

ORIGINAL ARTICLE

Association of Diabetes related Depression and Distress with Glycosylated Haemoglobin among Type 1 Diabetic PatientsSaira Javed¹, Qamar Usman Pasha², Shoaib Kiani^{3*}, Arsalan Haider⁴**ABSTRACT**

Objective: The purpose of the study was to determine whether diabetes related depression and distress are the same thing among type 1 diabetic.

Study Design: A cross sectional study.

Place and Duration of Study: The study was conducted from June 2019 to September 2019 in the community of Faisalabad, Punjab, Pakistan.

Materials and Methods: The data was collected from community dwelling population. Quantitative Research was designed to determine the prediction of diabetes related depression and distress through level of blood sugar i.e., Glycosylated Haemoglobin. Secondly, occurrence of depression and distress along with subtypes was also calculated in diabetic patients. Demographic sheet, DDS17 Questionnaire and PHQ-9 (Mobile App) were used for the collection of data from the patients.

Results: Diabetes related distress, but not diabetes related depression, was associated with worse glycemic management. Only 8% of the patients with diabetes related depression experience no distress. More than 75% of screening positive for depression also had diabetes related distress. Majority of the patients endorsed diabetes related distress compared to depression.

Conclusion: From the analysis of the obtained results it was concluded that diabetes related depression and distress are not the same thing and should not be considered synonymous expressions. As both distress and depression are altogether different phenomenon and demand different interventions, hence should be treated differently.

Keywords: *Depression, Diabetes Mellitus, Distress.*

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Diabetes, like any other chronic disease, is associated with an increased risk for depression and distress. In

fact, compared to the general population, patients with diabetes had a twofold higher prevalence of depression.^{1,2} Researchers speculate that shared biological and behavioral mechanisms (e.g. hypothalamic-pituitary-adrenal axis activation, inflammation, autonomic dysfunction, sleep disturbance, inactive lifestyle, poor dietary habits, environmental and cultural risk factors) may underlie this relationship.³

Depression and diabetes distress have been linked to worse outcomes, including poor glycemic control and self-management as well as increased health care costs and mortality. Diabetes related distress (i.e., concerns about self-care, support, emotional burden and quality of healthcare) is more common than depression in people with diabetes. It is associated with poor glycemic control and other

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negative health outcomes.⁴ Most primary and specialized diabetes care clinics screen for depression, but not diabetes-related distress.

Depression is said to be a psychological disorder that lasts for at least 2 weeks and consists of at least five of nine distinct symptoms. These symptoms must be conducive to emotional distress or impairment in functioning. Depressive disorder does not give a range of choices for treatment. Therefore, there is no empirically supported way to deal with this kind of disorder. Furthermore, heterogeneous symptoms of the same diagnosis limit the panorama of diagnosis and elaborate the scope of depression.⁵

The major rationale of the current study was to determine whether diabetes is related to depression and distress simultaneously in patients with type 1 diabetes. Thus, early recognition and treatment of depression and diabetes distress are essential for achieving optimal goals in terms of management of depression and patients overall quality of life. It is important to differentiate between true depression and diabetes distress as these conditions have different diagnostic criteria and require different management approaches. Therefore, another rationale of the study was to fill the gaps in the available literature as there is ambiguity between diabetes related depression and distress, as both have been confused by many physical and mental health practitioners during diagnosis and treatment of patients.

Materials and Methods

Data for this cross-sectional study was collected through purposive and convenient sampling technique from patients residing in Faisalabad, Punjab, Pakistan, once formal written formal consent was taken. Research was conducted from June 2019 to September 2019. Initially researchers aimed to include sample of 148 patients after calculating sample size from G power test. However, later after screening only kept 100 out of 155 type 1 diabetics. Exclusion criteria for this study were patients with type II diabetes, unable to read, write and understand English language and with no symptoms of depression. Demographic data and information regarding medical treatments for diabetes and depression were obtained from self-report and values were collected using the medical charts of participants.

Demographic sheet, Diabetes Distress Scale (DDS-17)⁶ and Patient Health Questionnaire (PHQ-9) Mobile App⁷ were used to conduct the current study. Results of the study were analyzed by using IBM SPSS version 23.0 by applying descriptive statistics and linear regression.

Results

Results of the study revealed that 5% patients suffered from severe depression, 35% with moderately severe depression, 21% moderate depression, 15% mild depression and 24% having no depression. (Fig 1).

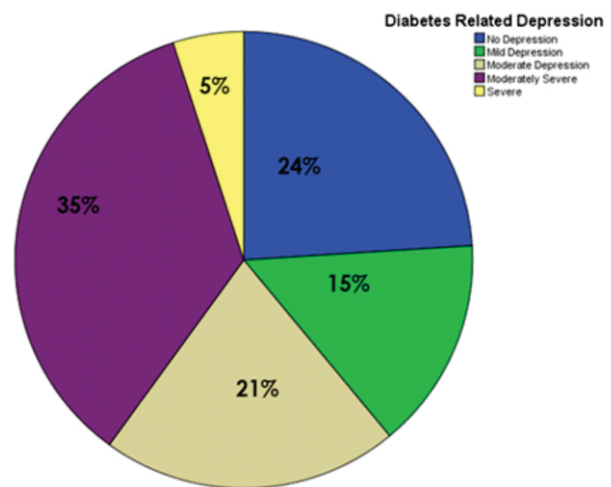


Fig 1: Occurrence of Diabetes Related Depression among Type 1 Diabetic Patients (N = 100)

On the other hand, 92% patients were diagnosed with diabetes related distress and only 8% had no diabetes related distress. (Fig 2).

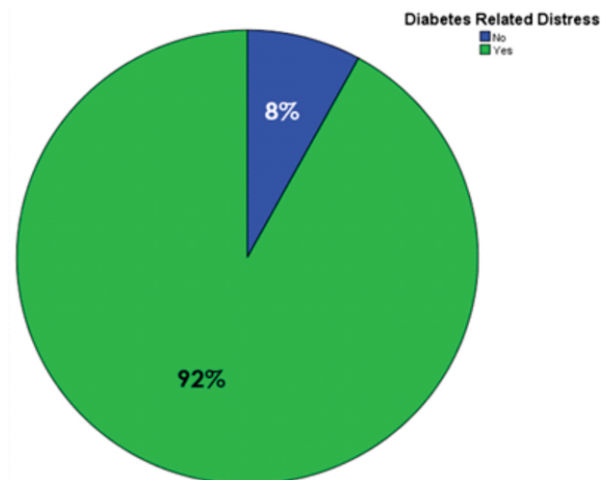


Fig 2: Occurrence of Diabetes Related Distress among Type 1 Diabetic Patients (N = 100)

Furthermore, analysis of the obtained data suggested 83% emotional burden, 95% physician related distress, 99% regimen related distress and 71% interpersonal distress among diabetic type 1 patients. (Fig 3 and Fig 4).

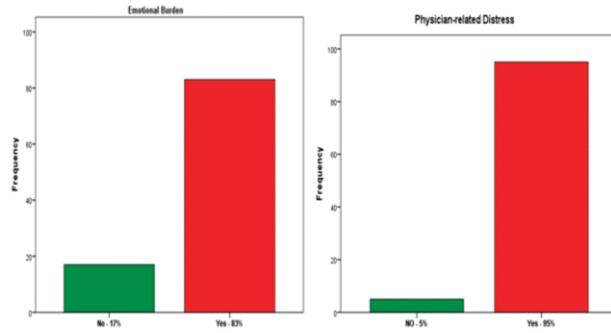


Fig 3: Occurrence of Diabetes Related Distress Sub-types (Emotional Burden & Physician-related Distress) among Type 1 Diabetic Patients (N = 100)

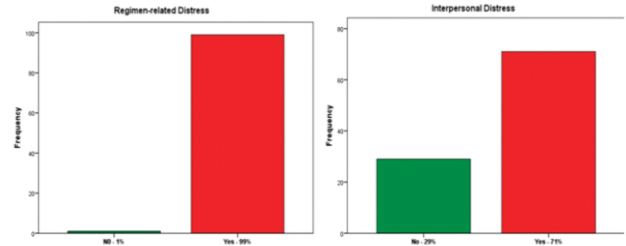


Fig 4: Occurrence of Diabetes Related Distress in Sub-types (Regimen-related Distress&Interpersonal Distress) among Type 1 Diabetic Patients (N = 100)

Table 1 of linear regression shows the significant prediction of diabetes related distress ($R^2 = 0.504$) along with sub-type of emotional burden ($R^2 = 0.92$) and interpersonal distress ($R^2 = 0.143$). Which means increase in amount of blood sugar i.e., HbA1c increases in diabetes related distress, emotional burden and interpersonal distress at .0001*** level of significance.

Table 1: Linear Regression Analysis Predicting Diabetes Related Depression and Diabetes Related Distress along with sub-types (Emotional Burden, Physician-related Distress, Regimen-related Distress and Interpersonal Distress) (N = 100)

X	Y	Unstandardized		Standardized		R	R ²	F	LL	UL
		B	SE	β	p					
HbA1c	Diabetes Related Depression	14.04	2.15	.06	.06	.06	.003	.33	-.35	.64
	Diabetes Related Distress	1.96	.252	.714	.000	.71	.504	6.7**	.13	.26
	Emotional Burden	.115	.037	.303	.001	.303	.092	9.93*	.04	.188
	Physician-related Distress	.037	.022	.166	.099	.166	.028	2.77	-.01	.08
	Regimen-related Distress	.010	.010	.103	3.07	.103	.011	1.055	-.01	.03
	Interpersonal Distress	.173	.043	.38	.000	.378	.143	16.29**	.08	.56

Discussion

Analysis of the obtained results revealed that results of present study are in line with previously reported literature, where HbA1c found to be significantly predictor in association with diabetes related distress, emotional burden and interpersonal distress, but was not associated with diabetes related depression with worse glycemic management. Majority of the patients endorsed diabetes related distress than depression.^{8,9} Only 8% of patients with diabetes related depression experience no distress. Our findings suggested that screening for depression alone is inadequate. More than 75% of patients screening positive for depression also had diabetes-related distress. Therefore, it is important to screen and treat the subgroup of people with diabetes who experience depression unrelated to their diabetes. Diabetes related distress need to be handled separately and on different ground.¹⁰

Keeping in view the above literature, it can be said that depression and distress, though look

intersubstitutable, should not be considered synonymous expressions. As these two are altogether different phenomenon and demand different interventions, these should be treated differently. The misconception and lack of precision and clarity in definition and measurement may put the patients in even worse scenario. On the other hand, depression is purely diabetes related disorder which is found more in the diagnosed patients diagnosed on contrary to those who are undiagnosed.¹¹ The sources of emotional distress include life stressors, diabetes and its management and other contributors. In this way, all the individuals with diabetes, and even those with emotional distress should be taken into consideration according to the content of their emotional distress.¹² This approach can lead to more appropriate and targeted patient-centered interventions with which the patients having depressive disorder and distress can be benefitted equally.

Conclusion

From the analysis of the obtained results it was concluded that diabetes related depression and distress are not the same thing and should not be considered synonymous expressions. As both distress and depression are altogether different phenomenon and demand different interventions, hence should be treated differently

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