk of coronary heart disease. Coronary heart disease was 29% lower for those with the higher beta carotene consumption than it was for those with lower consumption. Many epidemiological studies have reported that antioxidant vitamin intake from diet or supplement are associated with a lower risk of coronary heart disease. Eur J Cardiovascular Rehabilitation, 2008 undertook a meta-analysis of cohort study to examine relation between antioxidant vitamins C, E & beta carotene and coronary heart disease risk. Increase dietary intake of antioxidant vitamin has encouraging prospect for possible CHD prevention. In the Oregon health and science university on September 2018, the study says that heart attack mice caused inflammatory cells and platelets to more easily stick to the inner lining of arteries.⁶

By the nurses health study and the Iowa women's study both reported that Vitamin E intake, either from food sources or supplements, had a protective effect and lowered the risk of cardiovascular disease 34%. Health professional follow-up study indicated that individuals taking 60 IU/day had an 40% reduction of risk for cardiovascular disease compared to individual taking less than 7.5 IU/day.⁷

Need of the Study

According to Times of India on 6th November 2016, heart disease is the deadliest killer in Gujarat; statistics reveal that 24% of deaths among men and 19% of deaths among women due to cardiovascular diseases.⁸

According to world health organization in USA, an estimated 1 in 3 adults presents atherosclerotic

vascular disease, and the global absolute risk of experiencing a major cardiovascular events after age 50 years is about 52% for men and 39% for women. thus cardiovascular disease represents a global health problem for health care systems in terms of both inability to work and pharmaceutical charges, and strategies to prevent cardiovascular disease have universal significance on health outcomes and health care expenditures.

Antioxidants come up frequently in discussion about good health and preventing diseases. There powerful substances, which mostly come from the fresh fruits, and vegetables.

We eat prohibit, the oxidation of other molecular in the body. The benefits of antioxidants are very important for good health because if free radicals are left unchallenged, they can cause a wide range of illness and chronic disease.

The human body naturally produces free radicals and the antioxidants to counteract their damaging effects. However, in most cases, free radicals far number the naturally occurring antioxidants. In order to maintain the balance, a continual supply of external sources of antioxidants is necessary in order to obtain the maximum benefits of antioxidants.⁹

Antioxidant benefits the body by neutralizing and removing the free radicals from the bloodstream. Boosting your antioxidant intake can help provide added protection for the body against a heart problems. Antioxidant supplement are an important part for any healthy lifestyle. The best sources of antioxidants are plant based foods, especially fruit and vegetables. Foods that are particularly highly in antioxidants are often referred to as a "superfood or functional food".

The body also produces some antioxidants, known as endogenous antioxidants. Antioxidants that come from outside the body are called exogenous. Antioxidant are said to help neutralize free radicals in our bodies, and their is through to boost overall health. Antioxidants can protect against the cell damage that free radicals cause, known as oxidative stress. Antioxidants prevents oxidative stress and have been 5 though to help reduce risk of cancer, diabetes, heart attack and other disease. To decrease the risk of cardiovascular death.¹⁰

Problem Statement

"A Study to Assess the Effectiveness of Information Booklet Regarding Importance of Antioxidants In Reducing Risk Related to Heart Attack Among

Middle Age Group People in Selected Urban Areas of Ahmedabad, Gujarat."

Objectives

1. To assess the level of knowledge regarding reduction of risk related of heart attack through antioxidant among middle age people before and after administration of information booklet in selected urban areas of Ahmedabad.
2. To assess the effectiveness of information booklet regarding reduction of risk related heart attack through antioxidant.

Hypothesis

H0: There will be a no significant different between mean pre-test and post-test knowledge score of middle age people regarding importance risk related to heart attack through anti-oxidant after administration of information booklet at 0.05 level

H1: The mean post-test knowledge score of selected middle age people regarding importance of antioxidant related to heart attack through anti-oxidant will be significantly higher than mean pre-test knowledge score at 0.05 level.

Operational Definition

Assess: In our study assess refers to determine the level of knowledge regarding effects of antioxidants for reduction of risk related to heart attack.

Effectiveness: It refers to expected improvement in knowledge as evidenced by difference between pre-test and post test result.

Knowledge: Knowledge is a familiarity, awareness, or understanding of someone or something such as fact, information, description, or skills, which is acquired through experience or education by perceiving, discovering, or learning.

Information Booklet: It is a book which provide all related information about effects of antioxidants for reduction of risk related to heart attack.⁶

Heart Attack: It is a medical emergency in which the supply of blood to the heart becomes blocked caused by the complete blockage of the coronary artery.

Antioxidants: Substance are believed to play a role in the prevention and treatment of a variety of chronic disease ranging from asthma to cardiovascular disease and cancer.

Middle Age: In the study refers to the people who come in age group between 45 to 65 year.

Urban Area: In the study, it refers to region surrounding city. most urban area have non agriculture jobs and area can refers to towns and cit

Materials and Methods

Research methodology indicates the general pattern of organizing the procedure for gathering valid and reliable data for an investigation. The content of this chapter includes research approach and its rationale, description of setting and population, description of sample, tool selection, construction, description and rational of the tool, procedure of data collection, data analysis and statistically methods used.

Results

Study findings are organized and presented under following section :

Section A: Area wise knowledge score of pre-test and post-test of samples on knowledge among middle age group people regarding importance of antioxidants in reducing risk related to heart attack.

Mean percentage according to area wise knowledge among middle age people for introduction is 15.76%, sources is 8.53% and in benefits is 0.76% for pre-test knowledge. Mean percentage according to area wise knowledge among middle age people for introduction is 25%, sources is 21.10% and in benefits is 3.10% for post-test knowledge.

Table 1: Area wise knowledge score of pre-test and post-test [N = 30]

S. No.	Areas	Max. Score	Pre-test score		Post-test score		Percentage gain	Mean difference
			Mean score	Mean %	Mean	Mean %		
1	Introduction	10	4.73	47.3	7.5	75.00	27.7	2.77
2	Sources	9	2.56	28.44	6.47	71.88	43.4	3.91
3	Benefits	1	0.23	23.00	0.98	98.00	75.0	0.75
	Total	20	7.52	37.6	14.95	74.75	37.15	7.43

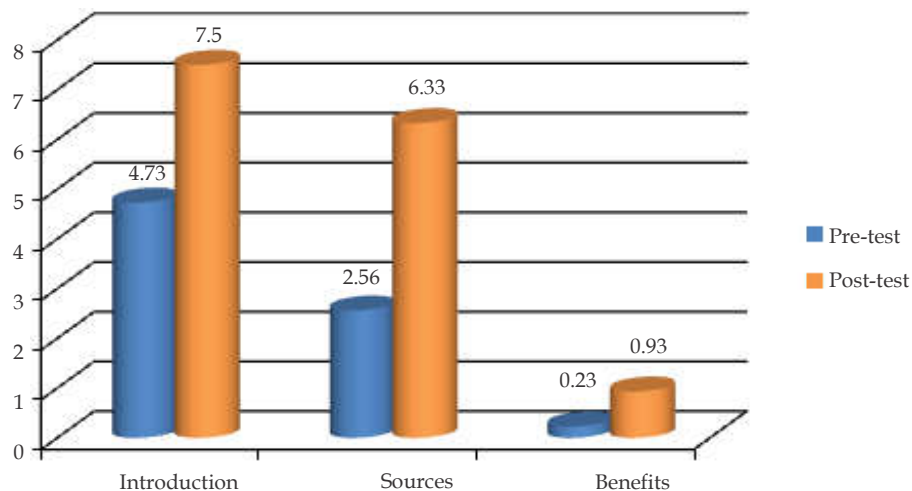


Fig 1: Area wise knowledge score of pre-test and post-test

Section B: To Assess the Effectiveness of Information Booklet Regarding Importance of Antioxidant. About 33.33% people have poor knowledge, about 66.66% people have average knowledge and about 0% people have good knowledge regarding importance of antioxidants

in reducing risk related to heart attack for pre-test and for post-test 0% people have poor knowledge, about 16.66% people have average knowledge and about 83.33% people have good knowledge regarding importance of antioxidants in reducing risk related to heart attack.

Table 2: Effectiveness of Information Booklet Regarding Importance of Antioxidant [N = 30].

Level of knowledge	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Poor (0-6)	10	33.34	0	0.00
Average (7-13)	20	66.66	5	16.66
Good (14-20)	0	0.00	25	83.34
Total	30	100.00	30	100.00

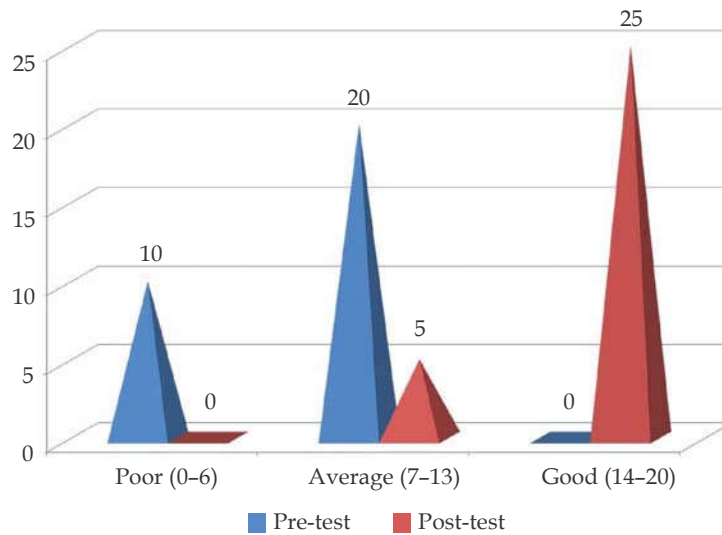


Fig. 2: Effectiveness of Information Booklet Regarding Importance of Antioxidant

Section C: Analysis and interpretation of data collected on structured knowledge questionnaire.

Knowledge among middle age group people regarding importance of antioxidants in reducing risk related to heart attack.

Pre-test mean score is 7.53 and post-test mean score is 14.76, hence calculated 't' value is 4.7880 is more the table 't' value. Thus, null hypothesis is rejected. Hence H1 is accepted.

Table 3: Analysis and interpretation of data collected on structured knowledge questionnaire [N = 30].

	Mean	SD	Mean %	Calculated 't' value	df	Table 't' value
Pre- test	7.53	4.956	25.1			
Post-test	14.76	6.67	49.2	4.7880	29	2.05

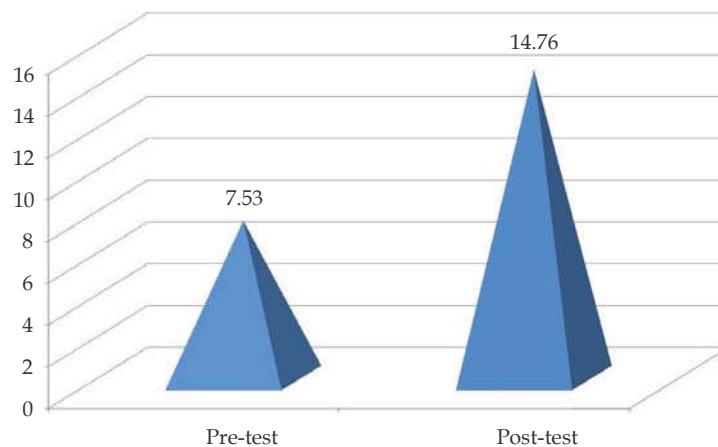


Fig. 3: Analysis and interpretation of data collected on structured knowledge questionnaire

Discussion

This section evaluated the findings of the present study in the light of previous research studies. The discussion is organized based on finding of the study. The theoretical framework of the present study was based on concept of General System Theory.

Conclusion

The study intends to assess the effectiveness of information booklet regarding importance of antioxidants in reducing risk related to heart attack among Middle age group people in selected urban areas of Ahmedabad, Gujarat. The study reveals that the post-test knowledge score is higher than the pre-test knowledge score regarding importance of antioxidants in reducing risk related to heart attack among middle age group people.

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