

Knowledge and use of HbA1c among patients with type 2 diabetes mellitus admitted in a tertiary hospital

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Background

Glycosylated hemoglobin (HbA1c) test is the most widely accepted gold standard biochemical indicator of long term glycemic control in diabetic patients.

In recent years there has been an increased focus on encouraging patients to be aware of HbA1c.

Objectives

General

To observe the level of knowledge of HbA1c and its use among patients with type 2 diabetes mellitus in medicine ward of Dhaka Medical College Hospital

Specific

- To observe the socio-demographic status of patients with type 2 DM
- To assess the level of knowledge of HbA1c values in patients with type 2 DM
- To evaluate the association between level of HbA1c awareness and glycemic control

Methodology

Study Design

Descriptive cross-sectional study

Place of study

Dhaka Medical College & Hospital - Medicine Ward

Period of study

May to November 2016

Study population

Type 2 DM patients admitted in medicine ward

Sample size

was calculated with following formula-

$$n = \frac{z^2 pq}{d^2}$$

Here, n = Desired sample size

z = Standard normal deviate at 95% confidence level = 1.96

p = Prevalence

q = 1-p = 1-0.5=0.5

d = Allowable error

Inclusion criteria:

- Age more than 18 years
- Patients with type 2 DM admitted in medicine ward

Exclusion criteria:

- Unconscious patients
- Patients with mental illness
- Pregnant diabetic patients
- Patients with recent blood transfusion
- Patients with haemoglobinopathies

Study Procedure

- Conducted among 220 cases of DM admitted in medicine ward of DMCH during the period of May to November 2016
- Patient's data were documented by a semi structured questionnaire
- Collected data were analyzed by SPSS version 22
- Results were presented in mean, standard deviation (SD) and percentages
- "P" value <0.05 was considered as significant

Results

Table 1: Socio-demographic characteristics

Variables	Frequency (n=220)	Percentage (%)	Variables	Frequency (n=220)	Percentage (%)
Age (years),mean ± SD	54.7±10.3		Occupational status		
Gender			Service holder	65	29.5
Male	130	59.1	Self employed	54	24.5
Female	90	40.9	Housewife	78	35.5
Marital status			Retired	17	7.7
Unmarried	21	9.5	Unemployed	6	2.7
Married	169	76.8	Monthly income		
Widowed	30	13.6	<5,000 BDT	52	23.6
Education			5-10,000 BDT	56	25.5
Illiterate	36	16.4	10,000-20,000 BDT	68	30.9
Primary	34	15.5	>20,000 BDT	44	20.0
SSC	49	22.3	Area of living		
HSC	59	26.8	Rural	158	71.8
Graduate and above	42	19.1	Urban	62	28.2

- Mean age of study population was 54.7 ± 10.3 years
- 130 (59.1%) were male and 90 (40.9%) were female
- 76.8% patients were married
- 35.5% patients were housewife
- Family income of majority of patients (30.9%) was 10,000- 20,000 BDT per month

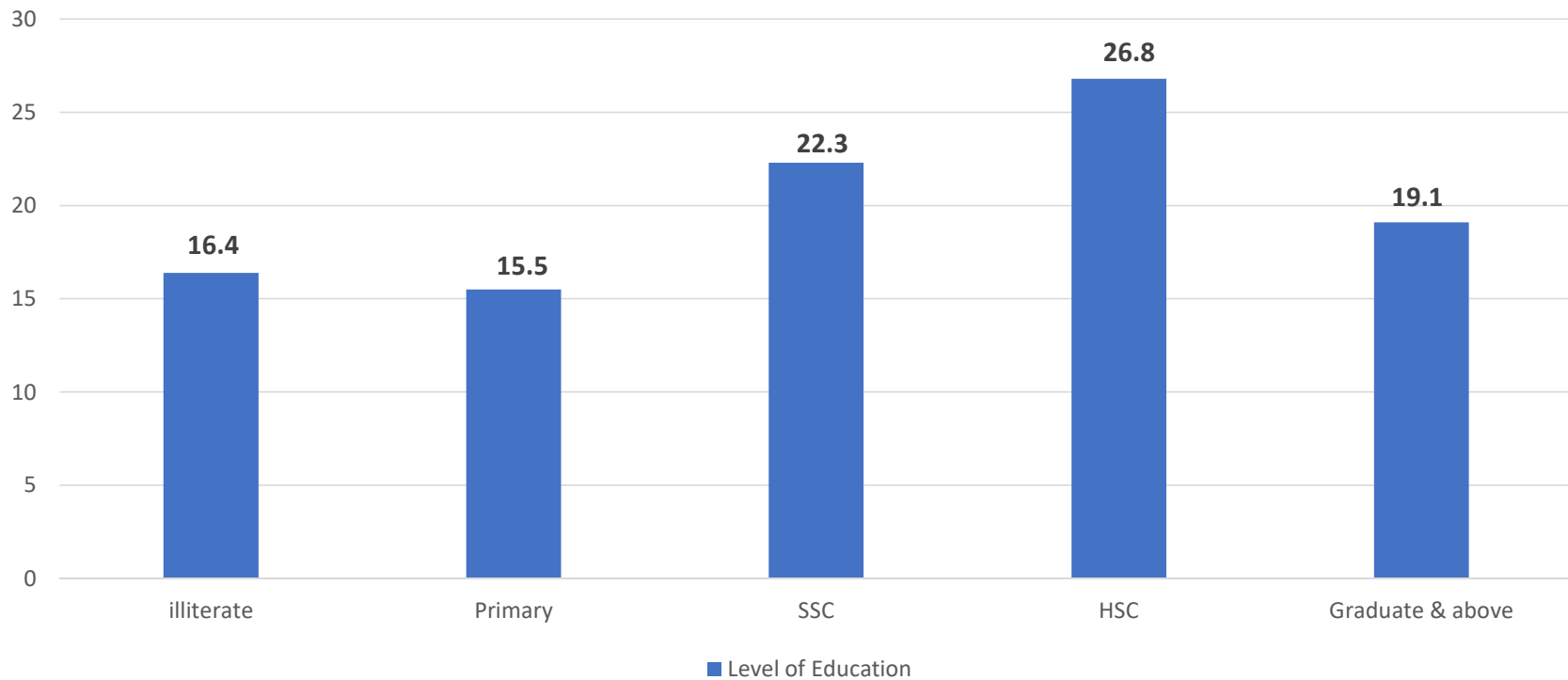


Figure 1: Level of education of study population (n=220)

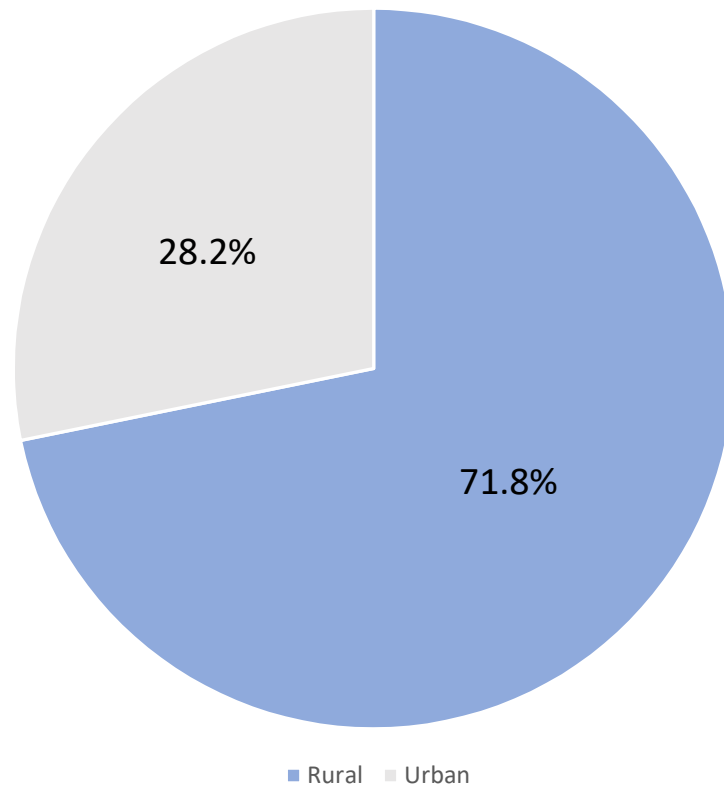


Figure 2: Distribution according to area of living (n=220)

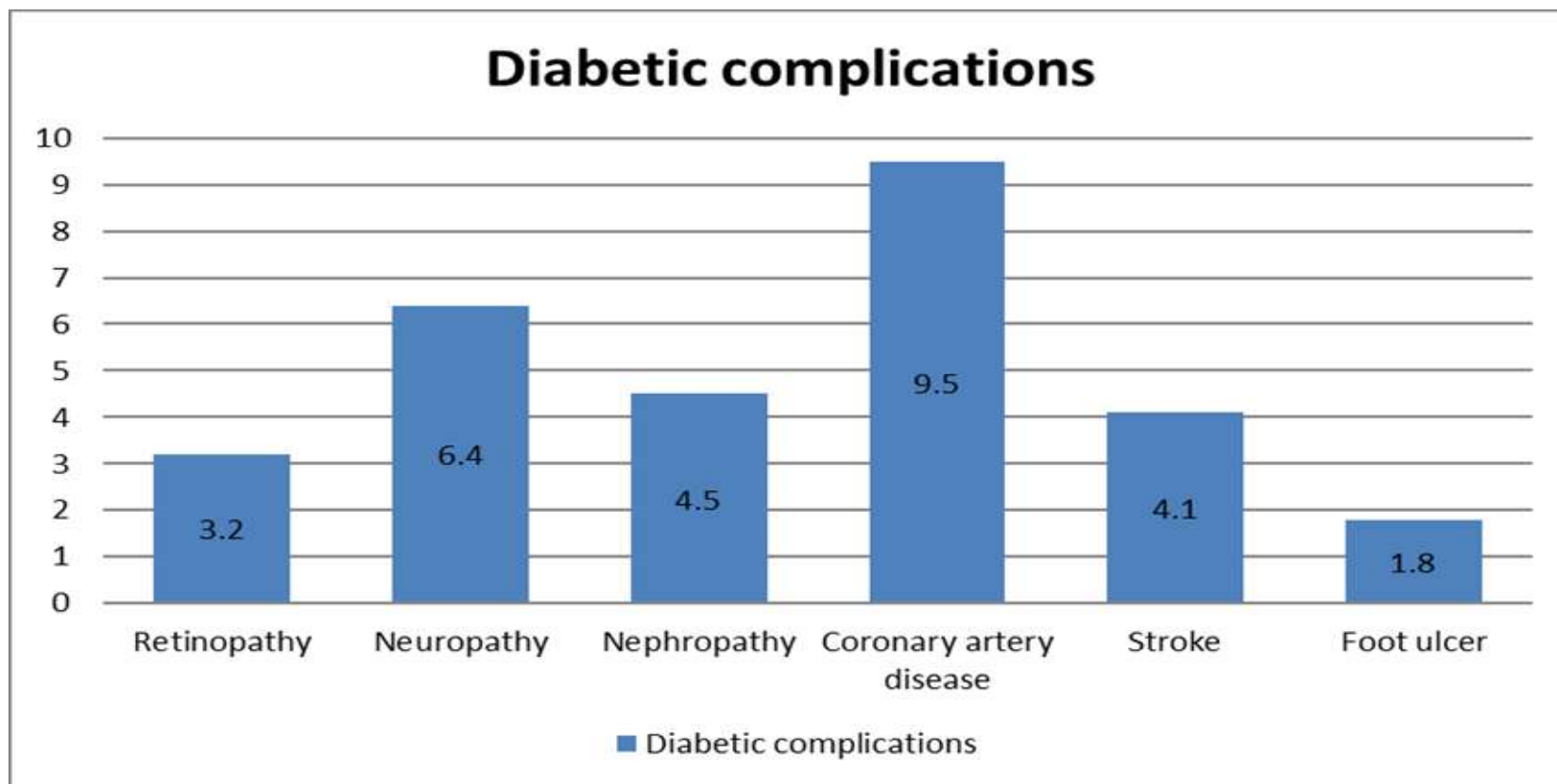


Figure 3: Frequency distribution of diabetic complications (n=220)

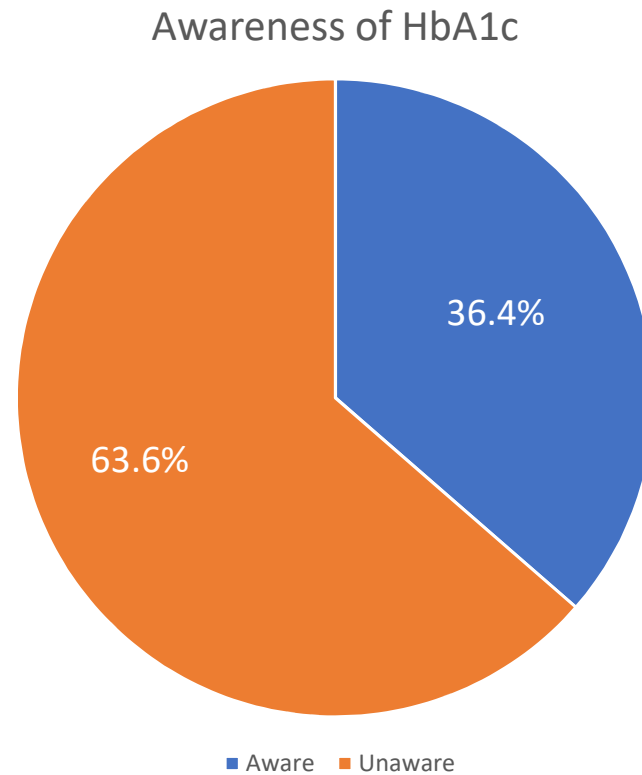


Figure 4: Awareness of HbA1c among study populations (n=220)

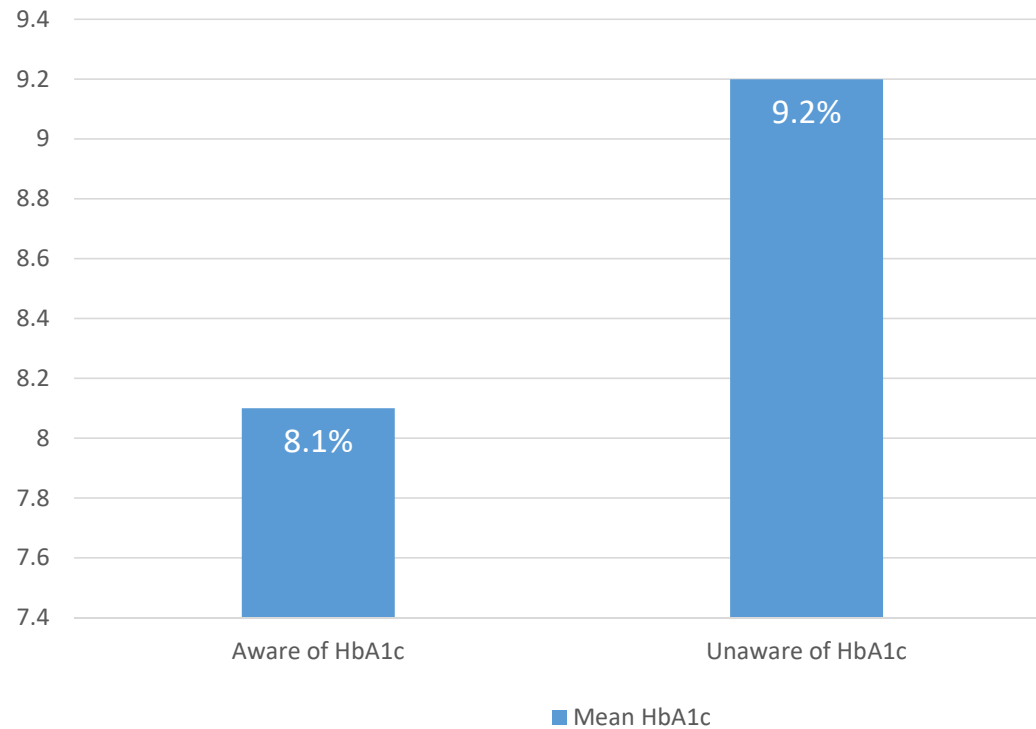


Figure 5: Mean HbA1c (%) between aware and unaware patients

Table 2: Comparison between aware and unaware patients about HbA1c

Variables	Aware patients n=80	Unaware patients n=140	P value
Values are mean ± SD			
Age (years)	53.2 ± 12.9	55.5 ± 8.4	0.112
Duration of DM (years)	8.1 ± 6.2	9.3 ± 5.3	0.129
Mean HbA1c (%)	8.1 ± 1.7	9.2 ± 1.3	<0.001
Values are n (%)			
Education			
Illiterate	2 (2.5)	34 (24.3)	<0.001
primary	5 (6.3)	29 (20.7)	<0.001
SSC	7 (8.75)	42 (30)	<0.001
HSC	32 (40)	27 (19.3)	0.51
Graduate and above	34 (42.5)	8 (5.7)	<0.001
Glycemic control			
HbA1c <7%	40 (50)	38 (27.1)	0.001
Diabetic complications	15 (18.8)	50 (35.7)	0.008

Limitations

- Single center
- Small number of patients
- Does not represent the general population with diabetes in Bangladesh

Conclusion

In this study, knowledge about HbA1c test and their target goal had a positive impact on glycemic control.

These findings emphasize the need to raise patient awareness regarding importance and utility of HbA1c test in achieving better glycemic control as well as reducing long term complications of diabetes.

Recommendations

- Strategies to increase HbA1c awareness and better glycemic control for ensuring optimum management of diabetes
- Multi-centered follow up studies with large sample size to determine the long term implications of HbA1c awareness

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Thank You