

# ACHIEVEMENT OF AWARENESS IN A DIABETIC POPULATION

MIRZA AZIZUL HOQUE<sup>1</sup>, MD. SIRAJUL ISLAM<sup>2</sup>, MD. ABDUL MALEQUE KHAN<sup>3</sup>, REHANA AZIZ<sup>4</sup>, HAM NAZMUL AHASAN<sup>5</sup>

## Abstract

*This cross-sectional survey was carried out during the period, October 2005 to December 2005, among 184 randomly chosen diabetic patients in Khulna Diabetic Centre, Khulna, Bangladesh, to evaluate the knowledge of the patients for their control of diabetes mellitus and also to explore the association(s) of their attitude and knowledge regarding diabetic awareness towards educational status and socio-demographic profile.*

*In this study, we found a significant difference, in diabetic awareness to keep correct blood glucose level, in different educational group. But, it did not influence the subjects of different educational group to visit the diabetic clinic. There was no significant difference in the knowledge of correct blood glucose level and in regularity of visit to the diabetic clinic, in rural and urban people. Knowledge of correct blood glucose level varied significantly among male and female patients, although, no significant variation was found among them in visiting to the diabetic clinic.*

*We can conclude that, diabetic education programs can improve self-regulatory behavior and in the long run, can reduce morbidity and mortality.*

## Introduction

Diabetes mellitus (DM) continues to be a major non-communicable disease threat to global public health.<sup>1, 2</sup> More than 170 million people worldwide have diabetes, and this figure is projected to be more than double by the year 2030, if current trends continue.<sup>3</sup> It will mostly increase in South Asia. In 2007, a United Nations (UN) resolution was adopted to mark diabetes mellitus as a significance global public health issue.<sup>4</sup> In 2007, the International Diabetes Federation (IDF) estimated that 3.8 million or 4.8% of people living in Bangladesh have diabetes. By 2025, that number is expected to grow to 7.4 million or 6.1% of the population. This explosion will place Bangladesh among the top ten countries, in terms of the number of people living with diabetes, by the year 2025. At that date, 80% of all diabetes cases will be the burden in the low and middle socioeconomic countries.<sup>5</sup>

Although diabetes mellitus is an incurable disease, it can be managed properly, if the subjects are trained. Proper self-management requires patients to be aware

of the nature and consequences of the disease course, its risk factors, dimensions of treatment and its complications.<sup>6,7</sup>

## Subjects and Methods

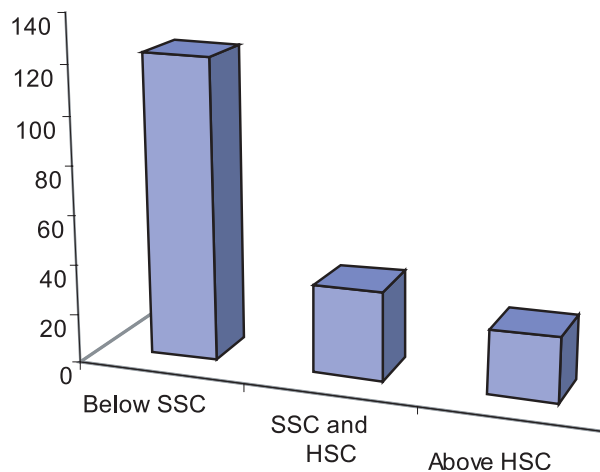
This cross-sectional survey was conducted from October 2005 to December 2005, among randomly chosen diabetic patients, in Khulna Diabetic Centre, Khulna, Bangladesh. A total 184 diabetic patients were surveyed. Those of greater than 16 years old and who could understand the instructions of the survey were included. All the subjects had answered voluntarily and confidently against the administered pre-tested questionnaires. The questions were aimed to assess the awareness of diabetes mellitus in relation to its control, management, treatment and complications. After collection of data, they were checked and verified and data analysis was performed by using Statistical Package for Social Science (SPSS, version 10). All the surveys were administered in the presence of at least two of the authors.

1. Associate Professor of Endocrinology, Dhaka Medical College, Dhaka
2. Assistant Professor of Medicine, Khulna Medical College, Khulna
3. Assistant Professor of Ophthalmology, Khulna Medical College, Khulna
4. Assistant Professor of Biochemistry, Chittagong Medical College, Chittagong
5. Professor of Medicine, Dhaka Medical College, Dhaka

**Correspondence :** Dr. Mirza Azizul Hoque, Associate Professor of Endocrinology, Dhaka Medical College, Dhaka

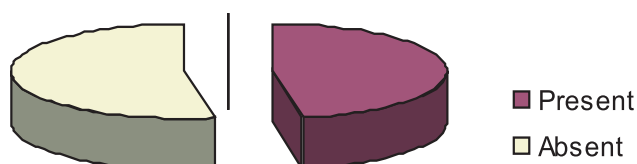
**Results**

A total 184 individuals were surveyed. Mean age of the patients was 45.29 and the SD was ±10.89 years. Mean (±SD) duration of DM of the patients was 6.99 (±5.49) years. Number of male patients were 57 (31.1%) and 127 (68.9%) were female. Figure-1 depicts the educational status of the patients.



**Fig.-1:** Distribution of patients according to educational status.

45.1% (83) patients had monthly household income of 5000 -10,000 taka, followed by 35.3% (65) with a monthly household income of below 5000 taka. Lion share of the patients were house wife (62.0%), followed by service holder (14.7%). Among the patients 78.3% (144) were from urban area and only 21.7%(40) were from rural area. A family history of DM was present in 47.3% (87) of cases (Fig-2).



**Fig.-2:** Distribution of patients according to family history of DM.

In this study we found significant difference (Chi-Square =24.47, p <0.001) in the knowledge of correct blood glucose level for good control of DM in different educational group (Table-1).

**Table-I**

*Association between education and knowledge for good control of blood glucose level in diabetic management.*

Level of Education	Amount of blood glucose in mmol/L good for health				Total
	5.0-7.0	7.1-9.0	9.1-11.0	Not known	
Below SSC	22(18.0%)	20(16.4%)	1(0.8%)	79(64.8)	122(100%)
SSC and HSC	12(33.3%)	09(25.0%)	1(2.8%)	14(38.9)	36(100%)
Above HSC	09(34.6%)	12(46.2%)	00(0.0%)	05(19.2)	26(100%)
Total	43(23.4%)	41(22.3%)	02(1.1%)	98(53.3)	184(100%)

Visit to the diabetic centre did not differ (Chi-Square =4.62, p=0.59) among different educational groups of patients (Table-II).

**Table-II**

*Association between education and regularity in visit to the diabetes centre.*

Level of Education	Regularity of visit in diabetic centre by study subjects				Total
	Last 3 visits regular	Last 2 visits regular	Last visit regular	No visit regular	
Below SSC	58(47.5%)	25(20.5%)	5(4.1%)	34(27.9%)	122(100%)
SSC and HS C	21(58.3%)	7(19.4%)	1(2.8%)	7(19.4%)	36(100%)
Above	17(65.4%)	5(19.2%)	0(0%)	4(15.4%)	26(100%)
Total	96(52.2%)	37(20.1%)	6(3.3)	45(24.5%)	184(100%)

There was no significant difference (Chi-Square =1.48, p=0.68) in the knowledge of correct blood glucose level between rural and urban patients groups. (Table-III).

**Table-III***Association between residences of the individuals with the blood glucose level beneficial for health.*

Residence	Amount of blood glucose beneficial (in mmol/L) for good health				Total
	5.0-7.0	7.1-9.0	9.1-11.0	Not known	
Rural	11(27.5%)	7(17.5%)	0(0%)	22(55%)	40(100%)
Urban	32(22.2%)	34(23.4%)	2(1.4%)	76(52.5%)	144(100%)
Total	43(23.4%)	41(22.3%)	2(1.1%)	98(53.4%)	184(100%)

There was also no significant difference (Chi-Square =4.13, p=0.247) in the regularity in visiting the diabetic clinic between rural and urban groups of patients. Knowledge of correct blood glucose level also varied significantly (Chi-Square =16.61, p=0.001) among male and female patients (Table IV).

**Table IV***Association between sex and knowledge of normal blood glucose level.*

Sex	Amount of blood glucose beneficial (in mmol/L) for good health				Total
	5.0-7.0	7.1-9.0	9.1-11.0	Not known	
Male	17(29.8%)	19(33.3%)	2(3.5%)	19(33.3%)	57(100%)
Female	26(20.5%)	22(17.3%)	0(0.0%)	79(62.2%)	127(100%)
Total	43(23.4%)	41(22.3%)	2(1.1%)	98(53.3%)	184(100%)

But there was no significant difference (Chi-Square =1.29, p=0.731) in regularity of visit to the diabetic centre between male and female patient groups.

## Discussion

There is virtually, no epidemiological study from Bangladesh assessing the level of knowledge about diabetes in general or diabetic population. Educational status was found to be positively correlated with knowledge of diabetes, in a study conducted at the Aga Khan University Hospital Karachi, Pakistan.<sup>8</sup> A study carried out in India, among general population showed grossly inadequate knowledge regarding diabetes and suggested urgent massive diabetic education program.<sup>9</sup> In this study, we found a significant difference in the knowledge of individual regarding correct blood glucose level among different educational groups. On the other hand, regularity of visit to the diabetic centre did not differ among different educational groups of patients. This finding is consistent with other studies<sup>10,11</sup> albeit with a few exceptions.<sup>9</sup> One implication of the present findings is that despite limited knowledge of diabetes, individual education might play a critical role to grip the emerging epidemic of diabetes in near future. A study conducted in Singapore on public awareness of diabetes mellitus showed that people were well

informed regarding the disease. This study had concluded that health care professionals should be more proactive in disseminating health information about diabetes to the people.<sup>12</sup>

We found no significant difference neither in the knowledge of individual to know the correct blood glucose level nor in the regularity to visit the diabetic centre between rural and urban groups of patients. Of the African rural patient population, 52.2% had lower awareness of blood glucose compared to 47.5% of the African urban dwellers.<sup>13</sup> The research findings among aboriginal diabetic patients in rural South Australia indicated that a lack of knowledge regarding management issues influenced the effects of diabetes on their lifestyle.<sup>14</sup>

In our study, overall male knew more than female about healthy life style. This finding agree with the findings of Nisar *et al.* conducted in Pakistan.<sup>15</sup>

Another study conducted in rural Northwest of Pakistan regarding knowledge of diabetes among patients, showed that high proportion of males have better understanding of diabetes symptoms, signs and

complication as compared to females and gender difference was not significant when question about suitable diet was asked for. <sup>16</sup> This study also showed that males were more aware of diabetes mellitus, healthy diet and life style modification. <sup>16</sup>

#### Conclusion:

Diabetes mellitus is a heterogeneous disease associated with long term morbidity, mortality and imposes individual, national or global enormous negative economic impact, if left untreated or maltreated. It is spreading all over the world, progresses nearly a geometric course and causing a major reason for apprehension. The main approach to manage this problem is to educate, convince and create a suitable environment to learn the nature and consequences of the disease, both for the affected and non-affected population of the community. Health care professionals, different kind media, political workers, teachers of different levels may play a significant role in achieving awareness for effective control and management of this globally affected issue.

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