

# Awareness of Balanced Diet among Diabetic Patients: A Survey

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## Abstract

Diabetes mellitus is a multisystem disorder that is associated with number of complications.

**Aims:** A well balanced diet is important in the control and management of diabetes mellitus. This study aims to assess the awareness of balanced diet among diabetic patients. A healthful eating pattern is a key component of diabetic management. The objective of the study is to determine the awareness of balanced diet among patients with diabetes mellitus.

**Methods:** A descriptive design using survey method is used to determine the awareness of balanced diet among 75 diabetic patients.

**Results:** The response to the survey questionnaire shows that majority of the participants have heard about balanced diet 65 (86.7%), while 10 (13.3%) have not heard about balanced diet. About 70(93.3%) participants think that it is important to eat balanced diet daily. A majority of them 71(94.7%) were aware that it is essential to include whole grain cereals and pulses in their diet. A majority of the participants 59(78.7%) were aware of the food sources of carbohydrates and 16(21.3%) of them were not aware of the food sources of carbohydrates. In conclusion, although majority of the participants 65 (86.7%) have heard about balanced diet, there are still a few of them who have not heard and understood the importance of balanced diet.

**Conclusion:** Necessary interventions such as nutrition education programmes and awareness programmes should be carried out to promote health and prevent diabetic complications in the future.

**Key words:** Awareness, balanced diet, diabetes mellitus and patients.

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## INTRODUCTION

Diabetes is a silent disease-many sufferers became aware that they have diabetes only when they develop one of its life-threatening complications. Patient's awareness and practices are crucial components in reducing the burden of diseases and its complications. According to the International Diabetes Federation, currently 39.5 million people in India have pre-diabetes, and of them seven million will develop diabetes every year [1].

The American Diabetes Association recognises the integral role of nutrition therapy in overall diabetes management and recommends that each person with diabetes receive an individualized eating plan that has been developed in collaboration with his or her health care provider [2]. Previous studies show that eating patterns of individuals are influenced by the knowledge and awareness of diabetes management.

According to the WHO (2006), by 2015, approximately 2.3 billion adults will be overweight and more than 700 million will be obese worldwide [3]. A balanced diet makes a difference not only to manage diabetes but also help to manage the energy requirements. As diet is one of the crucial aspects of the management of diabetes, every individual with diabetes must be aware of the importance of balanced diet.

A study conducted in China (2015) by Jingran Cao et al, shows that only 54.10% patients with diabetes mellitus believed that the diet should be balanced and reasonable. The rate of awareness was 80% and there was misunderstanding about balanced diet [4]. A baseline study conducted by in Delhi (2012) by Kishore J et al, shows that

only 1.85% follow diet plan frequently at home [5]. According to Juma Al-Kaabi et al (2008), appropriate dietary practices are a basic and integral part treating diabetes mellitus and may reduce the development of disease complications by improving risk factor profiles. The goals of diet control are to improve quality of life, nutritional status and risk factors as well as to prevent the chronic complications of diabetes [6]. The main result of this study conducted in Italian regions by Rivellesse A A (2007) concluded that adherence to dietary recommendations is not completely satisfactory in terms of dietary composition even in a population of Italian type II diabetic patients [7].

## MATERIALS AND METHODS

A descriptive design using survey method was used to determine the awareness of balanced diet among diabetic patients. Subjects were Indians including men and women who were diabetic. Data was collected using an online questionnaire. Convenient sampling technique was used to select the participants. An online questionnaire was used to collect the data. The online questionnaire consists of demographic data (Age, Gender, Educational status) and questionnaire related to awareness of balanced diet. In this online survey, a total of 75 subjects participated. Descriptive statistics was used for data analysis. The results were analysed and presented in tables and figures. Data was obtained from the subjects who volunteered to participate in this study. The study was approved by the Institutional Review Board. Informed consent was obtained from the participants before the data collection.

**Table 1 Awareness of balanced diet among participants (n=75)**

Awareness of balanced diet	Yes (%)	No (%)
1. Have you heard about balanced diet ?	65 (86.7%)	10 (13.3%)
2. Do you think it is important to eat balanced diet every day?	70 (93.3%)	5 (6.7%)
3. Do you how much portions of fruits and /or vegetables should be taken every day?	47(62.7%)	28(37.3%)
4. Is it important to include fruits and vegetables in diet?	75(100%)	0 (0%)
5. Are fats essential to be included in daily diet?	56(74.7%)	19(25.3%)
6. Is it essential to choose low fat products?	51(68%)	24(32%)
7. Do you know about three kinds of fats?	37(50%)	37(50%)
8. Do you opt for lean cut of meats or remove visible fat?	45(60%)	30(40%)
9. Are unsalted nuts and seeds good to be included in your diet?	61(81.3%)	14(18.7%)
10. Do you know what starchy foods are?	55(73.3%)	20(26.7%)
11. Is it important to include starchy foods in diet daily?	44(58.7%)	31(41.3%)
12. Do you need to base the main meals around starchy foods?	29(40.3%)	43(59.7%)
13. Is it essential to include whole grain cereals and pulses in your diet?	71(94.7%)	4(5.3%)
14. Do you know how much of sugar should be consumed in a day?	35(47.3%)	39(52.7%)
15. Do you know the daily requirements of carbohydrate in your diet?	43(57.3%)	32(42.7%)
16. Do you know the food sources of carbohydrates?	59(78.7%)	16(21.3%)

## RESULTS AND DISCUSSION

The total numbers of participants in the study were 75. The demographic data of the participants shows that among the 75 participants, 28(37.3%) belonged to the age group of 20-30 years, 12(16%) between 30-40 years, 15(20%) between 40-50 years and 20(26.7%) belong to the age of 50 years and above. More females 48(64%) participated than the males 27(36%) in this study. The highest number of participants have completed their bachelor's degree 41(56.2%) followed by Master's degree 16(21.9%). There are 10(13.7%) who have completed their diploma and 6(8.2%) have completed their high school or below.

Table 1 shows the response to the survey questionnaire on awareness of balanced diet. Figure 1 shows that a majority of the participants have heard about balanced diet 65 (86.7%), while 10 (13.3%) have not heard about balanced diet. About 70(93.3%) participants think that it is important to eat balanced diet daily.

Figure 2 shows that there were 47(62.7%) who knew how much portions of fruits and /or vegetables should be taken every day. All the participants 75(100%) were aware that it important to include fruits and vegetables in diet. Figure 3 shows that 56(74.7%) of them responded that fats essential to be included in daily diet. There were 51(68%) participants who are aware that it essential to choose low fat products, and 24(32%) are not aware of it. Half of them 37(50%) know about the three kinds of fat. The numbers of participants who opt for lean cut of meats or remove visible fat are 45(60%). A majority of the participants 61(81.3%) are aware that unsalted nuts and seeds are good to be included in their diet. About 55(73.3%) knew about starchy foods. Whereas, 31(41.3%) were not aware of its importance. About 43(59.7%) of them responded that there is no need to base the main meals around starchy foods. A majority of them 71(94.7%) were aware that it is essential to include whole grain cereals and pulses in their diet. More than half of the participants 39(52.7%) are not aware on how much of sugar should be consumed in a day. The participants who knew the daily requirements of

carbohydrate were 43(57.3%) and 32(42.7%) were not aware of the requirements.



Figure 1: Response to question: 'Have you heard about balanced diet'?

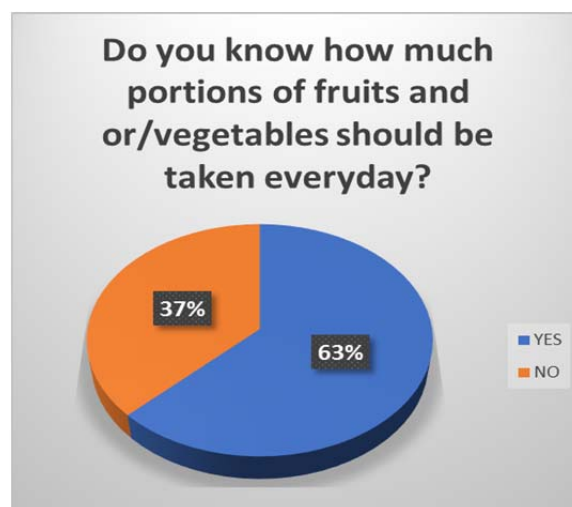


Figure 2: Response to question on 'Portions of fruits/vegetables'



Figure 3: Response to question: “Are fats essential to be included in daily diet”?

Although majority of the participants 65 (86.7%) have heard about balanced diet, there are still a few of them who have not heard and understood the importance of balanced diet. In a study conducted in Bijapur, Karnataka(2010), the findings show that diet was considered to play an important role by 90.68% respondents and only 1.92% did not feel it was important. Khattab MS et al (1999) conducted a study among the community of Saudi Arabia, and reported that only 40% of diabetic patients had good compliance with their diet [8].

In the study done by Raj P& Angadi MM (2010), eighty percentage of the respondents reported that they were strict about their diet but 37.8% were consuming beverages with sugar [9]. The study results are almost similar with the study conducted in China by Jingran Cao et al, which shows that only 54.10% patients with diabetes mellitus believed that the diet should be balanced and reasonable [4].

Though all the participants (100%) knew the importance of including fruits and vegetables in diet, 47(62.7%) of them were not aware of the portions to be taken daily. Half of the participants 37(50%) were not aware of the three kinds of fat, 32(42.7%) did not know the daily requirement of carbohydrates, and 16(21.3) were not aware of the food sources of carbohydrates. These results show that there is still a need for promotion of awareness on balanced diet among the diabetic patients to prevent complications of diabetes mellitus in the future.

## CONCLUSION

International Diabetes Federation (2009), reported that the number of people with diabetes in India is expected to increase from 51 million in 2010 to 87 million in 2030[10]. Koenigsberg MR (2004) stated that it is a well-established fact that healthy planned eating and regular exercise can delay diabetes and its complications [11]. The most challenging part of the treatment plan in diabetes mellitus is diet. Poor diet significantly increases the risk of diabetes mellitus. Therefore it is important that the patients must be aware and knowledgeable about balanced diet and its importance. Necessary interventions such as nutrition education programmes and awareness programmes should be carried out to promote health and prevent diabetic complications in the future.

## ACKNOWLEDGEMENT

The authors wish to thank Saveetha Dental College and hospital for the approval and permission to conduct the study. The head of the department is thanked for the continuous support throughout the study. The participants are highly appreciated for their contribution in this study.

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