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A Cross Sectional Study on Knowledge and Attitude among Diabetic Patients about Diabetes and Its Complications

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Abstract:

Background: *Diabetes is an iceberg disease. Although diabetes has high prevalence and incidence globally, it is estimated that 20% of current global diabetic population resides in South-East Asia Region. This study was conducted to assess knowledge attitude and practice about diabetes mellitus among diabetes patients.* ***Methods:*** *This was a cross sectional descriptive study with a sample size of 100. The samples were selected purposively on the basis of*

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inclusion and exclusion criteria. A pretested semi structured questionnaire was used to collect data and consent was taken prior interview. SPSS version 20.0 was used to analyze data. ***Result****: Most of the patients were above 50 years and majority of them were Muslim. The mean income was 16100± 1.072 BDT. About 13% of the respondents knew that pancreas is the primary organ affected by diabetes and 14%, 33%, 16% thought heart, brain, leg as primary organ affected by diabetes and 24% of respondents said they don't know about it. Besides 39% of the respondents had knowledge that random blood sugar level as most reliable to monitor diabetes whereas 38 % thought fasting blood sugar level, 10% OGTT, 5% urinary sugar level and the remaining 10 % had knowledge that HbA1 is most reliable in monitoring the diabetes. Regarding management of diabetes, 45% of the respondents thought drugs diet and exercise were required in the management of diabetes whereas 7% thought only drugs, 13%thought drugs and diet control and 35% thought insulin is required in the management of the diabetes. About 85% of the respondents has attitude to visit physicians regularly whereas remaining 15% had no attitude on visiting physicians regularly.* ***Conclusion:*** *Overall knowledge, attitude and practice about diabetes among diabetes patients need to be increased for better management of diabetes and prevention of complications.*

Key words: Knowledge, Attitude, Diabetes, Complications

Introduction

Diabetes is a major and growing health problem affecting more than 171 million people worldwide and the number is expected to rise to 366 million by 2030 [1]. Demographic transition, combined with urbanization and industrialization, has resulted in drastic changes in lifestyles globally. Consequently, lifestyle-related diseases like DM have emerged as major public health problems. Diabetes is characterized by a state of chronic hyperglycemia resulting from several environmental and genetic etiologies acting jointly [2]. Until a decade ago, diabetes

was not considered a major public health problem in developing countries like Bangladesh, but the situation has now changed dramatically. According to the International Diabetes Federation (IDF) report (2011), Bangladesh now leads the world with 8.4 million diabetic patients, and this number is projected to increase to 16.8 million by the year 2030 [3]. In Bangladesh, a higher prevalence of diabetes was found in urban (8.1%) compared with rural (2.3%) populations [4].Diabetes is a silent disease and many sufferers become aware that they have diabetes only when they develop one of its life-threatening complications [5]. Knowledge of diabetes mellitus can assist in early detection of the disease and reduce the incidence of complications. Levels of knowledge about diabetes among the risk population and among those who suffer from the disease are unknown, but more knowledge is associated with better outcomes. Despite all the research, diabetes remains under diagnosed. This then ultimately presents with complications, the direct and indirect costs of which are enormous [6,7]. Diabetes care aims at improving the quality of life of patients with type 2 diabetes through good glycemic control [8], control of risk factors, lifestyle modification [9,10] prevention of complications and diabetes education [11].Diabetes education is the cornerstone of diabetes care [12,13]. Improved training of the primary health care providers and patients with diabetes is therefore beneficial [14]. Several studies of family physicians identified the need for improvement in their practices for treating and educating diabetics [15,16]. In the Bangladesh the impact of the diabetes is largely unrecognized as international and national level awareness about the public health and clinical importance of diabetes remains low. Also due to low literacy rate and socioeconomic background of people, knowledge attitude and practice about diabetes is very poor among Bangladeshi people. knowledge is the greatest weapon in fighting against diabetes mellitus because it can help people

to assess their risk of diabetes, motivate them to seek proper treatment and care, and inspire them to take charge of their disease for their lifetime. Optimum management of the problem requires an individual to be aware of the nature and consequence of the disease, its risk factors, dimensions of treatment and its complications.There have been few studies on knowledge about diabetes among newly diagnosed diabetic patients in developing countries like Bangladesh, but studies such as these are crucial for the appropriate use of limited resources in poor socioeconomic and educational conditions. This study was designed to explore patients' awareness about diabetes, attitude and practice towards diabetes and its complications among diabetic patients.

Methodology

Type of study: It was a descriptive type of cross sectional study.

Study area and Population: All the patients aged more than 18 years, both of sex, who came for treatment and follow up in Dhaka national medical college and hospital (DNMCH) and had a recent blood sugar profile on the day of interview.

Study sample and sampling method: Purposive sampling technique was followed to take sample in this study. The patient fulfilling the inclusion criteria at the time of interview were included as a sample. A total of 100 patients were interviewed during the schedule period of data collection.

Data collection tools and techniques: A questionnaire was prepared during the first week of March 2014 and it was then pretested and modified, a final questionnaire was developed in 3rd week of March. This cross-sectional survey on diabetic

subjects was conducted diabetic outdoor and indoor patients in DNMC, Dhaka, Bangladesh. Subjects were chosen who were more than 18 years old & who were able to understand clearly the instructions of the survey. All the subjects had answered voluntarily and confidently against the administered pre-tested questionnaires. Face to face interview, observation and record was done. A brief introduction was given verbally to each respondent by the interviewer at the beginning of the interview to explain the purpose and importance of the study. The interviewer filled up the questionnaire during the interview.

Data analysis: All interviewed questionnaire were checked for its completeness, accuracy, and consistency to exclude missing or inconsistent data. Data was checked, clean and edit before analysis. The study was based on primary data with descriptive cross-sectional design filled directly with the help of respondents. The data was sorted and analyzed by the software SPSS, version 17.The analyzed data was presented in tables graph chart and bars. Descriptive statistics were used for interpretation of the study findings. Cross tabulation and association were determined where applicable.

Ethical Issues: Study subjects were enrolled in the study after given informed written consent. The information given by the subjects were not disclosed without prior permission from the subject. All the subjects had given the right to withdraw his/her consent from the study at any time without giving any compensation during the study period.

Results

The Socio-demographic characteristics of the respondents

Result shows that 30% of the respondents were between 50-60 years of age, 28% of respondents were in between 40-50, 22 %

were in between 60-70, 18% were in between 70-80 whereas remaining 2% were between 30-40 years. The mean (± SD) age of the respondents was 53 (±10.52) years. About 53% respondents were female where 47% were male. Study shows that 66% had monthly income of 10,000-40,000 BDT, 20% had 41,000-90,000 BDT, 6% had 91,000-130,000 BDT and 3% had 131,000-170,000 BDT and 5% had 171,000-210,000BDT. And the mean monthly family income was 1,61,000 BDT and Standard Deviation was 10,720. Among the respondents 40% of the respondents were house wife whereas 18% were service holder, another 18% were retired and 10 % were unemployed. About 93% of the respondents had joint family whereas remaining 7% were had nuclear family **(Table-1).**

Knowledge about DM

Study shows that 13% of the respondents know that pancreas is the primary organ affected by diabetes and 14% thought heart, 33 % thought brain and 16% thought leg as primary organ affected by diabetes and 24% of respondents said they don't know about it. Study shows in multiple response, the knowledge of respondents about the causes of diabetes in which 87% of them had knowledge on causes of diabetes is increase glucose intake and 67% by family history where alcohol (83%), Smoking (82%) and high carbohydrate diet (81%) are most promising risk factors contributing of diabetes respectively. Study shows that 78% of the respondents had knowledge about frequent urination is the sign symptoms of diabetes which is followed by frequent thirst (76%), weight loss (67%), frequent hunger (61%) and asymptomatic (34%). About 39% of the respondents had knowledge that random blood sugar level as most reliable to monitor diabetes whereas 38 % thought fasting blood sugar level, 10% OGTT,5% urinary sugar level and the remaining 10 % had knowledge that HbA1 is most reliable in monitoring the diabetes. About 45% of the respondents thought

drugs diet and exercise are required in the management of diabetes whereas 7% thought only drugs, 13%thought drugs and diet control and 35% thought insulin is required in the management of the diabetes. About 57% of the respondents thought low carbohydrate diet is planned and controlled diet for diabetes whereas 11% thought avoiding sugar is planned and controlled diet 5% had thought diabetes patient can have normal diet and 27 % had thought small meal pattern 2/3 hour gapping diet is planned and controlled diet for diabetes patients **(Table-2).**

Attitude of the respondents regarding DM

Study shows that about 85% of the respondents has attitude to visit physicians regularly whereas remaining 15% had no attitude on visiting physicians regularly. About 76 % of the respondents have attitude that missing dose of their medication will have negative effect on their health whereas remaining 24 % of the respondents has attitude it has no negative effect on health. About 49% of the respondents said they could skip medication when blood glucose level comes to normal whereas remaining 51% said they can't skip medication even after normal blood glucose level. Study shows that shows that 58 % of the respondents has attitude that foot care is not necessary in diabetes patient whereas remaining 42 % of the respondents has attitude that foot care is necessary. About 44% of the respondents thought diabetes is communicable diseases and remaining 56 % of the respondents thought as no communicable disease. About 27% of the respondents thought diabetes is preventable disease and remaining 27 % of the respondents thought as non-preventable disease where about 16 percent of the respondents thought diabetes patient should go for eye checkup in every 3 month and 38 %thought in every 6 month, 40% thought in every 1 year and the remaining 6% of the respondents thought that diabetes patient don't need to go for

eye checkup. About 16 percent of the respondents thought diabetes patient should go for eye checkup in every 3 month and 38 %thought in every 6 month, 40% thought in every 1 year and the remaining 6% of the respondents thought that diabetes patient don't need to go for eye checkup **(Table 3).**

Discussion

The present study found that 30% of the respondents were between 50-60 years of age, 28% of respondents were in between 40-50, 22 % were in between 60-70, 18% were in between 70-80 whereas remaining 2% were between 30-40 years. A study by Shu Hui Ng et al showed that 56% of subjects were between 50-69 years of age and being closer to retirement or already retired, they may have different priorities or lack of self- interest [17]. There may also be lack of motivation, social support or possibly poor compliance to medications due to financial difficulties. Older patients may need frequent follow-ups and closer monitoring along with motivation and counseling stressing the importance of life-style modifications and self-management. The similar scenario is applicable for this study also because most of the patients in this study were lower income group. Regarding knowledge, attitude and practice about diabetes mellitus among diabetic patients the present study found that about 13% of the respondents knew that pancreas is the primary organ affected by diabetes and 14%, 33%, 16% thought heart, brain, leg as primary organ affected by diabetes and 24% of respondents said they don't know about it. Besides 39% of the respondents had knowledge that random blood sugar level as most reliable to monitor diabetes whereas 38 % thought fasting blood sugar level, 10% OGTT, 5% urinary sugar level and the remaining 10 % had knowledge that HbA1 is most reliable in monitoring the diabetes. Regarding management of diabetes, 45% of the

respondents thought drugs diet and exercise were required in the management of diabetes whereas 7% thought only drugs, 13%thought drugs and diet control and 35% thought insulin is required in the management of the diabetes. About 85% of the respondents has attitude to visit physicians regularly whereas remaining 15% had no attitude on visiting physicians regularly. On the other hand a recent study conducted among the diabetic patients of Western Nepal reported poor knowledge, attitude and practice scores 29 and the plausible factors could be lack of awareness, unavailability of information and literacy level of the study population. Another recent study involving young (31-40 years) diabetic Saudi women also reported poor KAP scores 30. In Malaysia, Ranjini et al reported that diabetic patients in a primary care center had good knowledge and better attitude towards the care of their own disease [18]. It was not reported whether the knowledge and attitude translated into practices. They also did not measure the actual control of diabetes that was similar to the present study. It is popular assumption that good knowledge, attitude and practice would equate to adequate control of diabetes. The UK prospective diabetic study [19] showed that each 1% reduction of HbA1c was associated with a 37% decrease in rusk of micro vascular complications and a 21% decrease in risk for any end point or death related to diabetes. On the other hand the present study found that very few (10%) of diabetic patients had knowledge on HbA1c. Besides that non randomized controlled trials [20] also found an improvement in HbA1c level as a result of monitoring at least daily compared with less frequent monitoring. A significant decrease in HbA1c levels in the patients with a poor glycemic control was observed in patients who practice self- monitoring of blood glucose [20]. Apart from that, a systematic review by Welschen et al concluded that diabetic patients might perceive better self-efficacy in disease management with self- monitoring of blood glucose and would have a better understanding about

the possible factors that affects diabetes management [21]. Moreover self-monitoring of blood glucose might also improve medication adherence and motivate patients to make necessary lifestyle changes.

Conclusion:

Overall knowledge, attitude and practice about diabetes among diabetes patients need to be increased for better management of diabetes and prevention of complications. Further large scale research is needed.

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Table-1: Socio-demographic characteristics of the Respondents

Items	Frequency	Percentage	
Age (years)			***Mean ± SD***
30 to 40	2	2	
41 to 50	28	28	
51 to 60	30	30	**53 ± 10.52**
61 to 70	22	22	
71 to 80	18	18	
Total:	***100***	***100***	
Gender			
Male	47	47	
Female	53	53	
Total	***100***	***100***	
Occupation			
Service	18	18	
Business	14	14	
Unemployed	10	10	
House wife	40	40	
Retired	18	18	
Total	***100***	***100***	
Family Status			
Joint	93	93	
Nuclear	7	7	
Total	***100***	***100***	
Monthly family Income			
10,000- 40,000	66	66	
41,000- 90,000	20	20	
91,000-1,30,000	6	6	
1,31,000-1,70,000	3	3	
1,71,000-2,10,000	5	5	
Total	***100***	***100***	

Table-2: Knowledge of the respondents about DM

Barriers	Frequency	Percent
Knowledge of the respondents regarding primary organ affected by diabetes		
Pancreas	13	13
Kidney	14	14
Brain	33	33
Heart	16	16
Don't know	24	24
Total	***100***	***100***
Knowledge on cause of diabetes (Multiple response)		
Increase Glucose Intake		
Yes	87	87
No	13	13
Lack of Insulin		
Yes	27	27
No	73	73
Defect in Gene		
Yes	10	10
No	90	90
Family History		
Yes	67	67
No	33	33
Knowledge on risk factors of diabetes (Multiple response)		
Smoking	82	82
Alcohol	83	83
Obesity	52	52
Hypertension	59	59
High Carbohydrate diet	81	81
Sedentary habit	66	66
Stress	38	38
Knowledge on S/S of diabetes		
Frequent urination	78	78
Frequent thirst	76	76
Frequent hunger	61	61
Weight loss	67	67
Asymptomatic	34	34
Knowledge regarding management of diabetes		
Drug,diet,exercise	45	45

Drug only	7	7
Drug and Diet control	13	13
Insulin	35	35
Total	***100***	***100***
Knowledge of regarding planned and controlled diet for diabetes		
Low CHO diet	57	57
Avoiding Sugar	11	11
Normal diet	5	5
small meal pattern 2/3 hour gapping diet	27	27
Total	***100***	***100***

Table-3: Attitude of the respondents regarding DM

Attitude	Frequency	Percent
Attitude of regarding regular visit to physicians		
Yes	85	85
No	15	15
Total	***100***	***100***
Attitude regarding negative effect due to missing dose		
Yes	76	76
No	24	24
Total	***100***	***100***
Attitude of patient can skip medication after normal RBS		
Yes	49	49
No	51	51
Total	***100***	***100***
Attitude of the respondents regarding necessity of foot care		
Yes	42	42
No	58	58
Total	***100***	***100***
Attitude of diabetes is communicable diseases		
Yes	44	44
No	56	56

Total	***100***	***100***
Attitude regarding diabetes as preventable disease		
Yes	73	73
No	27	27
Total	***100***	***100***
Attitude frequency of eye checkup		
3 months	16	16
6 months	38	38
1 year	40	40
Don't need to go	6	6
Total	***100***	***100***