Original Article

Awareness Level and Practices of Heart Healthy Diet of Patients Undergoing Coronary Artery Bypass Grafting

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A R T I C L E   I N F O

A B S T R A C T

Change in dietary habits with reduction in specific type of foods with heavy calories may help in prevention of many types of primary and secondary Cardiovascular Diseases (CVD). Coronary artery disease (CAD) is the most common cause of death all over the world and mostly treated by Coronary Artery Bypass Grafting (CABG). The recommended diet according to the guidelines, is high in fruits, vegetables and whole grains and is low in high fats and processed foods. The factors involved in consumption of low-quality diet mainly are lack of public awareness about the role of dietary style in development of CVD, lack of food due to low socioeconomic conditions, cultural and traditional differences of food preparation and availability of poor-quality food in markets **Objectives:** To assess the level of awareness amongst the patients of coronary artery bypass grafting in its worst form. **Methods:** The study was performed on 91 patients of CAD, admitted for CABG in tertiary care hospital. A questionnaire-based survey was conducted for a period of eight months. All patients admitted for revascularization for CAD were included. Details of patients co morbidities were collected and their socioeconomic status was confirmed from the medical record. They were scored on their general education, knowledge about heart healthy diet according to American Heart Association (AHA) dietary guidelines and their dietary practices were scored healthy or non-healthy based on their answers. **Results:** Among the patients, approximately, 75.82% were males, 96.7% had age above 49 years, half of the patients had some sort of awareness regarding heart healthy diet, 37% were following healthy diet, 50% were partially following and 4.4% were not following at all. **Conclusion:** The awareness of participants regarding heart healthy diet was over all poor and also their dietary practices were even worse and not in accordance to the medical recommendations. There is a need to increase awareness in heart patients regarding healthy diet choices so that their risk of disease progression can be reduced

I N T R O D U C T I O N

The greatest cause of death worldwide is cardiovascular disease (CVD)[1]. Every third person in the United States has a CVD of some kind [2]. Nations experience a significant health burden due to CVD. The most widespread kind of CVD is coronary artery disease (CAD), which is also the third most common reason for heart disease-related death [3]. Incidence of the disease is rising day by day because of rapidly changing lifestyles. It has been proved through various studies in different parts of the world that CAD is getting prevalent in US, China, Middle east as well as far east regions [4]. Prevalence of CAD is significantly higher in Pakistan, according to a study conducted at Karachi [5]. The common risk factors for CAD are growing age, gender, family history of associated co morbid conditions like diabetes, obesity and hypertension (HTN) [6]. Along with all these non-modifiable factors, the significant role of diet could not be neglected. Health outcomes associated with dietary pattern is seen in lots of observational studies which are challenging in a way that measuring the quantity of daily intake and type of food intake in different families cannot be assessed subjectively [7]. Maintenance of caloric balance is the key factor of healthy eating. For cardio- metabolic benefit caloric restricted diet is supported by large number of published reports recently [8]. Dietary composition, quality of food along with avoiding the overconsumption of every nutrient

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are important consideration as suggested by emerging evidence. Low-carbohydrate and superior to low-fat diets in maintaining healthy weight balance [9]. Thus, current dietary recommendations primarily based primarily on eating whole food items like total fruits and vegetable intake has been associated with much reduced risk factor of CAD. However, few of the fruits and vegetables like potatoes especially if taken as French fries has no benefits as a subgroup, in prevention of CVD. Role of fibers, folate and potassium containing foods are less studied. Use of whole grain is associated with a lower risk of CVD, whereas refined grain is deficient in many nutrients which are lost during milling process [10]. Modification of dietary intake habits need awareness amongst larger populations which is only possible if the knowledge of impact of food on CAD is thoroughly conveyed to the public. Moreover, the patient's particular knowledge of their own cardiovascular status and risk level match up with the compliance to drug treatment and adjustment to heat friendly lifestyle [11]. However, the awareness of CVD and its risk factors are still low in both primary and secondary prevention practices. Diet and exercise have been promoted as the "best buy" by the WHO to combat the rise in non-communicable diseases (NCDs) worldwide [16]. Therefore, adopting a healthy lifestyle and changing one's behavior are critical preventative measures for many primary and secondary cardiovascular problems. Vegetables, fruits, nuts, whole grains, lean animal protein, and fish should all be part of a balanced diet. Additionally, it reduces consumption of trans fats, red meat, processed red meats, refined carbs, and beverages with added sugar [17]. This study was carried out to help develop recommendations for health practitioners to expand their practice of educating patients about nutrition, specifically for the prevention of CVD.

METHODS

A questionnaire-based survey was conducted in a tertiary care hospital for a period of eight months. All patients admitted for revascularization for CAD were included. They were scored on their general education, knowledge about heart healthy diet according to AHA dietary guidelines and their dietary practices were scored healthy or non-healthy based on their answers. There were two parts of questionnaire. First was, Awareness Section that included 12 questions (Table 1) and the other was practice section that included 13 questions. Patients were asked in their own language. In awareness section, if patient was aware of more than 8 questions they were labeled as AWARE, between 8-6 PARTIALY AWRE, and if replied to lesser than 6 then labeled as UNAWARE.

Awareness Section: This section was designed with

following questions:

No.	Questions for Awareness of Heart Healthy Diet
1	Do you know what calories are?
2	Do you know the method of calculation of calories?
3	Do you know about the BMI or Ideal Body weight?
4	What should be your ideal body weight according to your height or BMI?
5	Are you aware how much salt to be consume daily?
6	Are you aware of saturated fats and Trans fats or different types of good or bad cholesterol?
7	What is the recommended amount of Trans/saturated fats to be consume daily?
8	Is alcohol good for health or not?
9	Do you know what constitute heart healthy diet?
10	Which grain is good for health?
11	Which type of milk is good for heart health?
12	What is your opinion about soft drink for heart health, Is it good or bad?

Table 1: Questions regarding awareness of heart healthy diet

The second section of questionnaire was labelled as Practices Section (Table 2), in this the level of practices of daily eating habits of patients were assessed by scoring and labelling them 'PRACTICING' if more than 8 points were replied positively, while 'PARTIALY PRACTICING' label was given if reply falls between 6-8 and in case of less than 6 responses the patient was categorized as 'NON PRACTICING'.

Practice questions: following were the questions in this section:

No.	Questions regarding practices of heart healthy diet by patients
1	Have you ever calculated calories?
2	Have you ever tried to lose weight (BMI)?
3	Your intake of salt? Do you eat eggs?
4	What kind of meat do you eat?
5	Do you drink alcohol?
6	Do you eat vegetables every day?
	Do you eat nuts every day?
7	Do you eat legumes every day?
8	Do you eat fruits every day?
9	Your intake of grain? Do you drink milk?
10	Do you drink soft drinks?

Table 2: Questions regarding practices of heart healthy diet by patients

RESULTS

Total of 91 patients were analyzed these included both males 69 (75.82%) and females 22 (24.17%). Most of the patients were above 40 years i.e. 88 (96.7%). Almost 6.6% participants were fully aware of healthy diet. 41.8% were partially aware and 51.6% had no awareness (Table 1). Regarding practices, only 40.7% were following heart healthy diet practices, 54.9% were partially following healthy diet and 4.4% were not following healthy diet (Table

3). As far as occupation among the patients was observed, 31 patients were having professional jobs, 32 were labors and 28 were unemployed (Table 2). The economic status of the patient was also varied, monthly income of 30 patients were between PKR 12,000-30,000, 34 patients were earning PKR 30k-60K monthly and per month income of 24 patients was above PKR 60,000 (Table 2). 48 (52.7%) were uneducated, 27 (29.7%) did matriculation, 11 (12.1%) did graduation, 5 (5.5%) did postgraduation. 56 patents were doing sedentary jobs while 35 patients were performing laborious jobs (Table 4). One or more of the studied chronic diseases were present as follows i.e., Diabetes 53(58.24%), Hypertension 33(36.26%) and Hyperlipidemia 13(14.28%).

Variables	Frequency	Percentage
Level of Awareness		
Fully Awareness	06	6.6
Partially Awareness	38	41.8
Unaware	47	51.6
Diet Practice		
Healthy Diet	37	40.7
Partially Healthy Diet	50	54.9
Unhealthy Diet	04	4.4

Table 3: Diet Awareness and practice

Variables	Frequency	Percentage
Professional	31	34.1
Labors	32	35.2
No Job	28	30.8
Income		
Up to 6000 Per Month		1.1
6000-12000 Per Month		1.1
12000-30000 Per Month		33.3
30000-60000 Per Month		37.8
More Than 60000 Per Month		26.7
Education		
Illiterate		52.7
Matriculation		29.7
Graduation		12.1
Post-Graduation		5.5
Job Nature		
Office work		51.6
Labor		48.4
Level of Activity		
1-5 per Week	35	38.5
Sedentary	56	61.5

Table 4: Demographic variables of studies population

DISCUSSION

The American Heart Association (AHA) suggests following a balanced dietary pattern that priorities a range of fruits and vegetables, whole grains, low-fat dairy products, skinless poultry and fish, nuts and legumes, and non-tropical vegetable oils in order to maintain optimal heart health. The group also stresses eating fish high in omega-3 fatty acids (such salmon and trout) at least twice a week, watching portion sizes, and consuming alcohol moderately (i.e., no more than one serving per day for women and no more than two drinks per day for men). The American Heart Association presently advises minimizing sodium, red meat, sweets, and beverages with added sugar. Numerous research investigated the variables linked to patients' ignorance about CVD risk factors. Patients with a body mass index below 24 kg/m2, those with a family history of dyslipidemia, older patients, and retirees were all shown to be more conscious of dyslipidemia, according to research by He et al. A lower level of awareness of dyslipidemia was linked to alcohol consumption, cigarette smoking, and physical activity [9]. Patients with a family history of diabetes mellitus and those who regularly exercise were more likely to be aware of the condition, according to research by Wang et al. Smokers and those who consume alcohol were also less likely to be aware of their blood glucose levels 10]. Men and smokers were shown to be less conscious of arterial hypertension, according to Méndez-Chacón et al. Patients' knowledge of arterial hypertension was correlated with a history of ischemic heart disease, stroke, diabetes mellitus, and obesity. Patients were less likely to be unaware of their hypertension if community health workers had visited them at home [20]. Studies conducted in the United States on adults between the ages of 18 and 26 and American Indian women who had previously experienced gestational diabetes revealed a high knowledge score for weight loss (78.5%) and stressed the impact of food and cholesterol on the risk of CVDs. Additionally, women in the French West Indies cited consuming fewer fats (42%), as well as consuming fewer alcoholic beverages (26%), as contributing factors to heart health. Only 50% of Malaysian participants in the study recognized obesity as a risk factor for heart attacks [24–27]. Spreading awareness may be substantially correlated with the differences in knowledge ratings between nations. For instance, the governments of Kuwait and the United Arab Emirates (UAE) make large investments in educating the populace about healthy lifestyles and cardiovascular risk factors. Although some nations, like Malaysia, have started a number of health education efforts, they still require successful, well-thought-out awareness campaigns, particularly with cardiovascular risk factors [24,28,29]. Participants with advanced degrees and jobs had higher knowledge ratings. This result is in line with earlier research [30] that showed rising levels of education, employment, and financial security were associated with greater CVD knowledge. This inference can be clarified by supposing that people with higher education are more cognizant of and capable of

comprehending health-related

CONCLUSIONS

The knowledge of participants regarding heart healthy diet was over all poor and also their dietary practices were even worse and not in accordance to medical recommendations. There is a need to increase awareness in heart patients regarding healthy diet choices so that their risk of disease progression can be reduced.

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