



## Assessment of Psychiatric Comorbidities in Diabetic Patients and its Relation with Socio Demographic Profile

Authors

**Sukanti Chand<sup>1</sup>, Gopal Chandra Kar<sup>2</sup>, Surjeet Sahoo<sup>3</sup>, Snehalata Choudhury<sup>4</sup>**

Corresponding Author

**\*Sukanti Chand**

PhD Trainee, Deptt of Psychiatry, IMS & SUM Hospital, SOA University, Bhubaneswar.

Email: [Skantichand68@gmail.com](mailto:Skantichand68@gmail.com)

### Abstract

*Psychiatric illnesses as well as diabetes are common. Diabetes is a chronic disease is frequently associated with psychiatric disorders. Very few studies have conducted in India in this regard. The present study aims to determine the co morbidities of psychiatric disorders in diabetes patients and to correlate psychiatric comorbidities with socio-demographic data on 50 samples. Results revealed a high incidence of psychiatric illnesses among patients with diabetes. Also it shows that chronicity of diabetes is strongly related to the comorbidities of psychiatric illnesses. Hence early diagnosis and management of co morbid psychiatric illnesses may also help in Diabetic management and outcome.*

**Key words:** *Psychiatric disorders, diabetes, anxiety, depression*

### INTRODUCTION

Diabetes and psychiatric disorders share a bidirectional association - both influencing each other in multiple ways. The interface of diabetes and psychiatry has fascinated both endocrinologists and mental health professionals for years<sup>1</sup>. Way back in 17<sup>th</sup> century Thomas Willis speculated that diabetes was caused by "long sorrow and other depressions." In 1899, Maudsley wrote: "Diabetes is a disease which often shows itself in families in which insanity

prevails: whether one disease predisposes in any way to the other or not, or whether they are independent outcomes of a common neurosis, they are certainly found to run side by side, or alternately with one another more often than can be accounted for by accidental coincidence or sequence"<sup>2</sup>. Recent research confirms that a range of psychological problems and psychiatric disorders are common in people with diabetes. Such problems are important not only because of the suffering caused but also because of their

impact upon the management and outcome of the diabetes itself<sup>3</sup>. Insulin coma therapy was used as a psychiatric treatment within a decade of isolation of insulin.

### **AIMS AND OBJECTIVES**

Purpose of present study is limited to establishment of prevalence rate of psychological and psychiatric morbidities and various sociodemographic variances operating on it. Since this type of study in India has been very few, and literature shows significant percentage of people suffering from psychiatric problem with diabetes as the comorbidity, it is expected this study will probably fill up the requirement necessary in the psychological management by offering its various findings and making the Educationist aware of the need for psycho-social intervention in the diabetic patients.

1. To study the psychiatric morbidity in patients diagnosed as diabetes mellitus.
2. To correlate psychiatric morbidity with socio demographic data.

The study was conducted at IMS & Sum Hospital in the Dept. of Psychiatry, Bhubaneswar and at The Brain & Research Centre - Clinic & Treatment Centre for Mind & Nervous Diseases, Cuttack. The patients are mostly referred from Specialists and General Practitioners. After diagnosis of diabetes mellitus was made, were referred to psychiatric O.P.D.

### **THE SAMPLE**

Consecutively Fifty cases were selected for the study with age varied from 18 to 65 years. Twenty six were males and twenty four females. Their life situation also varied in respect of their marital status, religion, education and socio-economic status etc. Each patient was assessed on their age at the onset of diabetes and duration of diabetes was determined. History taking and their mental status examination was done in a semi structured interview format. General information and socio-demographic data of the patients like age, sex, marital status, type of family, monthly income, education, occupation and place of residence was recorded using ICMR socio-demographic data proforma. Socio-economic status was determined as per WHO social score method. Control was taken as the spouse or accompanying person with the patient but without diabetes in the same age group. After exclusion 35 nos were taken.

### **INSTRUMENT**

1. Semi structured interview proforma.
2. ICMR (Indian Council of Medical Research) socio-demographic data proforma.

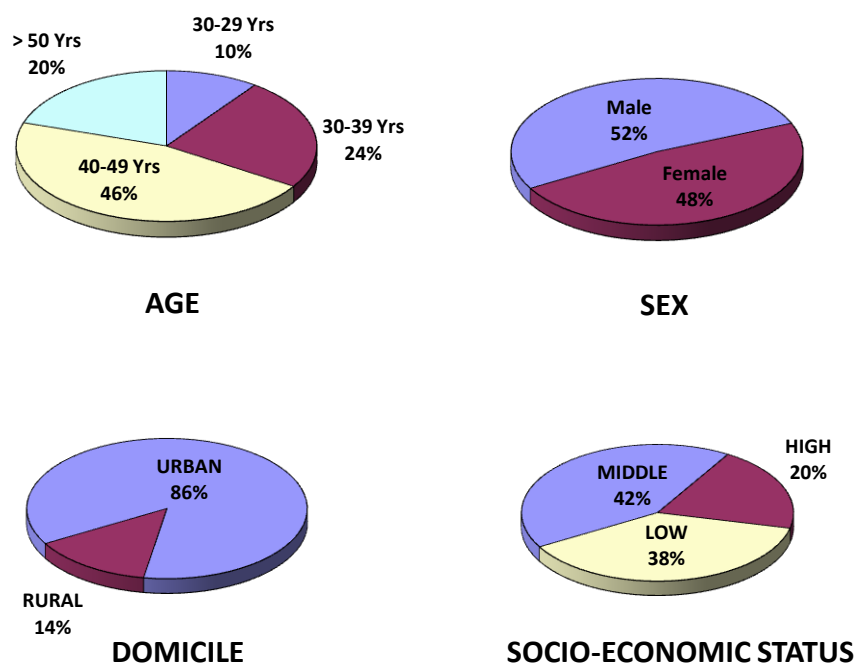
**OBSERVATIONS**

**TABLE – 1** Socio Demographic Variables Ofdiabetic And Non Diabetic Samples

Characteristics under comparison		Diabetics (n=50)	Percentage	Nondia betic (n=35)	percent age
AGE	MEAN	40.54		39.60	
	18-29	5	10	6	17.2
	30-39	12	24	8	22.8
	40-49	23	46	12	34.3
	50-65	10	20	9	25.7
SEX	MALE	26	52	20	57
	FEMALE	24	48	15	43
MARITAL STATUS	UNMARRIED/ALONE	5	10	6	17.2
	MARRIED (WITH FAMILY)	45	90	29	82.8
SOCIO-ECONOMIC STATUS	HIGH	10	20	7	20
	MIDDLE	21	42	18	51.4
	LOW	19	38	10	28.6
DOMICILE	RURAL	7	14	5	14.3
	URBAN	43	86	30	85.7

The table shows more or less similarity with respect to age, sex, and living conditions whereas differences in respect to socioeconomic status and domicile they represent.

**Fig. 1** Socio Demographic Variables Ofdiabetes Mellitus Patients

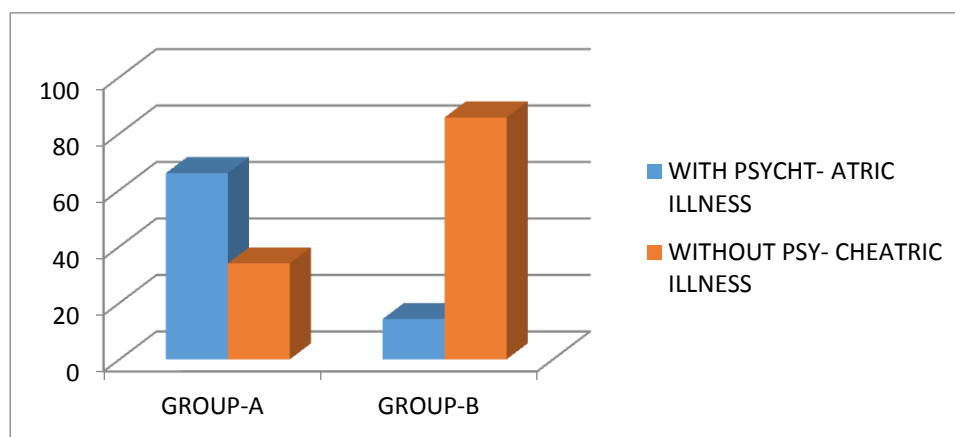


**TABLE 2** Comparison between Psychiatric manifestations in A. diabetic (n=50) and B. nondiabetic (n=35).

GROUPS	SUBJECTS STUDIED (n)	WITH PSYCHT-ATRIC ILLNESS	WITHOUT PSY-CHIATRIC ILLNESS	'Z' VALUE	'P' VALUE
Group-A	50	33(66%)	17(34%)	3.91	0.0001
Group-B	35	5(14.3%)	30(85.7%)	7.7	0.0001

Z value in Group A is 3.91 and Z value of Group B is 7.7 which are statistically significant.

**FIG-2** Comparison of psychiatric illnesses between Diabetic (Group-A) and Non-diabetic (Group-B) samples



**TABLE-3** Psychiatric comorbidities in Diabetic patients

PSYCHIATRIC ILLNESSES	GROUP-A N=50	%	GROUP-B N=35	%	CALCULATED 'Z' VALUE	'P' VALUE
ANXIETY DISORDERs	23	46	03	08.57	6.54	0.0001
DEPRESSIVE DISORDERs	21	42	02	05.71	6.87	0.0001
PSYCHOTIC DISORDERs	03	06	01	02.86	4.31	0.0001
EATING DISORDER	01	02	00	0	Not compared	
COGNITIVE IMPAIRMENT	01	02	00	0	Not compared	
SEXUAL DISFUNCTION	04	08	00	0	Not compared	

'Z' value of anxiety disorder, depressive disorder and psychotic disorder are 6.54, 6.87 and 4.31 respectively which are statistically significant.

FIG-3 Psychiatric comorbidities in Diabetic and Non-diabetic patients

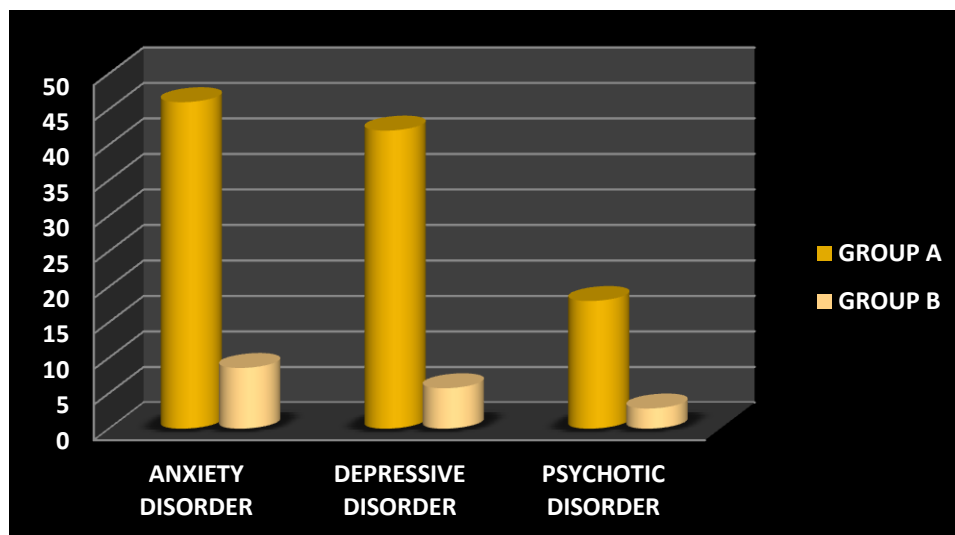
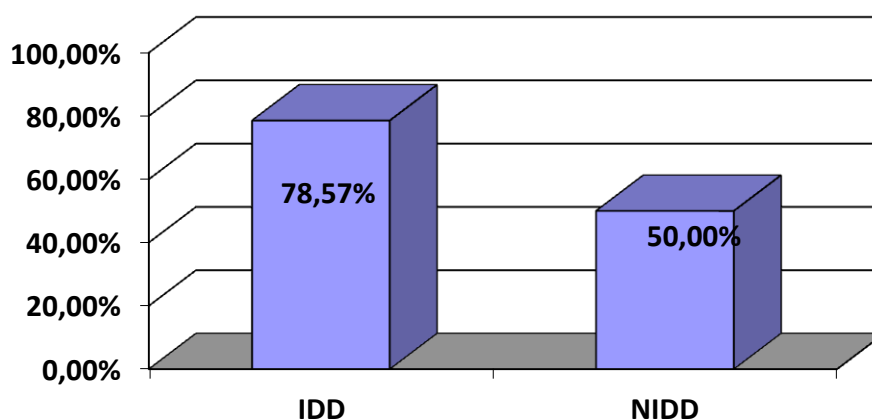


TABLE – 4 Type of Diabetes mellitus and its relationship with Psychiatric illness (n=50)

TYPE OF DIABETES MELLITUS	TOTAL NO. STUDIED	WITH PSYCHIATRIC ILLNESS	WITHOUT PSYCHIATRIC ILLNESS	PERCENTAGE WITH PSYCHIATRIC ILLNESS
Insulin Dependent Diabetes (IDD)	28	22	6	78.57%
Non-Insulin Dependant diabetes (NIDD)	22	11	11	50%

Significance:  $X^2 = 4.48$  df = 1 (P<0.05) Significant

FIG-4: Histogram Showing Relation Between Type Of Diabetes - Mellitus And Psychiatric Illness



The above table shows that diabetics being treated with Insulin has more Psychiatric illness (78.6%) in comparison to non-insulin dependent diabetics

(50%). P value is significant indicates that IDD group had more Psychiatric illness than NIDD.

TABLE:5 Relationship between duration of Diabetes mellitus and Psychiatric manifestations (n=50)

DURATION OF DIABETES MELLITUS	TOTAL NUMBER STUDIED	WITH PSYCHIATRIC ILLNESS	WITHOUT PSYCHIATRIC ILLNESS	PERCENTAGE WITH PSYCHIATRIC ILLNESS
More than two years	27	22	5	81.48
Less than two years	23	11	12	47.82

Significance:  $X^2 = 6.26$  df . = 1 (P< 0.05)

The above table shows that in group 'more than 2 years', Psychiatric illness were to the tune of 81.48 while in group 'less than 2 years' it was 47.82. P value is highly significant indicates more Psychiatric manifestation were seen after 2 years.

## DISCUSSION

Psychiatric disorders, particularly depressive disorders, anxiety disorders and psychotic disorders, are more prevalent in people with diabetes compared to the general population<sup>4, 5</sup>. Patients with diabetes and comorbid psychiatric illnesses are also at an elevated risk for developing metabolic syndrome. Diabetes, both type 1 and 2, is a psychologically challenging disease for patients and their family members. It interferes with quality of life and is a risk factor for diabetes-related distress as well as the psychiatric disorders listed above<sup>6, 7</sup>. The table-1 shows more or less similarity with respect to age, sex, and living conditions whereas differences in respect to socioeconomic status and domicile they represent. Many association exists between diabetes and various psychiatric illnesses. Table-2 findings shows that two third of diabetic patients suffer from any type of psychiatric illnesses compared to only 14% in the control group.

Anxiety and depressive disorders are very commonly found in diabetic patients. In our study 46% of diabetics present with anxiety symptoms compared to 8.5% in control group. Also 42% of diabetic patients presents depression symptoms compared to 6% in non-diabetic population. Psychotic symptoms seen in 6% and sexual dysfunction seen in 8% of diabetic patients. Eating disorders and cognitive impairment seen in only 2% of patients. Normally in Indian subcontinent we see less numbers of eating disorder patients and they hesitate to come to psychiatric opd. As we have limited the age group up to 65 years, only limited cognitive impairment was seen. Psychiatric illnesses found more in insulin dependent diabetes than non-insulin dependent diabetes mellitus. Table-5 shows that the strong association of duration of sufferings from diabetes with psychiatric illnesses. Those who have more than two years of suffering from diabetes there is more risks of association with psychiatric illnesses<sup>8</sup>.

## LIMITATION OF THE STUDY

The present study has its limitations, as it is a Nursing Home based study done on patient

referred from doctors. Further the study was done only in 50 cases of Diabetes mellitus. A larger number would have facilitated a better generalization of the results but this was not possible due to constraint of duration of study. However the findings may be supported in further studies with larger sample belonging to a uniform catchment area being compared with control groups consisting of normal individual.

### CONCLUSION

This study was undertaken with the aim of determining, if there existed any association between Diabetes mellitus and subsequent development of psychiatric illness and correlation of these with socio-demographic variables (i.e. age; sex; marital status; education; income; occupation) type and treatment of diabetes duration of illness. The results have revealed a high incidence of psychiatric morbidity. This association of diabetes and psychiatric manifestations could not be a chance factor. The results showed that the prevalence of psychiatric illness among the diabetes was 66% and the common disorders were anxiety and depression. It was seen that those patients who were suffering from insulin dependent diabetes had more psychiatric illness and the occurrence of psychiatric illness was more in those diabetics who had more than two years duration of illness. Hence all individuals with diabetes should be regularly screened for the presence of depressive and anxiety symptoms and early intervention is needed for better quality of life <sup>9,10</sup>.

**SOURCE OF SUPPORT:** NIL

**CONFLICT OF INTEREST:** NIL

### REFERENCES

1. Hutter N, Schnurr A, Baumeister H. Healthcare costs in patients with diabetes mellitus and comorbid mental disorders--a systematic review. *Diabetologia*. 2010; 53:2470–9.
2. P Trigwell, RPeveler. *Advances in Psychiatric Treatment* (1998), vol. 4, pp. 159-166.
3. Y P Balhara. *Indian J EndocrinolMetab*. 2011 Oct-Dec; 15(4): 274–283.
4. L.E. Egede Diabetes, major depression, and functional disability among US adults *Diabetes Care* 2004, (27): 421- 428
5. S. Moussavi S. Chatterji E. Verdes Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *Lancet* 2007 ;( 370): 851- 858J.
6. R.J. Anderson K.E. Freedland R.E. Clouse The prevalence of co-morbid depression in adults with diabetes *Diabetes Care* 2001 ;( 6): 1069- 1078.
7. S. Ali M. Stone J. Peters The prevalence of co-morbid depression in adults with type 2 diabetes: a systematic review and meta-analysis *Diabet Med* 2006 ;( 23): 1165- 1173.
8. K. Barnard T. Skinner R. Peveler The prevalence of co-morbid depression in adults with type 1 diabetes *Diabet Med* 2006 ;( 23): 445- 448

9. Li C, Ford ES, Zhao G, Balluz LS, Berry JT, Mokdad AH. Undertreatment of mental health problems in adults with diagnosed diabetes and serious psychological distress: the behavioral risk factor surveillance system, 2007. *Diabetes Care*. 2010; 33:1061–64.
10. M. Pignone B.N. Gaynes J.L. Rushton screening for depression: systematic evidence review. Systematic Evidence Review No. 6. AHRQ Publication. No. 02-S002 Rockville, MD Agency for Healthcare Research and Quality 2002.