

## FREQUENCY AND SEVERITY OF DEPRESSIVE SYMPTOMS AMONG DIABETIC PATIENTS\*

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*One hundred patients of Diabetes Mellitus (30 insulin dependent and 70 non-insulin dependent) were studied for frequency and severity of depressive symptoms. The subjects were evaluated on Schedule for Standardised Assessment of Affective Disorder (SADD) and Hamilton Rating Scale for Depression (HRSD).*

*Result show that symptoms such as depressed mood-decreased work and activities and loss of weight were present in more than 60% of patients belonging to insulin and non-insulin dependent diabetics. Severity of depressive symptoms as rated on HRSD were significantly higher ( $P < .001$ ) in insulin dependent patients as compared to non-insulin dependent diabetics.*

Recently a lot of attention has been focussed on the prevalence of psychiatric disorders and the role of psycho-social factors in diabetic mellitus (Popkin *et al.*, 1988). Surridge *et al.* (1984) reported marked reduction in energy level, increased fatigue, irritability, depression and delayed psychosexual maturation in 50 insulin dependent diabetics. Some workers have reported cognitive dysfunction emerging in adolescence with diabetes mellitus (Ryne *et al.*, 1984). Lawson *et al.* (1984) identified memory impairment in diabetics as compared to controls. Popkin *et al.* (1988) found in their sample of 75 type I Diabetes Mellitus patients high (51%) life time and six month prevalence of psychiatric disorders when viewed in comparison with first degree relatives (35%) and general population (33%). Tattersall (1981) has opined that psychiatric changes in patient with diabetes mellitus may well be due to the stresses of diabetic way of life. We are not aware of any study from our country where psychiatric aspects of diabetes mellitus in our conditions have been studied. Thus one thought it would be worthwhile as a first step to estimate the precise extent of depressive symptoms manifested by a group of patients suffering from diabetes mellitus.

### METHODOLOGY

The patients sample consisted of a consecutive series of 100 patients of diabetes mellitus (Type I and Type II) who attended the Diabetic Clinic at King George's Medical College, Lucknow from April, 1990 onwards and who fulfilled the following selection criteria :

1. Ages between 16 to 60 years.
2. No obvious damage to the brain or nervous system, i.e. cerebrovascular accident or any other concomitant disease which could affect the function of the nervous system e.g. multiple sclerosis.
3. Not on medication which produce cognitive defects or peripheral neuropathy.
4. Absence of Hypoglycemia or ketoacidosis on the day of assessment.

Screening for criterion number 2-4 were done by two of the investigators (C.G.A. and B.S.).

Subsequently the selected subjects were interviewed by psychiatrists (M.S. and A.J.).

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This involved complete psychiatric history and a mental status examination. All patients were assessed on-Schedule for Standardize Assessment of Affective Disorders (SADD) and Hamilton Rating Scale for Depression (HRSD).

## RESULTS

The diabetics in our sample had a mean age of  $38.1 \pm 14.2$  yrs. with a majority being females (62%) (Table -1). The mean duration of their illness was 4 years. Only 24 patients had a positive history of diabetes mellitus in their first

Table-1 : Sample characteristics

1. Age (Years) (Mean $\pm$ S.D.)	38.1 $\pm$ 14.2
2. Sex	42 Male 58 Female
3. Marital Status	62
Married	
Single/Separated/ Divorced/Widow	38
4. Family History of Diabetes Mellitus	No. of subjects
Not present	64
First degree relative with D.M.	24
Don't know	8
5. Duration of Diseases (Years)	4 (n)
6. Mean fasting glucose (Mg/100 ML.)	100 - 150 - 40 151 - 200 - 30 200 - 250 - 20 > 250 10

degree relatives. As an indicator of psychological control of diabetes we measured fasting plasma glucose level of patients. Majority (60%) had blood glucose levels higher than 150 Mg/100ML.

Table-2 compares insulin dependent and non-insulin dependent patients on SADD items related to the history. Compared to the insulin dependent patients, non-insulin dependent patients reported more abnormalities during childhood and adolescence. Precipitating stress occurred with more or less same frequency in both the groups. Two patients of non-insulin dependent diabetes reported presence of psychiatric disorder in blood relatives. No such his-

Table-2 : Comparison of Insulin Dependent & Non-insulin Dependent Patients on SADD Items Relating to History

SADD Items	Insulin dependent (N = 30)	Non-insulin dependent (N = 70)
1. Other psychiatric disorder in blood relative	0	2
2. Early separation	3	9
3. Stressful event in childhood	1	4
4. Psychological symptoms in adolescence	0	2
5. Premorbid traits in premorbid personality	1	4
6. Precipitating stress	5	6

No subject in either group had a history of affective disorder in blood relatives psychopathological symptoms in childhood or adulthood, or a history of continued psychic stress.

**Table-3 : Comparison of Insulin & Non-Insulin Dependent Patients on SADD Items**

	Insulin dependent (N = 30)		Non-Insulin dependent (N = 70)	
	N	%	N	%
1. Sadness	17	56.77	40	57.14
2. Joylessness	18	60.00	38	54.28
3. Hopeless	15	50.00	30	42.86
4. Anxiety	6	20.00	15	21.43
5. Aggression	5	16.67	8	11.43
6. Irritability	20	66.67	37	52.86
7. Lack of energy	22	73.33	40	57.14
8. Disruption of social function	16	53.33	30	42.86
9. Desire to be alone	4	13.33	11	15.71
10. Slowness and retardation of thought	5	16.67	23	32.86
11. Indecisiveness	9	30.00	20	28.57
12. Lack of self confidence	10	30.33	30	42.86
13. Loss of interest	24	80.00	48	68.57
14. Loss of ability to concentrate	8	26.67	32	45.71
15. Loss of memory	0	0	8	11.43
16. Early awakening	6	20.00	31	44.29
17. Inability to fall asleep	8	26.67	30	42.86
18. Fitfull, restless sleep	6	20.00	30	42.86
19. Hypersomnia	0	0	0	0
20. Lack of appetite	0	0	12	17.14
21. Change of body weight	20	66.67	15	21.43
22. Constipation	3	10.00	10	14.21
23. Feeling of pressure	5	16.67	15	21.43
24. Other somatic symptoms	7	23.33	28	40.00
25. Other psychological symptoms	5	16.67	25	35.71
26. Decrease of libido	20	66.67	38	54.28
27. Change of perception	0	0	0	0
28. Suicidal ideas	7	23.33	17	24.29
29. Feeling of guilt	2	6.67	3	4.29
30. Ideas of worthlessness	15	50.00	32	45.71
31. Hypochondriasis	0	0	0	0
32. Ideas of impoverishment	7	23.33	28	40.00
33. Ideas of persecution	0	0	0	0
34. Other delusions	0	0	0	0
35. Disorders of perception	0	0	0	0
36. Psychomotor retardation	5	16.67	23	32.86
37. Psychomotor agitation	0	0	3	4.29
38. Worse in morning	0	0	3	4.29
39. Worse in evening	17	56.67	37	52.86

tory was available in case of insulin dependent patients. No subjects in either group had a history of affective disorder in blood relatives, psycho pathological symptoms in childhood or adulthood, or a history of continued psychic stress.

Table-3 indicated that the commonest (60% or more) reported symptoms on SADD items related to symptomology in the patients of both groups were lack of energy, irritability, joylessness, loss of interest, change of body weight and decreased libido. Other less common though frequently (25.5%) reported symptoms included sadness, hopelessness, disruption of social function, indecisiveness, lack of self confidence, loss of ability to concentrate, inability to fall asleep, ideas of worthlessness and feeling worse in the evening.

On HRSD the most frequent symptoms among insulin dependent diabetics were depressed mood (56.7%), decreased work and activities (73%) and loss of weight (67%).

Non-insulin dependent diabetics reported depressed mood (57.1%), early insomnia (44.3%), late insomnia (42.9%), anxiety-psychic (41.4%) anxiety-somatic (31.4%). There were no significant difference among insulin and non-insulin dependent diabetics subjects.

Table-5: depicts the mean of total scores of HRSD in insulin dependent and non- dependent diabetics. It can be seen that the total score of insulin dependent subject was significantly higher than non-insulin dependent subjects.

**Table-4 : Comparison of symptoms of HAM-D**

	Insulin dependent (N = 30)		Non-Insulin dependent (N = 70)	
	N	%	N	%
1. Depressed mood	17	56.67	40	57.14
2. Feeling of guilt	2	6.67	3	4.19
3. Suicide	7	23.33	17	24.29
4. Insomnia early	8	26.67	31	44.29
5. Insomnia middle	6	20.00	30	42.86
6. Insomnia late	6	20.00	30	42.86
7. Work and activities	22	73.33	28	40.00
8. Retardation	5	16.67	23	32.86
9. Activation	0	0	3	4.29
10. Anxiety-Psychic	6	20.00	29	41.43
11. Anxiety-Somatic	5	16.67	22	31.43
12. Somatic symptoms gastrointestinal	7	23.33	28	40.00
13. Somatic symptoms general	6	20.00	22	31.43
14. General symptoms	9	30.00	19	27.14
15. Hypochondriasis	0	0	0	0
16. Loss of weight	20	66.67	15	21.43
17. Insight	30	100.00	70	100.00

**Table-5 : Severity of depression among 100 diabetics as rated on HRSD**

	Insulin Dependent (N = 30)	Non-Insulin Dependent (N = 70)
Mean of total score of HRSD	12.53 (2.7)	4.54 (2.9)

$p < 0.001$

*Hamilton score is significantly higher in the Insulin dependent in comparison of Non-Insulin dependent diabetics.*

## DISCUSSION

Psychosocial factors have been implicated in diabetes mellitus in several ways. They range from a view implying casual role of psychosocial factors in the onset of illness to the view point minimizing the role of psychosocial factors in comparison to physical management of the illness. Without subscribing to these extreme view points the often reported finding of an association of psychiatric disorders/symptoms with diabetes mellitus (Popkin *et al.*, 1988) does raise important issues regarding management of diabetic patients when psychiatric symptoms co-exist with diabetes mellitus.

In our patients of diabetes mellitus Type-I and Type-II we found that depressive symptomatology was a common occurrence. The profile as well as frequency of symptoms as elicited on a structured interview schedule (SADD) was more or less the same in both the groups (Table-3). The most frequently reported symptoms were lack of energy, irritability, joylessness, loss of interest, change of body weight, decrease libido, sadness, ideas of hopelessness, disruption of social function, lack of self confidence, loss of ability to concentrate and ideas of worthlessness. Surrige *et al.* (1984) in a descriptive study of psychiatric findings in 50 insulin dependent diabetics found symptoms of marked reduction in energy level, increased fatigue and irritability, depression and delayed psycho-sexual maturation in their patients. These symptoms are akin to the psychiatric profile presented by our subjects. Popkin *et al.*

(1988) studied 75 patients undergoing evaluation for pancreatic transplantation and found one or more psychiatric diagnosis in half of the patients and a life time prevalence of major depression in one quarter. Thus it can be seen that depression or depressive symptomatology is a common accompaniment of diabetes mellitus. The differences in the frequency of symptoms and other variation can be accounted for differences in the methodology.

Using the criteria of total score on HRSD as an index of severity of depressive symptomatology we found that the total score on HRSD was significantly higher in insulin dependent diabetics (Type-I) as compared to the non-insulin dependent diabetics (Type-II). This may be due to the fact that the insulin dependent diabetic patients face more daily stresses as compared to the other group. For instance, repeated hospitalization, repeated serious medical illnesses due to complications, diabetic restriction, routine multiple injection, associated medical problem (such as Gout, Hypertension, Ischemic heart disease), awareness of course, and possible complication, repeated investigation no doubt are stresses faced by these patients.

Our findings indicate a significant proportion of both insulin dependent and non-insulin dependent diabetic patients suffer from depressive symptomatology. This has implication for a comprehensive management of diabetes. It has been demonstrated that the psychiatric symptoms are correlated with poor control of

diabetes mellitus. Thus for a psychiatrist who sees a diabetic patient with depression it would be worthwhile to keep the connection in mind. He may also then have the opportunity not only to intervene appropriately but also to call the primary care physician's attention to the possible casual connection between patients dysphoria and poor control of the patient's diabetes. This also provides a fertile area for research where the facts of psychiatric intervention in the management & treatment of diabetes mellitus could be studied.

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