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Evaluation of Diabetes related distress in patients with Type 2 diabetes Mellitus

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Abstract

Background-Diabetes is a challenging disease that is considered to be hard to live with as it encompasses a lot of restrictive instructions. The emotional distress facing people with diabetes due to such lifestyle restriction is an area of growing clinical interest.

Methods: A Retrospective Hospital based Study conducted all patients admitted with Diabetes Mellitus in the department of General Medicine, Mahatma Gandhi Hospital from January 2019 to June 2020 was included in the study with the following inclusion and exclusion criteria.

Results: 74% of the patients had no distress while 24% patients had moderate distress and only 2% patients had high distress

Conclusion: We concluded that prevalence of diabetes related distress in our study was less.

Keywords: DDS, Diabetes, Distress

Introduction

Diabetes Mellitus (DM) is one of the most challenging public health problems in 21st century. Many community-based studies have shown higher prevalence of diabetes distress than other mode depressive disorders even though they have a component from distress. Significant relationship was present between HbA1c and diabetes distress but not with depressive disorders.[1] Research shows that many patients with diabetes, diagnosed to have depression are actually facing distress.[2]

Being content-related, specific interventions can easily be linked to the source of diabetes distress, opening up an opportunity to prevent or delay further morbidities. Therefore, this study aims at examining the diabetes related distress among adults living with type 2 diabetes mellitus.

Material and methods

Type of Study: A Retrospective Hospital based Study.

Period of Study: January 2019 to June 2020.

Place of Study: Mahatma Gandhi Medical College & Hospital, Jaipur

Sample Size: All patients admitted with Diabetes Mellitus in the department of General Medicine, Mahatma Gandhi Hospital from January 2019 to June 2020 willbe included in the study with the following inclusion and exclusion criteria.

Plan of Study

- Inclusion Criteria
  - Patients Diagnosed with Type II Diabetes Mellitus Above 18 years of Age.
- Exclusion Criteria
  - Patients with Type 1 diabetes
  - Patients newly diagnosed with diabetes.
  - Gestational Diabetes
  - Steroid Induced Diabetes
  - Patients with co-morbidities – Hypothyroidism and Chronic Renal Failure
  - Patients with history of Substance abuse.
  - Patients less the 18 years of age

Methodology

- All Patients admitted under The Department of General Medicine of Mahatma Gandhi Medical College And Hospital with Type II Diabetes Mellitus with detailed medical history to be documented, to undergo a thorough physical examination and routine investigations.
- A Test Requisition form with informed consent to be sent.
- Diabetes Related Distress to be evaluated by the DDS-17 Scale.

Data Analysis

- Data was recorded as per Performa. The data analysis was computer based; SPSS-22 was used for analysis. For categoric variables chi-square test was used. For continuous variables independent samples's *t*-test was used. *p*-value <0.05 was considered as significant.

Results

Table 1: Socio-demographic profile

Mean age	51.44±9.16
Male : female	54 : 96
Rural : Urban	55 : 95

Table 2: Distress level wise distribution of patients

Diabetes related distress	Patient	
	No	%
No distress	111	74.00
Moderate	36	24.00
High	3	2.00
Total	150	100.00

Table 3: Emotional burden wise distribution of patients

Emotional burden	Patient	
	No	%
No distress	94	62.67
Moderate	56	37.33
High	0	0.00
Total	150	100.00

Table 4: Pysician related distress wise distribution of patients

Physician related distress	Patient	
	No	%
No distress	118	78.67
Moderate	32	21.33
High	0	0.00
Total	150	100.00

Table 5: Regimen related distress wise distribution of patients

Regimen Related Distress	Patient	
	No	%
No distress	101	67.33
Moderate	49	32.67
High	0	0.00
Total	150	100.00

Table 6: Interpersonal distresswise distribution of patients

Interpersonal Distress	Patient	
	No	%
No distress	130	87.67
Moderate	20	13.33
High	0	0.00
Total	150	100.00

Table 7: Association between distress and Hb1Ac

Diabetes related distress	Hb1Ac	
	Mean	SD
No distress	6.72	1.55
Moderate	7.1	0.78
High	7.24	0.66
p-value	0.24	

Table 8: Association between emotional burden and Hb1Ac

Emotional burden	Hb1Ac	
	Mean	SD
No distress	6.41	0.98
Moderate	7.24	1.14
High	0	0
p-value	0.01	

Table 9: Association between physician related distress and Hb1Ac

Physician related distress	Hb1Ac	
	Mean	SD
No distress	7.08	1.26
Moderate	7.36	1.93
High	0	0
p-value	0.09	

Table 10: Association between regimen related distress and Hb1Ac

Regimen Related Distress	Hb1Ac	
	Mean	SD
No distress	6.78	1.40
Moderate	7.28	1.76
High	0	0
p-value	0.01	

Discussion

Allbright K. Simon et al [3]conducted a cross sectional community-based study of 250 adults with type 2 diabetes mellitus, residing in the urban field practice areas of a teaching hospital in Pathanamthitta, South Kerala. The prevalence of (moderate to high level) diabetes related distress (DRD) among them was found to be 13.2% with regimen related being the highest among the subscales. This is consistent with our study, as we also found that regimen related distress was the second highest type of distress faced by the patients. But we observed that emotional distress was the most common distress experienced by the patients[4-5]

Prevalence of distress in other Asian countries was reported to be higher, ranging from 19-23%.[6-7]

A study conducted in South Africa revealed that 44% of subjects suffered from moderate to high levels of distress and also higher scores of emotional burden dimension and regimen distress, which is in congruence with our study results. 6

A North Indian study by Gahlan, et al done at PGIMS, Rohtak showed that the prevalence of distress was 18% with the highest distress being the emotional distress .[9]

A South Indian hospital-based study reported a very low distress of 2.4% and majority who experienced diabetes distress were found to have poor glycaemic control. [10]

Studies from India showed that the distress ranged from 30 to 45%. [11,12] The wide variations in results may be attributed to the different rating scales used and to the fact that the present study sample was derived from an OPD based population. The varied prevalence could be due to different age groups involved in the study and the availability of diabetes management programmes.

The magnitude of depression was found to be almost similar in males and females in our study. Age and gender were not found to be associated with diabetes related distress in the study, whereas mixed results were reported in different regions. Younger age and female gender were significant factors in several studies.[11,12] Though not statistically significant, distress was found to be higher in unmarried participants which was similar to the findings in another South Indian study.[8]

This is in contrast to the female preponderance most studies have reported wherein they have reported a two-fold higher risk of depression in women as compared to men. [13,14]

Our study showed a positive correlation between both Diabetes Related Distress total score and emotional distress with the HbA1c. As expected, this finding was linear to the previous studies' results.[15,16]

We can also say that we have established the significance and validity of the DDS 17 Scale in the Indian setting. Because of demonstration of distress in Indian population and the significant correlation of distress and glycemic control of the patient.

Previous studies have shown a significant correlation between DRD and depression and anxiety.[17,18] Although we did not screen for psychological factors, they could be related to our observations. It has been shown that improving depressive symptoms has a beneficial effect on HbA1c. [19] However, this effect is mild compared to the effect of improving distress on HbA1clevels, as shown in the interventional study done by Kuniss et al.[20] This study showed that involving subjects in an educational program at a diabetes clinic can improve glycemic control and it correlates with a decrease in DRD. An additional interventional study examined the possibility of improving depressive symptoms in patients with improved DRD and the

authors concluded that DRD is an independent factor that may have an effect on depression.[21]

Conclusion

Diabetes related distress is not much explored in India, and this study was the first of its kind to be done in Rajasthan, India. Focus has been on the prevalence of depression and its effects on diabetes in India. But the effects start before the depression sets in, in the form of everyday difficulties that the patient may suffer which in the end causes distress. This aggravated and accumulated distress may lead to issues like depression down the road. Therefore, Assessment, Acceptance and Action are the 3 A's we need to focus on. Diabetes related distress is the preventive checkpoint for the progression of the disease and intervention at this time will lead to better results for the physician and for the patients. Early control and action will enable the patients to get better hold of their blood sugar level with support from their family members and physicians. decreasing the need for escalation of therapy and delay/prevent the appearance of long-term complication of diabetes.

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