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RESEARCH PAPER

Knowledge and Practices among Diabetic Patients in a Community

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ABSTRACT

This study was conducted to know the knowledge and practices of diabetic patient at Dumki Upazila of Patuakhali district. A cross sectional data was collected from the interested 88 patients. It was revealed that more than eighty percent (82%) of participants know about the approach of controlling diabetes. Near about 60% patients knew the symptom of diabetes. Proportion of patients who understand the symptoms of up and down of blood sugar was 77%. More than three fourth (77%) patient thought that carbohydrate is responsible for increasing blood glucose level. More than three –fifth (68%) of patients took three times meal per day. Around three fifth (59%) of the patients took regular exercise. Patients did not eat any food before walking was 27%. In this study, insulin was taken by 23% of the patients. Maximum patients (41%) took oral medicine instead of insulin due to financial burden. Maximum (36%) patients visited to doctor at six months interval while 18% not at all. More awareness program should be taken to improve nutritional views, exercise duration and other managements of diabetes among the patients in the study area.

Key words: Community, Diabetes, Knowledge, Physical exercise

Introduction

Diabetes is a major non-communicable disease, ranking as a leading cause of death and disability worldwide (International Diabetes Federation, 2013). About 80% of adults with diabetes live in low- and middle-income countries (Rahman *et al*., 2007). There were 7.1 million cases of diabetes in Bangladesh in 2015 (IDF South East Asia Region, 2012).It is increasing rapidly providing a worrying indication (Smeltzer *et al*., 2012 and Dan *et al*.,2012). Diabetes increased risks of dying with cardiovascular diseases (primarily heart diseases and strokes), chance of limb amputation, kidney failure (Morrish *et al*., 2001) and responsible for 4.8% cases of blindness worldwide (WHO, 2005). It exerts a negative pressure in the control of infectious diseases like tuberculosis and HIV. Moreover, diabetes mellitus (DM) affected more than 21 million live births of pregnancy (Young *et al*., 2009). Modifiable risk factors are associated with morbidity and mortality of the non-communicable diseases (NCDs) including diabetes. Most of the risk factors such as age, genetic, ethnicity, blood pressure, tobacco use, alcohol use, physical inactivity, knowledge about this disease have supported the need for greater awareness of prevention (Demaio *et al*., 2013). Knowledge, attitude and practice studies from South India have shown that individuals who are educated and diligent with their DM self-care gain longer term control (Rani *et al*., 2008). Dietary habits and sedentary lifestyle, overweight, and obesity (5 %) are accountable for NCDs related deaths and disabilities (Islam *et al*., 2014).More than 20 min daily moderate physical activity can reduce 27 % risk of diabetes and help to reduce weight (Islam *et al*., 2014 and Mumu *et al*., 2014). There were limited study conducted about diabetes related to dietary practice, physical exercise, knowledge and associated factors in the community level of Bangladesh. The study was conducted to evaluate the dietary patterns and physical exercise and knowledge about diabetes in diabetes patients in the rural community of Patuakhali district.

Materials and Methods

Study area

The study was conducted among the diabetic patients at different community of Dumki upazila in Patuakhali district. It is a river belt area having five unions. The unions are Lebukhali, Muradia, Pangashia, Sreerampur, Angaria.

Study population and sampling

A cross sectional study was conducted from July 2017 to December 2017 to know the knowledge and practices followed by the diabetic patients in the study area. The factors related to diabetes disease were also assessed. All those peoples who had a history of diabetes were considered to survey. All households of registered research patients were visited. Total 88 patients were enrolled in the research who met the case definition. A structured questionnaire was used to collect data on patient's age, sex, education, marital status, occupation, food habit and duration of illness. The patients were also interviewed for their dietary practices and daily physical exercise activity.

Measurement of MBI and RBS

The Random Blood Sugar (RBS), and weight and height of patients data were recorded following appropriate methods. Height was measured with a portable Harpendenstadiometer (Holtain Ltd, London, UK). The data were recorded while the participant stood, without shoes, on a horizontal flat plate attached to the base of the stadiometer with heels together and fully stretched upward with the head in the Frankfurt plane as described by Kitange (1994).

Body mass index (BMI) was calculated using the following formula:

$$Body\ mass\ index = \frac{Weight\ (kg)}{(Height\ (m))^2}$$

It was categorized according per Yazdani (2012): underweight (< 20 kg/m^2), normal (20–24.9 kg/m^2), and overweight (≥ 25 kg/m^2). Random Blood Sugar was analyzed with Glucolidder, China and categorized as diabetic patient who had RBS greater than 7.8 mmole/L.

Ethics approval

The research was conducted in accordance with the declaration of Helsinki. Written consent was obtained from the participants before collecting data. Participants were informed of their rights to withdraw from the study at any stage.

Statistical analysis

Descriptive analysis was performed to summarize the demographic characteristics of studied participants and their socioeconomic factors. The SPSS version 16 computer software was used to analyze the data.

Results

Table 1 represents the demographic characteristic of diabetic patients. Among the 88 participants, near about 45% of the diabetic patients were at the age 41-50 and 32% of the diabetic patients were at the age of 31-40. Results showed that 59% were male and 41% were female; in which 95% were married and only 5% were unmarried. Majority (77%) of the respondents followed Muslim religion and 23% were Hindu. Vegetarian people were less affected in diabetics (14%) than non-vegetarian (86%).

Table 1: Demographic characteristics of diabetic patient

Parameter	Category	Frequency	Percentage
Age	20-30 year old	8	9%
	31-40 year old	28	32%
	41-50 year old	36	41%
	51-60 year old	16	18%
Gender	Male	52	59%
	Female	36	41%
Marital status	Married	84	95%
	Unmarried	4	5%
Religion	Muslim	68	77%
	Hindu	20	23%
Food habit	Vegetarian	12	14%
	Non vegetarian	76	86%

Knowledge of diabetic patients

Table 2 describes the knowledge of diabetic patient. Eighty two percent participants know about the approach of controlling diabetic. Proportion of patients who understand the condition of up and down of diabetes was 77%. Near about 60% patients knew the symptom of diabetic patient. There were four types of symptom in diabetic patients like polyuria, loss of body weight, general weakness and delay wound healing in which maximum patients (41%) felt general weakness (Table 2). We listed four types of long term effect of uncontrolled diabetics viz. renal disorder, food disorder, hypertension and visual disorder. Fifty percent participant opined that food disorder is the main long term effect of uncontrolled diabetics. The 77% patient thought that carbohydrate is responsible for increasing blood glucose level, 14% opined for protein consumption and only 9% for fat consumption.

Table 2: Knowledge of patients on diabetic disease

Parameters	Category	Frequency	Percentage
Know about the approach of controlling diabetic	Yes	72	82%
	No	16	18%
You can understand when your diabetics up and down	Yes	68	77%
	No	20	13%
Know the symptom of diabetic patient	Yes	52	59%
	No	36	41%
Symptoms of diabetic patient	Polyuria	24	27%
	Loss of body weight	12	14%
	General weakness	36	41%
	Delay wound healing	20	18%
Long term effect of uncontrolled diabetes	Renal disorder	16	18%
	Food disorder	44	50%
	Hypertension	20	23%
	Visual disorder	8	9%
Type of food are responsible for increasing blood glucose level	Carbohydrate	38	77%
	Protein	12	14%
	Fat	8	9%
	Vitamin and minerals	0	0%

Table 3: Food intake and exercise pattern of diabetic patients

Parameters	Category	Frequency	Percentage
Frequency of food intake	2 times	12	14%
	3 times	60	68%
	4 times	16	18%
Drinking water intake/day (litter)	<2-3 liter	14	16 %
	>3-4 liter	18	20%
	>4-5 liter	56	64%
Special cooking system at home	Yes	36	41%
	No	52	59%
Sound sleep	Yes	44	50%
	No	20	23%
	Sometimes	24	27%
Physical exercise	Yes	52	59%
	No	16	18%
	Sometimes	20	23%
Eat any food before walking	Yes	48	55%
	No	24	27%
	Sometimes	16	18%
Don't take physical exercise, type of problem are you faced	Weight gain	56	64%
	Risk of heart disease	16	18%
	Stroke	16	18%
Time spend in exercise for controlling diabetics	20 minutes	44	50%
	30 minutes	28	32%
	>30 minutes	16	18%
Couldn't practice exercise	Family blockage	48	55%
	Socials interruption	28	32%
	Personal mentality	12	13%

Dietary practice and exercise pattern of diabetic patients

Table 3 represents dietary practice and physical exercise pattern of diabetic patients in the study area. Among the diabetic patients 68% took three times meal in a day whereas only 18% patient took four times meal. The patients having two times meal in a day were only 14%.

Sixty four percent patients drunk 4-5 liter water in a day; 20% respondent take 3-4 liter and 16% take only 2-3 liter water per day.

It showed that, half of the patients (50%) had sound sleep and 23% patients did not have sound sleep (Table 3). Taking regular physical exercise is the prerequisite for diabetic patients. In the study we found that 59% patients took regular physical exercise and 23% patients

took irregular exercise. Interestingly 18% patients don't take any physical exercise. Among the diabetic patients 55% ate but 27% don't eat any food before walking. 64% felt body weight gain if they don't take physical exercise. Only 18% patients exercised for more than half an hour daily but half of the patient took less than 20 minutes. Due to family blockage, 55% of the patients couldn't take proper exercise.

Medication of diabetic patients

Table 4 showed the medication of diabetics' patient. In this study, 23% patients took insulin as a medical treatment. However, most of the patients (68%) take normal medicine (without insulin). A large number of diabetic patient don't take insulin due to their financial problem (41%) or family careless (32%). Very few patients (9%) used herbal treatment (Table 4). Near about half of the patients (45%) took advice for taking diabetes mellitus treatment from local medical officer. Most importantly, maximum patients visited to doctor once in every six months (36%) of interval while 18% not at all.

Table 4: Medication pattern of diabetic patients at Dumki upazila of Patuakhali district

Parameter	Category	Frequency	Percentage
Kind of treatment are followed	Insulin	20	23%
	Non-insulin	60	68%
	Herbal	8	09%
Unconsciousness of taking insulin	Literacy	24	27%
	Financial problem	36	41%
	Family careless	28	32%
Advise considered for taking DM treatment	Diabetic specialist	16	18%
	Local medical officer	40	45%
	Pharmacy	32	36%
Advice you consider for taking herbal medicine(only 4person)	Herbal doctor	4	50%
	Relative/neighbor	4	50%
Frequency of consultation with doctors	Once in month	8	9%
	Once in two month	12	14%
	Once in six month	32	36%
	Once in year	20	23%
	Not at all	16	18%

Discussion

In this study, we found a bit higher participants (68%) who took three times meal in a day than Badreldin *et al*., (2013) who found it 59.9% in Saudi Arabia. But they observed slightly higher (23.3%) patients who ate four times meal in a day. This study showed much higher (63.63%) percentage of patients who had excess thirst than 56.6% in Ethiopia and 48% in Debre Tabor (Kassahun and Mekonen, 2017). The result showed that, 77% patients thought that the main reason for increasing blood glucose level was carbohydrate, 14% in protein, 9% in fat and 0% in vitamin and minerals consumption. Previous research found the similar association of T2DM with high intake of carbohydrates and fats. Dietary intake appears to be one of the most important factors related to diabetes. Cooking and eating practices are related to deeply rooted cultural beliefs and values, which may pose difficulty for patients' adherence to dietary guideline (Musaiger, 2006 and Yannakoulia, 2006).We found that, 59% took their physical exercise daily which was lower (44.4%) in the study done by Kassahun and Mekonen (2017). In our research, about one third (32%) diabetic patients did exercise for 30 minutes daily. Similar result observed by Kassahun and Mekonen (2017) that 31.8% did 30-60 minutes physical activities very frequently. Cockram (2000) found that changing of life style; urbanization and westernization have made people more inactive in Asian countries. According to International Diabetes Institute (2005), it is important to improve the body's insulin sensitivity and glycemic control due to adopt a healthy lifestyle and lower the mortality rates (Guerci *et al*., 2003; Svenska Diabetesförbundet, 2006). In this study, 52.5% participants were knowledgeable towards diabetes mellitus. This showed almost similar in Debre Tabor town, Ethiopia (49%) (Asmamaw *et al*., 2015) and India (49.9%) (Rani *et al*., 2008).We found 23 % patients who prescribed for insulin. It was quite higher (40.8% insulin) in hospital patient in Dhaka (Islam *et al*., 2017). It was 42 % of the participants who got insulin pills prescribed, which does not agree with the Garber *et al*., (2002). However, most of the participants in the Bai *et al*., (2009) study took oral hypoglycaemic medicine (81%). The lower insulin receiving might be due to ignorance of the community people. Our study has several limitations that should be kept in mind when using and interpreting its results. This is an observational cross-sectional study that estimates Knowledge and practice of community people. Due to illiteracy data obtained might be biased. We have not actual data on prevalence of diabetics in the study area. So type of sampling might include some bias.

Conclusion

Diabetes mellitus has become a burning issue globally with significant outcome. The study was conducted to evaluate the patients' knowledge on diabetes and their practices. Most of the patients are aware of diabetes. But they don't take proper exercise and regular visit to doctor. Financial problem is one of the major constrains to get proper treatment and specialist consultation. Patients are not taken into concerned during preparation of diet in the family. More awareness program should be taken to improve nutritional views, exercise duration and other managements of diabetes among the patients in the study area.

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