

# A study of awareness regarding diabetes mellitus among patients attending a tertiary care ophthalmology centre

<sup>1</sup>Dr Chandana Kakati, <sup>2</sup>Dr Biplab Das Gupta

<sup>1</sup>Assistant professor, <sup>2</sup>Junior Resident  
Department of Ophthalmology,  
Gauhati Medical College and Hospital  
Bhangagarh, Guwahati - 781032, Assam, India

**First and corresponding Author - Dr Chandana Kakati**

**Original paper**

## *Abstract*

**Introduction-** Diabetes mellitus is a disease that causes many complications leading to various morbidity and premature mortality. Many such complications can be prevented by appropriate measures in right time. The current study aims to assess awareness regarding diabetes mellitus in patients attending a tertiary care ophthalmology centre in north east India from January 2020 to December 2020.

**Study design-** analytical cross sectional study

**Material and Methods-** known diabetes mellitus are included, pre diabetics excluded from current study. A 10 question proforma was filled up after one to one interview basis and. A positive response considered aware and more than 50 % positive response in a proforma considered to have adequate knowledge regarding diabetes. Collected data analysed. Awareness level and association of variables analysed statistically.

**Result-** 100 patients included in current study. Of this 27 % had adequate knowledge regarding diabetes mellitus , 67 % patients had general idea regarding diabetes , glycemic awareness 57 % , complication awareness 57 % , sugar monitoring importance awareness 52 % .Normal blood sugar level 52 % , insulin in treatment of diabetes known to 84 % ,hypoglycaemia management know to 71 % , basic diet and lifestyle modification knowledge 71 % and 58 % respectively and importance of blood sugar control known to 61 % . Only statistically significant association was found between previous counselling and diabetes awareness (P value < 0.005)

**Conclusion-** Awareness regarding diabetes in our study found to be low, with only 27 % being adequately aware regarding diabetes mellitus, its management and complications. However previously counselled patients had more awareness than those who were not counselled. A well planned and aggressive counselling program can help to increase awareness in these patients thereby reducing burden of diabetic related morbidity and mortality in these patients.

**Keywords:** Diabetes mellitus, Awareness level

## **Introduction**

Diabetes mellitus is a group of diseases that affects glucose metabolism in human body resulting high level of glucose in blood stream. The main causative factor in diabetes mellitus is reduction or absence of pancreatic insulin. This in long run causes multisystem involvement resulting in serious disability and/or premature death.

Diabetes accounts for around 4.6 million death worldwide <sup>1,4</sup>.Global diabetes prevalence was 463 million in 2019, expected to rise to 578 million by 2030 and 700 million by 2045<sup>2</sup>.India ranks number two in prevalence of diabetes with 77 million in 2019, with projection of 101 million in 2030 and 134.2 by 2045<sup>3</sup>.

From above data it is evident that diabetes is going to be one of top reason for disability and premature death in a vast group of people .However these complications can be differed or prevented if appropriate action is done at right time. It is also known that increased knowledge and awareness regarding diabetes can help to increase in treatment compliance and self care thereby improving health of diabetic patients <sup>5,6</sup>

The aim of current study is to assess awareness of diabetes among known diabetic patients attending a tertiary care ophthalmology center in north east India. It is an analytical cross sectional study.

**Study design**—analytical cross sectional study

### Material and method

This analytical cross sectional study was conducted in Department of Ophthalmology, Gauhati medical college and hospital, Guwahati, Assam from 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2020. Ethical committee clearance was taken from Institutional ethical committee. Only known diabetes mellitus patients were included in current study. Pre diabetics, type one diabetic or gestational diabetic were excluded from current study. The cases were selected by convenient sampling method

After taking written informed consent, the patients were interviewed by an experienced interviewer with a preformed proforma on one to one basis. The questions include socio- economic status, knowledge regarding various aspects of diabetes mellitus, its management and complication, family history and previous counseling status etc. Total 10 questions were asked to assess awareness level of diabetes mellitus, Positive response is considered aware and negative answer considered unaware for each question. Positive response for more than or equal to 50% questions in each proforma considered as aware of diabetes mellitus. Data collection and analysis done with Microsoft excel software and statistical analysis done using MedCalc Software Ltd. Odds ratio calculator<sup>8</sup>.

### Results

Total 100 patients included in current study. Of this, 51 female and 49 male with age range from 41 to 81 years. Out of this 49 patients had duration of diabetes less than or equal to 5 years and 51 had duration more than 5 years. Positive family history was found in 33 patients. Only 18 out of 100 were previously counseled regarding diabetes mellitus.

Socio demographic data	number	
Sex	Male	49
	female	51
Age	≤ 50 years	13
	> 50 years	87
Duration	≤ 5 years	49
	< 5 year	51
Family history	positive	33
	negative	67
Previously counseled	yes	18
	no	82

Table1 demographic data

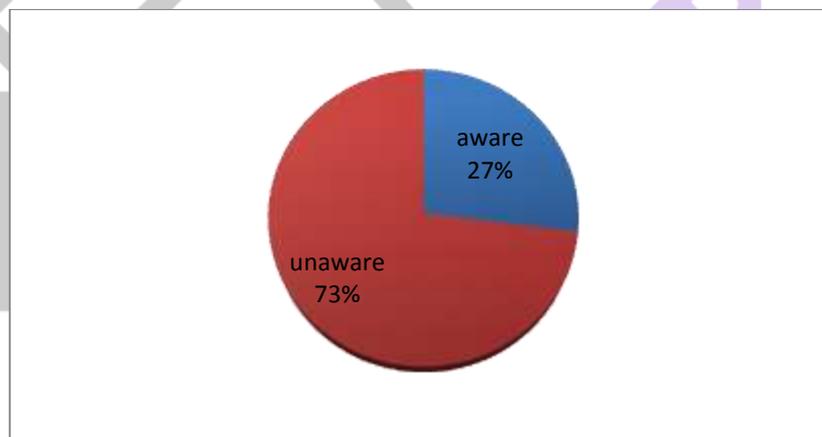


Chart - awareness of diabetes

Serial number	question	Aware in percentage	Unaware in percentage
1	General idea of diabetes mellitus	67	33
2	Importance of glycemic control	37	63
3	Awareness of complication	57	43
4	Importance of blood sugar monitoring	51	49
5	Awareness regarding insulin	84	16
6	Normal blood sugar level	52	48
7	Management of hypoglycemia	71	29
8	Basics of diet modification	72	28
9	Basics of lifestyle modification	58	42
10	Importance of regular check up	61	39

Table 2 Performa and responses

variable		Aware	unware	Total	Odds ratio	95% CI	P value
Sex	Male	14	37	49	1.0478	0.4331 to 2.5349	0.9175
	female	13	36	51			
Age year	< 50	2	11	13	0.4509	0.3206 to 2.41817	0.3221
	> 50	25	62	87			
Duarion years	≤ 5	12	37	49	0.7784	0.3206 to 1.8898	0.5798
	>5	15	36	51			
Family history	positive	12	21	33	1.9810	0.7952 to 4.9347	0.1421
	negative	15	52	67			
Previously counseled	yes	10	8	18	4.7794	1.6359 to 13.9633	0.0042
	no	17	65	82			

Table 3- association of variables.

In our current study 27 percent people had general awareness regarding diabetes while rest 73 % lacked adequate awareness regarding diabetes. We had 57 % cases who had idea regarding diabetes complication .Glycemic control awareness was 37 % and 51 % had knowledge about regular blood sugar monitoring. Knowledge regarding insulin was present in 84 % cases and 52 % had knowledge regarding normal blood sugar level .Basics of diet modification was known to 72 % and life style modification awareness 58 % . We had 71 % cases that had knowledge regarding management of hypoglycemia and 61 % had idea regarding importance of regular checkup.

Regarding variables ,it was found that previously counseled patients had awareness level 55 % ,while awareness among non counseled was 20.7 % , the association being clinically significant (P <0.005). However no other such association was found in current study.

### Discussion

In this study the number of male and female was almost equal, male 49 and female 51. Out of 100, 87 % aware in age group above 50 years with age range 41 to 84 years. However all these period calculated from diagnosis of diabetes as pre diabetics are excluded from current study .All total 33 % had positive family history and 18 % had been previously counseled.

Awareness level in our study was 27 % , which was however lower than studies done by V.Aligan at al who found awareness level 63.17 %<sup>9</sup>.However general idea regarding diabetes found to be 67 % in our which is intermediate to studies by V.Aligan et al (91.5 %)<sup>9</sup> and Noohu et al ( 35.12 %)<sup>10</sup>.

In our study we had 37 % awareness regarding glycemic control, in comparison to 77 % found by Ujwal L Yeole et al<sup>11</sup>.Awareness regarding complication was 57 % in our study while V.Alijin et al found it to be 63.2 %<sup>9</sup>.Importance of blood sugar monitoring awareness present in our study was 51 % while Niveen M Daoud et al found it to be 60 %<sup>13</sup>.Awareness regarding insulin found to be 84 % in our study while Noohu et al found it to be 80.49 %<sup>10</sup>.Normal blood sugar level awareness 52 % in our study in comparison to 84.3% found in study by Niveen M et al<sup>13</sup>.Management of hypoglycemia awareness 71 % in our study , while it was 95.12 % in study done by Noohu et al<sup>10</sup>.Basics of life style modification awareness 72 % in our study , which was 69 % in study by V.Ajin et al<sup>9</sup> and 63 % by Ujwal et al<sup>11</sup>.

Basics of diet modification awareness 72 % in our study and 69 % in study by V. Alijin et al<sup>9</sup>.Similarly we found awareness regarding regular check up 61 % in our study while it was found to be 19.8 % by V.Alijin et al<sup>9</sup>.

However there was only association of variable found to be clinically significant in our study was that of association between previous counselling and awareness level .In our study we found that that patients who were previous counselled had more awareness regarding diabetes in comparison to non counselled patients and the difference is clinically significant (P <0.005) . This correlates with study by Randheer et al<sup>14</sup> which also stated that counselling increased awareness regarding diabetes in patients with diabetes mellitus.

### Conclusion

In our study, awareness regarding diabetes in patients of diabetes mellitus found to be low. A lot of scope is there to improve the current scenario. A proper and well structured counselling and awareness campaign can definitely improve this scenario and help reduce diabetes related mortality and morbidity in these patients. A good counselling protocol is a good initiative in increasing awareness in diabetes mellitus patients, as demonstrated in this study.

**Financial disclosure** ---Authors have no financial interest in current study

**Ethical clearance** - Ethical clearance was taken from Institutional ethical committee.

### References

- [1] Unwin N , Whiting D , Guariguata L , Ghytool G , Gan D, International diabetes Federation ; 2011 PP , 11-74 (Google scholar )
- [2] Pouya Saedi , Inga Peterson Paraskevi Salpea , Dominic Bright , Rhys Williams Belma Malanda Suvi Karuranga ,Nigel Unwind , Stephen Colagiuri , Lenor Guariguata , Ayesha AMotale Katherine Oguartosova , Jonathon E Shaw , International diabetes federation atlas 9<sup>th</sup> edition Res clin Pract 2019 Nov ;157:107843 doi 10.1016/j.dia.bress . 2019 170843 , E Pub 2019 Sept 10

- [3] Anjana RM , Pradeepa R , , Deepa M , Datta M ,Sudha V ,Unnikrishnan R et al .Prevalence of diabetes ( impaired fasting glucose and / or impaired glucose tolerance ) In urban and rural India .Phase 1 results of Indian council of medical research –India DIABetes ( ICMR –INDIAB ) study *Diabetologica* 2011 ; 54;3022-7 .(Pubmed )( google scholar )
- [4] M Deepa, A VBomali , T Kaur , Knowledge and awareness of diabetes in Urban and Rural India ; The Indian council of medical research India Diabetes study ( phase 1 ) *Indian journal of Endocrinologicalm Met lab* 2014 May- June ;18 (3):379-385
- [5] Viseer A , Snoek F , Perspective on education and counselling for diabetes patients , *Patient Educ Couns.*2004 ; 53 :251-5 ( google scholar )
- [6] Rani PK , Raman R , Subramoni S , Perumal G , Kumaramanickoud G ,Sharma T ., Knowledge of diabetes and diabetic retinopathy among rural population in India and the influence of knowledge of diabetic retinopathy on attitude and practice, *rural remote health* , 2008 ;8:383 (Pubmed )(google scholar )
- [7] S Somannavar, H Lanthorn, R Preadeepa , V Narayan , M Rena , V Mohan Preventive Awareness Counselling and evaluation ( PACE ) Diabetes Project : A multi pronged Program for diabetes Awareness and Prevention in south asia( PACE 5 )*JAPI Ebook JUNE 2008 volume : 56*
- [8] Medcalc software Ltd. Odds ratio calculator ;[https://www.medCalc.org/Calc/odds-ratio.php\(version20.008;accessed June 28' 21\)](https://www.medCalc.org/Calc/odds-ratio.php(version20.008;accessed June 28' 21))
- [9] V.Aljin ,R Umadevi , V M Anantha Eashwar , Awareness of diabetes among patients with type 2 diabetes mellitus attending a rural health and training center – *International journal of community Medicine and Public Health* –2018 Oct; 5 (10 ) : 4597-4602.
- [10]Rahman UZ , Irshad M, Khan I Khan , Biag A , Goahar QY.A survey of awareness regarding diabetes and its management among patients with diabetes in Peshawar , Pakistan , *JPost Med.Inst*2014 ; 28 (4 ) :372-7 .
- [11]Noohu Abdulla Khan , V V Venkatachalan , Khaled M , Al Akhali, Sirajuudin S , Alevudum CK , Dhanpal Asi Ansari , Shaik Mohamad Overview of glycemic control , knowledge ,, awareness and attitude among type 2 diabetes male patients , *J App. Pharma* vol 7 issue 1 : 75-82 January 2015
- [12]Ujwal L Yeole , Maria P jia nadani 2 , Hashmeet kaur Bakshi , Shailaja Kale Awareness of diabetes mellitus and glycemic control among patients with type 2 diabetes. *Indian Journal of Public health research and development* vol 2 N06 (2020 )
- [13]Niveen M Doud , Mashaal M Ali –Otataibi and Noof M Ali –Qethami : Survey of knowledge and awareness concerning different aspect in Adult diabetic patients in Taif City –*Journal of diabetes and Metabolism* ( research article - -2019 volume 10 Issue 11 ).
- [14]Ranadheer choudhury , Puvvada , Vijey Aanandhi muthukumar : Impact of patient counselling on the knowledge , attitude , practice and quality of life in patients with hypertension with diabetes mellitus 2. *Indian Journal of Pharmacological education and research* , 2018 ; 52 (2) : 305-310