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Original Article

FREQUENCY OF DEPRESSION IN DIABETES MELLITUS 11 PATIENTS IN RURAL AREA OF SINDH

***** *Dr Ghulam Rasool Bhurgri* ** *Dr Barkat Ali Sheikh* *** *Dr Muhammad Ali Qureshi*

* (MBBS, M.Phil, Ph.D, MCPS) Professor, HOD and Chairman of Pharmacology and Therapeutics PAQSJIMS.GAMBAT. ** (MBBS, M.Phil) Professor of Pharmacology and Therapeutics PAQSJIMS GAMBAT *** (MBBS. M.Phil.) Associate Professor of Anatomy, PAQSJIMS, GAMBAT.

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Correspondence Author:
DR GHULAM RASOOL BHURGRI
(MBBS, M.Phil, Ph.D, MCPS)
Professor,
HOD and Chairman of
Pharmacology and Therapeutics
PAQSJIMS. GAMBAT.
drgr72@gmail.com.
03332871918

ABSTRACT

Introduction: Diabetes major depressive disorders (MDD) are increasing globally. Separately, each shows with other illness for patients. When the two diseases present simultaneously in the same subject, produce drastic worsening in the quality of life of patients. **Study Design**: Cross sectional and observational study. **Material and Method**: Consecutive type II DM patients newly diagnosed or followed-up by medicine outdoor patient, who were willing to provide valid and given consent to 200 participates were recruited in the study. Patients aged 30-60 years and with adequate cognitive functions to perform the interview and schizophrenic any other psychotic disorders or substance-related mental diseases were excluded. 12 patients did not follow study protocol of study. **Results**: Overall, 108 patients had symptoms of depression and 80 patients had free of depression. It indicated that diabetes produce, Severe Depression10.50 ± 5.96, Moderate Depression 20.50 ± 11.690, p-value <0.05 both non-significant, Mild depression 24.50 ± 14.000, p-value >0.05 significant, diabetes produce depression age-wise in age group 30-40 years frequency with percentage 9%, and in 41-50 years (30) 15%, 51(60) years, 60,30%, diabetes depressed male 19.50 ±11.11, female 35.5 ± 20.35. **Discussion**: Depression is more seen in old group of diabetes 2 patients, if it leaves undiagnosed, untreated, it may increase chances for morbidity and mortality diabetic populations. **Conclusion**: The study proved prevalence of depression is more seen in type 11diabetes patients, concomitant treatment of both diseases are essential for suffer individual.

Key words: Depression. Diabetic Mellitus. Psychotic Disorders.

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INTRODUCTION

Diabetes mellitus is expanding globally. Depression is seem commonly in type 11 diabetes and it cause more severe consequences, if it left undetected and untreated in diabetes. The findings of different studies displayed that a problem must be noticed by mental health department and public health authorities' community awareness about this important

issue. Major depressive disorders are more affected on diabetes, it seems concomitant other illness with diabetes is challenging factors for clinicians. When the two diseases are present simultaneously in the same subject, patients are unable to fulfil normal needs and leads of life.[1] Patient feel something going to be wrong in the future life, someone live in sadness they understand life is meaning less, these thoughts are going to day or two weeks or more is a sign of serious depression. At any given time, most diabetes say no all things are normal no depression. But different research showed diabetes patients easily affected with depression compared to non diabetes.[2]Mostly depressive symptoms have seems in diabetic 2 patients. Depression did not related timing of diabetes and its control. By scholars showed significant relation between depression and retinopathy in diabetic patients. Diabetes itself showed significant determinant of having depression after matching with other variables.[3] Diabetic mellitus is chronic disorders leads or produce depressive symptoms of mental disorders, comparable with non diabetic patients in general population. Anxiety has been reported more in diabetic patients, and both psychiatric illnesses have been reported in DM patients. Certain factors are attributed to depression in diabetes patients mostly psychosocial impact of illness, a potential common genetic susceptibility and common path-physiological abnormalities involving neuro-immunological and neuro-endocranial pathways, microvascular compression of brain and its pathogenesis is still unclear.[4] Depression screening tests are important tools for diabetes. Depression screening must be enhanced for all individuals with diabetes, particularly for low-income individuals.[5]

Patients of mental disorders especially depression have greater chance to develop type 11 diabetes mellitus and it leads to cardiovascular illness, and may lead silent deaths. Diabetes seems more common in depressive patients as compared to non diabetes population. The control depression and diabetes concomitantly is essential; both are risk factor to each other.[6]

It has been reported that diabetic mortality depression is major role contributed in this task, Anhedonia is major symptom of depression, which is seem as predictor of short life in diabetic patients.[7] Diabetes is a major disease, it produce mental disorders. Depression is associated with hyperglycemia in type 1 and 11 diabetes. Long course to control the diabetes explore cause, diagnosis treatment of diabetes mellitus.[8] Different study measured rates of depression in diabetes two patients. Further research work is needed for effective treatments of depression in this patients.[9] Scholars suggested that co-morbid diabetes and depression is common. Further to rule out causes of depression in type11 diabetes is needed. Clinicians must refer DM patients to psychiatry clinic twice per annul. Both of them establish a link for management of type 11 diabetic mellitus patients.[10]

OBJECTIVES OF THE STUDY: Find out frequency of Depression in type of 11Diabetic Mellitus Patients.

MATERIAL AND METHOD

Design of Study: It is cross sectional, hospital interview based research.

Place of study: This study was a carried out in outdoor patients of Civil Hospital City Branch KhairpurMirs.

Inclusion Criteria: Consecutive type II DM patients newly diagnosed or followed-up by medicine outdoor patient who were willing to provide valid and given consent of 200 participates in research were recruited. Patients aged 30-60 years and with adequate cognitive functions to perform the interview

Exclusion Criteria: Schizophrenia any other psychotic disorders or substance-related induced diseases included in the study, presence of any other concomitant disorders of function of nervous system or taking drugs (except for the drugs used for the management of diabetes), which is known to cause depression, were excluded from the study.

Sample Size: Total study sample consisted of 200 patients (Male:70, Female:130)

Period of Study: Study was conducted during the period from April 2015 to March 2016.

Diagnosis tools: The diagnosis of depression was established by Structured Clinical Interview for DSM IV(Diagnostic and Statistical Manual of Mental Disorders, 4th. Edition.) Axis-1 Disorders, Research Version patient edition (SCID-I/P). Patients were classified into two groups as having a depression or not having a depression (depressive and non-depressive).HbA1c levels that showed long-term blood glucose control were measured on the day of interview. All patients in both the groups were assessed by the Hamilton Rating Scale for Depression (HAM-D), 17-item, clinician-rated scale designed to assess the severity

of depression (Hamilton, 1967).

All the data of study was entered in SPSS version 20. The quantitive variables of study.ie age, gender,weight and HbA1c were presented as Mean, Standard Error of Deviations, Mode and Standard Deviation. Age showed in percentages. All qualitative variables were i-e Mild, Moderate and Severe presented in frequency and chi-square test of significant was applied. P- Value< 0.005 was considered as significant.

RESULTS

In the results of present study 188 diagnosed patients were cooperated and answered the proforma of questionnaires throughout time of study.In Table and Chart No 1 showed 35% male and 65% female ratio, the mean and standard deviation of age of patients 2.30 ± .783, weight of patients 65.02 ± 10.395, HbA1C in dm 8.00 ± .95. In Table and Chart No 2 indicated the diabetes produce mean and standard deviation of

TABLE NO-1
Basic Demography of diabetes mellitus (DM) patients in the study.

	Mean	Std error of mean	Mode	Std deviation	Percentage
Gender of DM Patients					35% Male,
					65% Female
Age of DM Patients	2.30	.055	3	.783	
Weight of DM Patients	65.02	.735	77	10.395	
HbA1C In percentage of					
DM Patients	8.00	.067	7	.951	

TABLE NO-2
Presence of Depression in diabetes mellitus (DM) Patients of the Study

Depression	Mean	Std error of mean	mode	Std Deviation	Percentage	P-Value
Severe Depression	10.50	1.323	1[a]	5.96	10%	P-value-
						<0.005
Moderate Depression	20.50	1.484	1[a]	11.690	20%	P-value-
						<0.005
Mild Depression	24.50	2.021	1[a]	14.000	24%	P-value-
						>0.005*

Chi-square of significant applied

TABLE NO-3
Presence of Depression on the base of age in diabetes mellitus (DM) Patients of the Study

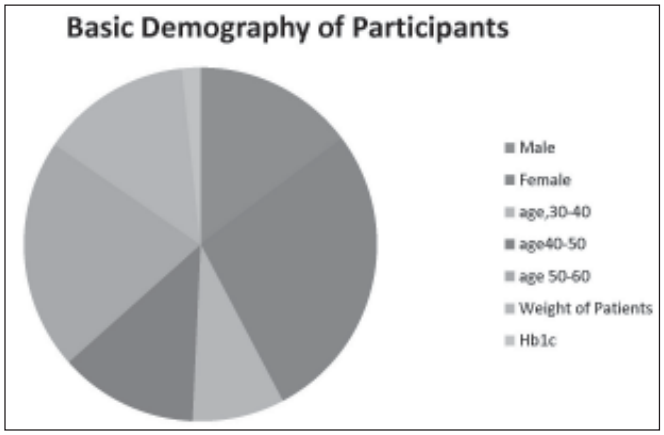
Age In years	Frequency	Percent	Valid percent	Cumulative Percent
30-40	18	9.0	16.7	16.7
40-50	30	15.0	27.8	44.4
50-60	60	30.0	55.6	100.0

TABLE NO-4
Presence of Depression on the base of Gender in diabetes mellitus (DM) Patients of the Study.

Gender	Mean	Std error of mean	Mode	Std deviation	P-Value
Male	19.50	1.038	1[a]	11.11	>0.05*
Female	35.5	2.43	1[a]	20.35	>0.05*

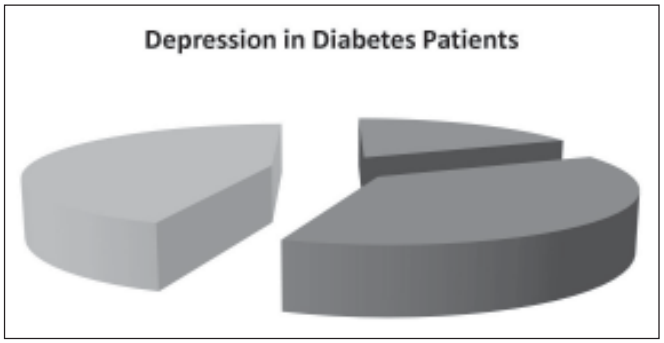
Chi-square of significant applied

GRAPH-1
Basic Demography of diabetes mellitus (DM) Patients in the Study.



In table and chart no 1 showed 35% and 65% male female ratio, the mean and standard deviation of age of patients 2.30 ± .783, weight of patients 65.02 ± 10.395, HbA1C in percentage of dm 8.00 ± .95

CHART NO-2
Presence of Depression in diabetes mellitus (DM) Patients of the Study



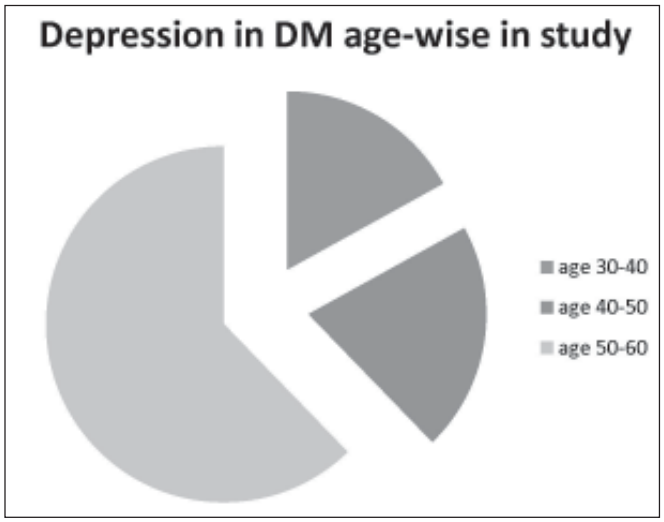
In table and chart no 2 indicated the diabetes produce mean and standard deviation of severe depression10.50 ± 5.96, moderate depression 20.50 ± 11.690, p-value <0.05 both non significant, mild depression 24.50 ± 14.000, p-value >0.05 significant.

severe depression10.50 ± 5.96, moderate depression 20.50 ± 11.690, p-value <0.05 both non significant, mild depression 24.50 ± 14.000, p-value >0.05 significant. In Table and Chart No 3 displayed diabetes produce depression, age-wise in age group 30-40 years frequency 18, 9%, and in 41-50-(30)15%, 51-60- (60) 30%. In Table and Chart No 4 showed diabetes depressed male 19.50 ±11.11, female 35.5 ± 20.35, result significant >0.05.

DISCUSSION

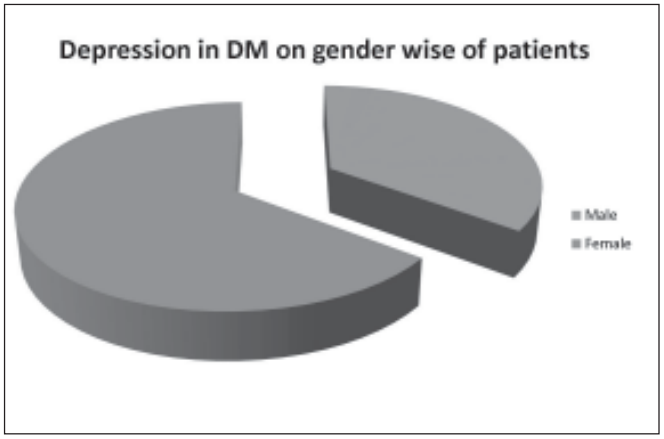
Depression is among the leading causes of decreased disability-adjusted life years in the world, and a serious public health problem. Older adults with DM experience greater risk for co-morbid depression compared to those who do not have diabetes mellitus (DM). Having diabetes mellitus (DM) increases the risk of subsequent development or recurrence of depression. Present study showed 35% and 65% male female ratio, the mean and standard deviation of age of patients 2.30 ± .783, weight of patients 65.02 ± 10.395, HbA1C in percentage of dm 8.00 ± .95.It indicated the diabetes produce mean and standard deviation of severe depression10.50 ± 5.96, moderate depression 20.50 ± 11.690, p-value <0.05 both non significant, mild depression 24.50 ± 14.000, p-value >0.05 significant. It is displayed in study diabetes produce depression, age-wise in age group 30-40 years frequency 18, 9%, and in 41-50 years(30)15%, 51-60 years (60)30%, diabetes depressed male 19.50 ±11.11, female 35.5 ± 20.35, result significant >0.05. Conversely, presence of symptoms of depression may increase chance for new onset DM. As undiagnosed case of depression in type 11diabetic difficult to manage the hyperglycemia life

CHART NO- 3
Presence of Depression on the Base of age in diabetes mellitus (DM) Patients of the Study.



In table and chart 3 displayed diabetes produce depression, age-wise in age group 30-40 frequency 18, 9%, and in 40-50-30,15%, 50-60- 60,30%.

CHART NO- 4
Presence of Depression on the base of Gender in diabetes mellitus (DM) Patients of the Study



In table and chart no 4 showed diabetes depressed male 19.50 ±11.11, female 35.5 ± 20.35, result significant >0.05.

long, it may produce further illness in same individual and hindering their adherence to treatment regime. Our study correlated with following scholar articles and researches.

The study of mijung park (2015) match our study in which older diabetes were more affected and produced depression. DM may accelerate cognitive decline, highlighting the importance of treating depression and DM.[11] Present study correlates with Gariepy G et all (2015) in which it showed symptoms of depression are common in diabetes.[12] Our study matched with study of Jeong JH (2017) in which they displayed annual prevalence of depression was consistently higher in T2DM group from 2003 to 2013. The mortality hazard ratio was higher in the depressed in all age groups, and the risk was higher in male groups and in younger-aged groups. Depression was major as contributor factors in mortality of diabetes two patients. Treatment for depression might contribute significantly to reducing mortality risk in this group of patients.[8]

To some extent our study correlated with Subramaniam M (2017) in which screened that DM was reported by 25.5% of the population. The prevalence of depression was noticed high in type 11 diabetes as compared those who have not diabetes, (6% vs 3%). In Table and Chart 3 displayed diabetes produces depression age-wise in age group 30-40 years frequency 18, (9%) and in 41-50 years, 30 (15%), 51-60 years, 60(30%) respectively. On list of socio-demographic data, groups co morbid depression among diabetes patients, early interventions to prevent and diagnosis in these groups should be considered.[13] Depressive symptoms showed in type 11 diabetes patients in present study, duration of our study was short and limited number of patients, but correlation with study of Mutambudzi M (2016) Over a 9.2-years follow-up, there were 391 died.

Concomitant high depressive symptoms and physiological disabilities increased chance of mortality (Hazard Ratio (HR) = 3.02, 95% Confidence Interval (CI) = 2.11-4.34). Risk was greater in men (HR = 8.11, 95% CI = 4.34-16.31) than women (HR = 2.21, 95% CI = 1.42-3.43.[14]

In the research of khamaty T et al (2017) entered simultaneously into one model (anxiety: HR = 1.35, 95% CI = 1.12-1.61, P < .001; depression: HR = 1.04, 95% CI = 0.83-1.31, p = .73). The feeling anxious (p = .03) and the worry (p = .02) items predicted incident diabetes mellitus independent of the depression screen.[15]In the research of Kaur G (2013) the prevalence of depression, anxiety and stress symptoms among Type II diabetics were 11.5%, 30.5%

and 12.5% respectively. For depression (adjusted OR 2.8, 95% CI 1.1; 7.0), anxiety (adjusted OR 2.4, 95% CI 1.1;5.5) and stress (adjusted OR 4.2, 95% CI 1.8; 9.8), psychotic disorders family history a major predictors of depression in diabetes. They found the prevalence of depression, anxiety and stress symptoms to be high among Type II diabetics.[16]

In the present study of MajdanM (2012) the univariate analysis, a number of factors were associated with increasing severity of depression symptoms. In different analysis of lower education (OR 0.52; Cl 95% 0.33-0.81), and high degree of self-perceived severity of illness (OR 5.33; CI 95% 2.47-12.12) were confirmed as independent predictors of depressive symptoms in our patients.[17]

In study of Mut-Vitcu G et al (2016) 53.3% patients had moderate depression, 17.9% had severe depression, and 28.8% had no depression symptoms. Patient's age (p=0.024), Presence neuropathy (p<0.001), in diabetes two and body mass index (p=0.037) were proved important predictors for developing depression in type two diabetes mellitus. The presence of severe depression was indicated uncontrolled diabetes mellitus two; it may increase prevalence of diabetes complications such as diabetic neuropathy and chronic kidney disease.[18]

In the research of Islam SM et al (2015) Overall, 61.9% participants had depressive symptoms, and the prevalence was higher among females (70.9%) compared to males (50.6%). One-third (35.7%) of participants had mild depression and 36.2% had moderate to severe depression. In the multivariate analysis, factors significantly associated with depression were: age=60 years (OR: 2.1, 95% CI=1.2-3.6; p=0.006), female gender (OR=1.9, 95% CI=1.3-3.0; p=0.002). [19]

In the research of Ranjan Das et al (2013) showed that depressive symptoms in diabetes two patients has opposite effect on quality of life of the patient, leave wrong effects on physical illness itself. The symptoms of depression are presence in type 11diabetes patients indicates severity of disease. Because depression is increasedmortality of DM patients. Diagnosis of depression is an essential factor to control the hyperglycemia. Treating depression increases quality of life. Diagnosing and treating depression may be essential to improve the quality of life in Type II DM population.[20]

CONCLUSION

The study proved prevalence of depression is higher in patients with Type 11 diabetes compared no diabetes. Depression is more seen in older group of Type 11 diabetes patients, if it isleftundiagnosed, untreated, it may increase chances for morbidity and mortality. The findings of this study could be considered by mental health department and public health authorities to raise awareness about this important issue.

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LIMITATIONS:

It is cross sectional, hospital interview based research, sample size is small, but physician must be considered psychological upset of diabetic 2 patients.

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Authors contribution: * Concept, design of article ** Analysis and interpretation of data *** Drafting of paper
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