Research Paper

Home Science



Knowledge of Type 2 Diabetics about Functional Foods

* Vaishali Dhanvijay

* Department of Home Science, Sant Gadge Baba Amravati, University, Tapovan Road, Amravati, Maharashtra, 444602

ABSTRACT

Diet plays a key role in the management of diabetes. Functional foods are considered as those foods which are intended to be consumed as part of the normal diet and that contain biologically active components which offer the potential of enhanced health or reduced risk of disease. The bioactive components in functional foods may perform different actions within the body, which can result in specific types of health benefits. The study aimed to motivate diabetics by increasing their knowledge level about functional foods to change the consumption pattern of the food for getting beneficial functional components through diet. An educational programme was used as an intervention for this. Knowledge level about functional foods before and after programme was measured. The findings of the study revealed that the programme had a positive and significant effect to increase knowledge level of diabetics.

Keywords : Functional foods, Knowledge, type 2 diabetes

INTRODUCTION

The primary role of diet is to provide sufficient nutrients to meet the nutritional requirement of an individual. There is now increasing scientific evidence to support the hypothesis that some foods and food components have beneficial physiological and psychological effects over and above the provisions of the basic nutrients. Functional foods should be in the form of normal foods and they must demonstrate their effects in amount that can be normally expected to be consumed in the diet. A functional food can be a natural whole food, a food to which a component has been added, or a food from which a component has been removed by technology means. It can also be a food in which the nature of one or more components modified. A functional food may be targeted at the whole population or for particular groups.

Functional foods are defined as foods that provide additional physiological or health promoting benefits beyond the well established functions of nutrients contained in foods. The concept of functional foods is relatively new. It is receiving considerable scientific and commercial attention because of its relationship to maintenance of health and prevention of disease. (Bamji et al, 2010)

According to Shrilaxmi (2005), functional food is any food that has a positive effect on a person's health, physical performance or state of mind. Food can act as an antioxidant, rich in fiber which helps in excreting harmful substances. Probiotics helps in maintaining intestinal bacterial balance.

Diet clearly plays an important role both in the development and management of obesity and diabetes. Functional foods could help in prevention and/or management of obesity and type 2 diabetes (Hill and Peters ,2002). Functional foods might have a particularly high impact for prevention or treatment of overweight and diabetes (Ricardi et al, 2005). Beyond meeting nutrition needs, diet may modulate various functions in the body and play detrimental or beneficial roles in some diseases. The positive effects of a functional food can be either maintaining a state of well-being and health or reducing the risk of pathologic consequences (Roberfroid, 2000).

The present study was taken up to impart knowledge about functional foods to type 2 diabetics so that they can be motivated to change the consumption pattern of the food for get-

ting beneficial functional components through diet.

MATERIALS AND METHODS

The study was carried out in Amravati, Maharashtra state. The study design consisted of before and after evaluation with an educational programme on functional foods as an intervention. The subjects for the study were type 2 diabetics who attended the regular check up camps. Total 104 subjects were enrolled for the study. The primary data was collected by using a structured interview schedule. A three point teacher made scale was developed to measure the knowledge of the type 2 diabetics before and after the programme. The variables of the subjects included for the study were age, sex, education, occupation, family income and family type. For assessment of nutritional status of the subjects, the height and weight of the subjects were taken and body mass index (BMI) was computed as weight (kg)/height (m) 2. The categorization of BMI was done as given by Bamji et al, 2010.

To impart knowledge on functional foods, the systematic and structured programme was chalked out. For this, information was extracted on functional foods their active components, benefits, recommended use in the diet etc was collected. Functional foods which are part of regular diet were selected for the study and grouped as shown in the table 1.

Table 1 Functional food in the daily diet

SN	Food group	Functional food selected		
1	Roots and tubers	Onion, garlic and carrots		
2	Fruits	Tomato, lemon and guava		
3	Green leafy vegetables	All green leafy vegetables		
4	legumes	Soybean, sprouts		
5	Condiments and spices	Fenugreek seeds		
6	Fermented/ Probiotic food	Curd		

A leaflet was prepared in local language on functional foods and distributed among the subject during the programme. Lecture and demonstration method was used in the programme. The scores on knowledge of functional foods before and after programme were collected and based on mean and standard deviation; they were categorized as low, adequate and high. A correlation coefficient test was applied to see correlation between selected variables and gained knowledge of the subjects. 'Z' test applied to make comparison about effect of programme on the subjects through testing the mean difference. MS –Excel statistical package was used for statistical analysis.

RESULTS AND DISCUSSION Table 2 Profile of the subjects

SN	Variables	Subjects (N= 104)		
		Frequency	percentage	
1	Age (years) 35 – 44 45 – 54 55 – 64 65 - 74	07 30 35 32 Mean =54.5 ± 27.57	6.73 28.86 33.65 ·30.76	
2	Sex Male female	79 25	76.00 24.00	
3	Educational attainment SSC or below HSSC Graduation Post graduation	48 15 34 04	46.17 14.42 32.69 03.84	
4	Work pattern Business Service Retired Housewife	50 16 20 18	48.07 15.40 19.23 17.30	
5	Yearly Income Up to 50,000 50,001 to 1,00,00 1,00,000 to 1,50,00	43 49 12	41.36 47.11 11.53	
6	Family type Joint Nuclear	61 43	59.00 41.00	

Table 2 indicates that the mean age of the subjects was 54.5±27.57 and majorities were males. The highest 48 percent of subjects had educational attainment of secondary school certificate passed or below, 15 percent did higher secondary school certificate, 34 percent were graduated and very few, 0.4 percent were post graduated. Socioeconomic disadvantage especially in educational attainment is a significant predictor of type 2 diabetes incidence in adults (Maty, S.C. et al, 2005). For work pattern, it was observed that 50 percent had business as earning source whereas 16 percent had service, 20 per cent were retired and 18 percent were housewife. The mean yearly family income of the subjects was 1, 00,000±70.711 and most of the subjects, 61 percent

SN	Presumptive diagnosis	BMI	Subjects (N=104)		
			Number	Percentage	
1	Low weight –	186 - 200	07	6 73	
	Normal	10.0 - 20.0	07	0.75	
2	Normal	20.1 – 25.0	58	55.78	
2	Obasa Crada I	25 1 20 0	20	26 52	

01

104

00.96

100.00

> 30

Total

Obese Grade II

Table 3 Categorization of the subjects according to their Body Mass Index (BMI)

From table 3, it was observed that the highest, 55.78 percent subjects were in normal BMI category, followed by 36.53 per cent in obese-grade I, 6.74 in low weight normal and only one subject was in obese-grade II category. No subjects were found to be in the category of chronic energy deficiency mild (BMI 17.1 – 18.5), moderate (BMI 16.1 – 17.0) and severe (BMI \geq 16) hence these categories are not included in the table.

According to Maty, S.C. et al, (2005), BMI is an important component of pathway between socioeconomic position and diabetes incidence.

Table 4 categorization of the subjects about their Knowledge of functional foods

SN	Characteristics Category		Low	Adequate	High	Mean score	Z value
1	Knowledge	Before	05 (4.82)	96 (92.30)	03 (2.88)	70.31	·7.3*
		After	01 (00.96)	49 (47.11)	54 (51.93)	79.08	

* significant at 0.05 and 0.01 level of probability

Figures in the parentheses indicates percentage

Table 4 denotes the increase in knowledge of functional foods after the educational programme. 'Z' value was found highly significant, it could, therefore, be explicitly inferred that the programme had a positive and significant effect on the knowledge about functional foods of the type 2 diabetics. The 'r' value for coefficient of correlation between selected variables of the subjects and knowledge gained was found insignificant at at 0.05 and 0.01 level of probability hence it can be said that these variables had no influence over the knowledge of the subjects about functional foods.

IMPLICATIONS

Functional foods are safeguard to life. Diet is the basis for diabetes management and the nutrition education intervention programmes for diabetics must include importance of functional food components in daily diet to get optimum health benefits. Knowledge of functional foods also be given to everyone to maintain their health.

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