

A Cross-Sectional Study to Assess the Knowledge of the Diabetes Patients Regarding Diabetic Diet

Research Article

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Article Information: Submission: 22/01/2022; Accepted: 25/02/2022; Published: 28/02/2022

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Abstract

Introduction: The burden of Diabetes Mellitus is considerably higher in general population. Diabetic Mellitus and its complications are the leading causes of morbidity. Risk factors for diabetes are well established but little is known about the knowledge regarding diet among diabetic patients. Dietary management is considered as a major step in assessing a patient's knowledge. Conversely, the challenge for the patients is how to maintain the effective dietary pattern to manage their diabetes. Diabetes patients need many dietary and life style changes simultaneously.

Objective: To assess the knowledge of diabetic patients regarding diabetic diet.

Material & Methods: Across sectional survey was applied upon 100 diabetic patients. A validated structured questionnaire was used. Questionnaire comprised of two sections. Section-I: Consist of socio-demographic data which includes 11 items of demographic variables and section-II: Consists of 34 structured items for assessing the knowledge of diabetic patients regarding diabetic diet.

Results: Poor knowledge of the patient regarding diabetic diet with mean knowledge score of 14.46 ± 4.52 (maximum knowledge score was 34) was found. Statistically significant inverse correlation was found between Knowledge score and age of the patient ($P = 0.001$.) whereas it was found in-line with the level of educational qualification ($P = 0.001$). The subjects from pukka house were more aware about diabetic diet ($P = 0.004$). Subjects who attended any educational activity related to diabetes mellitus and diabetic diet had more knowledge ($P = 0.010$). The knowledge score was independent of gender, religion, marital status, occupation, and type of family, area of residence and monthly family income of the patient.

Conclusion: Enhancement in the level of knowledge is the felt need for the patient to adhere healthy diabetes diet. Public awareness campaign has to be started at every level to educate the diabetic population about diabetic diet.

Keywords: Knowledge; Diabetes mellitus; Diabetic diet; Patients

Introduction

Diabetes Mellitus has become a major health challenge today worldwide. It represents a spectrum of metabolic disorders irrespective of age. The unprecedented economic development and rapid urbanization in Asian countries, particularly in India has led to a shift in health problems from communicable to non-communicable diseases. Of all the non-communicable diseases, diabetes and cardiovascular diseases lead the list. Diabetic Mellitus is metabolic chronic disease with long term macro vascular and micro vascular complications. Diabetic Mellitus and its complications are one of

the leading causes of morbidity including diabetic nephropathy, neuropathy and retinopathy. It is the leading cause of death, disability and blindness. Approximately 80% of blindness is related to diabetic retinopathy. Diabetic is also responsible for 5,800 or 10% of the new cases of blindness reported annually in India. Diabetic Retinopathy (DR) is the leading cause of vision loss in adults aged 20-74 years [1]. From 1990-2010, DR ranked as the fifth most common cause of preventable blindness and fifth most common cause of moderate to severe visual impairment [2]. The burden of diabetes is considerably higher in general population. The knowledge of self-care factors will be very helpful in prevention of diabetic related complications.

India is considered as the diabetic capital of the world. There are approximately 50 million diabetic patients in India. This figure is expected to increase up to 80 million by 2030. Early diagnosis, intensive treatment and consistent dietary pattern along with regular care and follow ups are essential for diabetes patients, which can help to preserve their health and statistically significantly lower the risk of complications [3]. Risk factors for diabetes are well established but little is known about the knowledge regarding diet among diabetic patients. 'Diabetes has no cure, but it can be well managed through proper diet, medication and exercise.

The Centers for Disease Control and Prevention have identified self-dietary management as a major step in assessing a patient's knowledge related to the nutritional aspects, treatment, and complications of diabetes [4]. The studies showed poor knowledge of the diabetic patient about proper diabetic diet management. Anbreenbano, et al. (2017) reported poor knowledge regarding diabetic diet in 81% participants. The diabetic type 2 patients should have up to mark dietary knowledge and keep it in practicing well [5].

Dietary Knowledge deals with the process and concepts related to health and diet, disease and diet, the nutritional value of the foods the foods that explain the nutrients within them and the recommendations that should be followed [6,7]. The Centers for Disease Control and Prevention have identified self-dietary management as a major step in assessing a patient's knowledge related to the nutritional aspects, treatment, and complications of diabetes [8]. Diabetes patients frequently face difficulty in identifying the recommended diet, including its quality and quantity. Food selection and dietary pattern are influenced by a patient's knowledge related to a recommended diet [9]. The role standing of diet in controlling of diabetes is considered imperative; still, diabetes patients are unaware of how they should approach this issue to ensure good glycemic control [10]. DK has been identified as a significant factor that influences dietary behaviors [11]. It was noted that knowledge concerning products commonly used in diabetic diet among patients with diabetes and hospital nurses was low. Both the groups, patients and nurses, need education about diabetic diet [12]. The connection between the level of knowledge and way of feeding is well established. Improper way of feeding and low level of knowledge can constitute an obstacle to achieve optimal treatment results [13].

Conversely, the challenge for the patients is how to maintain the effective dietary pattern to manage their diabetes. Diabetes patients require need many dietary and life style changes simultaneously. Patient education about dietary management will help diabetic patient to maintain normal blood sugar level. Assessment of knowledge of diabetic patients regarding diabetic diet will help us to know the level of understanding of the topic. There is need to improve the patients knowledge and provide education to them. Educating the diabetic patients on how to manage the disease through balanced diabetic diet is of utmost importance. One of the biggest challenges for health care providers today is how to address the continued needs and demands of individuals with diabetes. It will prevent from diabetes complications.

Research studies on assessment of knowledge of the diabetic patient are limited. Therefore a study was done to assess the knowledge of diabetic patients on diabetic diet.

Material & Methods

A cross-sectional survey was applied upon 100 diabetic patients to assess the knowledge regarding diabetic diet. The subjects were selected from the medicine and endocrinology OPD in a tertiary care hospital at New Delhi city. Convenient sampling was used. On the basis of the objectives and frame work developed for the study, a structured questionnaire for assessing knowledge was developed. There are two sections of the tool. Section-I consisted of socio-demography data which includes age, sex, marital status, educational qualification, family income, area of residence, types of house to live in, occupation, type of the family and educational activity attended. Section -II consisted of structured questionnaire for assessing knowledge of the subjects regarding diabetes mellitus and diabetic diet. It comprised 28 multiple choice and 6 dichotomous questions with the options YES and NO. For validation, the tool was submitted to six experts of the area. Experts were selected on the basis of experience and interest in the field of problems. They were requested to judge the items for their clarity, Relation and usefulness to the problem. A few alterations and modifications were made. Translation of the tool from English to Hindi was done for the convenience of the subjects/respondents. Reliability of the questionnaire was tested among nursing students in one of the college of nursing, in New Delhi city with Cronbach's alpha for each set of the questions range within the acceptable limit (>0.7). After obtaining ethical permission, data was collected within a period of 10 days. Purpose of the study was explained and informed consent was taken. The subjects were contacted individually and were assured of confidentiality and anonymity. Questionnaire was administered and subjects were requested to answer each question. Illiterate subjects were been dictated the tool and data was computed by investigator. Analysis of the data obtained, was done by using IBM SPSS version 26. Descriptive statistics was used like frequency and percentage. ANOVA and LEVENE'S test were used to further analysis the data.

Results

Table 1 Shows Mean Knowledge score 14.46 (maximum score 34) with SD \pm 4.52.

Table 2 Shows that Majority of subjects (50%) were in age group of 31-45 years. More than half of the subjects (55%) were females. Majority of subjects (71%) were Hindu and 35% of total subjects were educated till the primary level. The 74% of the subjects had Pukka house and 54% were living in urban area. 41% subjects were unemployed, 61% were living in nuclear family. Majority of subjects (41%) shows their monthly family income below 10000 rupee. 75% subjects were married and only 25% of the total subjects had attended educational activities on diabetes. There was statistically significant inverse relationship between mean knowledge score and age ($P = 0.001$). Younger in age had more knowledge. The table shows statistically significant relationship between mean knowledge score and educational status ($P = 0.001$). It shows enhancement in the knowledge with higher education at every step. Relationship between type of house and level of knowledge found statistically significant ($P = 0.004$). Subjects from pukka house were more aware. It shows that subjects who attended any educational activity related to diabetes and diabetic diet have more knowledge ($P = 0.010$).

Table 3 Shows that knowledge score was independent of gender, religion, marital status, occupation, type of family, area of residence and monthly family income (with $p > 0.05$).

Discussion

Present study found poor knowledge of the patient regarding diabetic diet with mean knowledge score of 14.46 ± 4.52 (maximum knowledge score was 34). Statistically significant inverse correlation was found between Knowledge score and age of the patient ($P = 0.001$) where as it was found in-line with the level of educational qualification ($P = 0.001$). The subjects from pukka house were more aware about diabetic diet ($P = 0.004$). Subjects who attended any educational activity related to diabetes mellitus and diabetic diet had more knowledge ($P = 0.010$). The knowledge score was independent of gender, religion, marital status, occupation, and type of family, area of residence and monthly family income of the patient.

These findings are supported by PurifineAke - Tano SO, et al. (2014). They found that 60.7% patients did not have a good knowledge of the recommended diet for diabetics. Among the patient, 88.5% did not have regular meal times. They did not know that eating fatty meals and fried food was not recommended for diabetics. The study concluded that strengthening nutritional support by therapeutic education section is a key strategy that should be implemented to S. D. -standard deviation improve dietary habits [14]. Similarly Bano A, et al. (2017) reported that only 19% of the patient had good knowledge, remaining 81% had poor knowledge. The study concluded that the diabetic type 2 patients should have up to mark dietary knowledge and keep it in practicing well. It will prevent from diabetes complications. There is need to improve the patients knowledge and provide education them [15].

Table 1: Knowledge score.

Variable	Maximum knowledge score	Mean knowledge score	Standard deviation
Knowledge on diabetic diet	34	14.46	± 4.52

Table 2: Relationship between knowledge score and socio-demographic variables (age, educational status, type of house, educational activity attended).

Variable		Frequency	Mean knowledge score	S. D.	p
Age (years)	15-30	18	18.17	7.44	0.001*
	30-45	50	14.76	3.55	
	45-60	22	12.05	4.86	
	ABOVE 60	10	11.60	4.97	
Educational status	Illiterate	11	10.18	1.60	0.001*
	Primary	35	12.66	3.95	
	secondary	32	13.81	4.11	
	Sr. secondary & above	22	20.4	5.13	
Type of house	Kaccha House	26	9.96	2.474	0.004*
	Pukka House	74	16.04	5.073	
Educational Activity Attended	Yes	25	15.56	6.78	0.010*
	No	75	14.09	4.64	

statistically significant at 0.05 level of significance

Table 3: Relationship between knowledge and gender, religion, marital status, occupation, type of family, area of residence, monthly income.

Variable		Frequency	Mean knowledge score	S. D.	p
Gender	Male	45	14.49	4.56	0.49 (levene's test)
	Female	55	14.44	5.81	
Religion	Hindu	71z	15.18	5.61	0.064 (ANOVA)
	Muslim	17	14	3.93	
	Christian	10	10.80	3.19	
	others	02	11	0	
Marital status	Married	25	15.16	6.02	0.12
	unmarried	75	14.23	5.07	
Occupation	Government job	06	19	5.40	0.089
	Private job	22	14.91	5.485	
	Business	30	14.73	4.68	
	Un employed	42	13.38	5.29	
Area Of Residence	Rural	46	12.85	4.392	0.102
	Urban	54	15.83	5.586	
Type Of Family	Nuclear	61	14.54	5.06	0.617
	Joint	39	14.33	5.63	
Monthly Income	Below 10000	18	13.05	5.005	0.083
	10001-20000	50	14.66	5.422	
	20001-30000	22	16.18	3.005	
	Above 30000	10	16.70	7.469	

Good dietary knowledge enables the patients to adhere proper dietary regime. Present study showed that lack of knowledge will adversely affect the treatment. Similarly, Ayele, et al. (2017) found that a statistically significant percentage (74.3%) of the study participants had poor adherence to dietary recommendations. According to the survey of participant's lack of knowledge, lack of diet education, inability to afford the cost of the healthy diet and poor awareness about the benefit of dietary recommendations were the most cited reasons for poor dietary adherence. It was concluded that the rate of non-adherence to dietary recommendation among patients with T2 DM was found to be high in northwest Ethiopia [16]. Study from Nigeria reported that more than 50% of the patients had poor Dietary Knowledge [17]. Similarly inadequate dietary knowledge was reported related to diabetic diet, in 43.42% patients [18]. Similar study reported 28.57% of type 2 diabetics had poor dietary knowledge [19]. Present study is in consistence with Wang H, et al (2015). They reported poor nutrition knowledge and practices among patient. The study concluded that Nutritional and eating education was effective in improving diabetic's nutrition knowledge and practices, and the optimal practice helped them control blood glucose effectively [20]. In a study Worku A, Mekonnen Abebe S, Wassie MM, (2015) concluded that integration of diabetic based nutrition education with motivation and home gardening was highly recommended to improve the dietary knowledge [21].

In contrast to present study Ranasinghe P. et al. (2015) reported that all were aware of the importance of diet in the management of

DM. But most had difficulty in incorporating this knowledge in to their lives mostly due to social circumstances. The study concluded that despite understanding the importance of dietary control and physical activity in the management of diabetes, adherence to practices were poor, mainly due to lack of clarity of information provided [22].

Conclusion

This study found that diabetic patients had low knowledge regarding diabetic diet. Enhancement in the level of knowledge is the felt need for the patient to adhere healthy diabetic diet. Public awareness campaign and other educational activities should be started at every level to educate the diabetic population about diabetic diet. Planned educational programs need to be strengthened by giving more emphasis to the diet plan. By improving the existing educational programs, the knowledge level can be improved so that a diabetic patient can have good control over the blood sugar level to minimize the complications associated with it. Health personnel should make use of opportunity for providing correct knowledge to diabetic patients regarding diabetic diet.

Limitations

Several limitations were noted in the study. It was a cross sectional study with small sample size. Similar prospective study with large sample size and different hospital settings should be done. The present study focused on knowledge variable. Similar study with more variables may be recommended.

Conflict of Interest: Authors clear that there is no conflict of interest involved in the study.

Acknowledgement: we acknowledged nursing students of the college for their help in the study.

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