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By Universitas Muhammadiyah Sidoarjo

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A Study of Diabetes Correlated Emotional Distress among Patients with Type 2 Diabetes Mellitus: A cross Sectional Study

Sebuah Studi tentang Tekanan Emosional yang Berkorelasi dengan Diabetes di antara Pasien dengan Diabetes Melitus Tipe 2: Sebuah Studi Cross Sectional

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Abstract

Background: Diabetes distress (DD) is a significant concern for individuals with type 2 diabetes, marked by emotional strain related to disease management and support, distinct from general psychological distress. **Specific Background:** Addressing DD can improve self-care practices and glycemic control, yet limited research exists on the relationship between emotional distress and sociodemographic factors in this population. **Knowledge Gap:** This study aims to fill this gap by exploring how sociodemographic traits influence emotional distress among type 2 diabetes patients. **Aims:** The primary objectives are to identify the correlation between emotional distress and diabetes and to determine the impact of sociodemographic characteristics on this distress. **Results:** A descriptive cross-sectional study conducted at the Endocrinology and Diabetes Center in Al-Basrah City included 150 patients aged 50–65 years, with a significant proportion of men (63.3%). The findings revealed a mean emotional distress score of 3.81, indicating high distress levels, with physician-associated distress at 3.32 and regimen-related distress at 3.48. **Novelty:** This research highlights the strong correlation between emotional and diabetes-related distress, particularly across different age and gender demographics, thus emphasizing the need for tailored interventions. **Implications:** The study emphasizes the importance of incorporating psychological assessments into diabetes management and policymakers' consideration of emotional dimensions in health program designs to improve patient self-management and quality of life.

Highlights:

Diabetes distress impacts self-care and glycemic control.
Socio-demographics influence emotional distress levels in patients.

Psychological assessments are crucial in diabetes management strategies.

Keywords: diabetes distress, emotional distress, type 2 diabetes, sociodemographic factors, healthcare interventions

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Introduction

The most prevalent chronic illness is thought to be diabetes mellitus (DM). Diabetic kidney disease (DM) is one of the most challenging health conditions of the twenty-first century; it ranks fourth or fifth in most developing countries. Over the past 20 years, there has been an astounding amount of research focused on the distribution and potential causes of diabetes. Unfortunately, many public health authorities and governments still don't have a thorough grasp of how common diabetes is in their nations today or, more crucially, how major consequences it may cause in the future [1]. Over 80% of diabetes-related fatalities take place in low- and middle-income nations. From 2008 to 2030, the World Health Organization (WHO) predicts a two-thirds increase in diabetes-related deaths. Obesity is considered a major risk factor for diabetes mellitus [2]. A healthy weight, regular exercise, eating a balanced diet, and quitting smoking can all help prevent or postpone the onset of type 2 diabetes [3].

Epidemiological evidence indicates a global rise in the prevalence of diabetes. It has been acknowledged that low- and middle-income countries will face the most significant challenges regarding diabetes. The management of diabetes and the prevention and treatment of its consequences are essential at this time. A multitude of scientific investigations has shown that the risks of mortality and morbidity linked to diabetes can be mitigated [4].

Diabetes distress is the term used to describe patients' worries over support, emotional strain, illness management, and treatment access; it is not classified as a kind of depression but is a separate entity. Diabetes distress is seen as an aspect of diabetes and is also classified as a non-psychiatric affliction. Addressing diabetes-related concerns improves self-care and glycemic control. Numerous patients have considerable pain related to diabetes, and the extent of direct management required for the condition is arduous. This generally entails dissatisfaction with the continuous obligations of dietary management, physical exercise, blood glucose monitoring, and medication adherence [5]. The adult diabetes patient population is projected to rise by 54 percent between 2010 and 2030. Diabetes profoundly affects individuals, families, and society at large. Diabetes profoundly affects individuals diagnosed with the condition. In this scenario, patients may experience frustration, distress, or depression regarding their care [6].

Other diabetics may experience diabetes-related distress, a condition characterized by worries regarding disease management, the adequacy of support received, the emotional impact of diabetes, and access to care, all of which are distinct from depression. Healthcare experts and researchers have recognized various aspects that contribute to the distress associated with diabetes; the disease's diagnosis, symptoms, and indicators are among the pertinent factors [7]. Diabetes-related emotional discomfort can range from minor psychological issues to continuous self-care activities including insulin injections, medication administration, frequent blood glucose testing, and following treatment protocols [8]. Numerous studies have demonstrated that diabetes patients' health outcomes, particularly their self-management, can be substantially impacted by distress. Three factors are strongly associated with diabetic distress, according to the results of a qualitative study: 1) Fear of problems from diabetes; 2) Emotional pressure; and 3) Behavioral pressure [9].

Furthermore, results from a comprehensive study carried out in 13 nations showed that psychological issues, such as diabetes distress, are common in diabetic patients and have a major impact on their capacity for self-care [10]. People with diabetes experience significant limitations, as do healthcare systems. To enhance community health generally, healthcare professionals and policymakers must put crucial ideas into practice to comprehend the nature of diabetic pain and assess its implications on patients' health outcomes. Multiple studies indicate that diabetic distress and its management are critical determinants of the implementation of self-management strategies in diabetes control [11].

The purpose of this study is to assess the diabetes distress score and associated variables in Al-Basrah type 2 diabetic patients. The research may deepen our knowledge of diabetes-related discomfort and assist planners in creating timely and effective solutions. Globally, one of the biggest health issues is type 2 diabetes.

Methods

Research design:

A descriptive Cross-Sectional study design is carried out throughout the present study from the period of 1st November 2023 to 10th April 2024. The study was conducted at the Endocrinology and diabetes center in AL-Basrah City on people with diabetes type II.

Sample and sampling:

The overall study sample was composed of (150) patients diagnosed with diabetes type 2 in Al-Basrah City. The participants met the study criteria and were included in the study. The sample was a purposive and non-probability sample, selected randomly, it included (150) patients with type 2 diabetes. The participants consisted of (95) males and (55) females.

1. Inclusion Criteria:

- a. 18 years of age or older.
- b. From both sexes (Males and females).
- c. They're able to participate in the study.

2. Exclusion Criteria:

- a. Have type 1 diabetes.
- a. Refuse to participate.

Ethical considerations

Before beginning the data collection process, the researcher provided each patient with an individual explanation of the goal of the study. The patients explained that the study would assess the suffering that is connected with diabetes, and they also explained that the study did not have any negative impacts on them.

Instrument of study

Part I: Patient Socio-Demographic Variables:

The six factors in this section—Age, Sex, Education Level, Residence, Duration of Diabetes Diagnosis, and Type of Treatment—are related to gathering demographic information from the patients using interview questionnaire sheets.

Part II: Emotional distress in patients with type 2 diabetes:

This section includes the instrument that was utilized in the research, and it is freely accessible to the researchers who conducted the study. There is a connection between it and the emotional distress that patients with type 2 diabetes experience, and it is a tool that is utilized to assist in the identification of those who experience difficulty as a result of the disease. Through the use of the DDS17, a total diabetes distress score is generated, in addition to four subscale scores, each of which addresses a distinct type of distress. Simply add up the patient's responses to the appropriate items, then divide that total by the total number of things on that scale. This will give you the score. The most recent findings in this field of study indicate that a mean item score between 2.0 and 2.9 should be categorized as "moderate distress," while a mean item score greater than 3.0 should be classified as "high distress." In addition, the most recent research suggests that connections between DDS scores and behavioral management and biological factors (such as A1C) are observed when the DDS score is more than 2.0. Clinicians can give therapeutic attention to patients who are experiencing moderate or high levels of discomfort, depending on the clinical environment. In addition, we recommend that you look over the patient's responses to all of the items, regardless of the mean scores for each item. Inquiring further or starting a conversation about any one thing that received a score of three or higher could prove to be beneficial. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 24 software.

Validity and Reliability:

The DDS-A total scale and its subscales demonstrated acceptable validity and reliability, thereby supporting its application as a dependable measure for assessing diabetes-related distress in Jordanian patients with DM. Consequently, the DDS-A would be beneficial for research focused on assessing distress levels within this extensive population or for developing baseline programs intended to alleviate such stress or enhance patients' diabetes self-management.

Rating and Scoring:

Total DDS Score: 17 individual item scores, b. Divide by: 17.

Result and Discussion

Demographic Variables	Rating and Intervals	Frequency	Percent (%)
1- Age	20-35	20	13.3
	35-50	36	24.0
	50-65	54	36.0
	65-80	40	26.7

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		Mean = 2.760	
2- Sex	Male	95	63.3
	Female	55	36.7
3- Educational Level	Primary	48	32.0
	Secondary	53	35.3
	College	49	32.7
4- Residence	Outskirts of the city	76	50.7
	City	74	49.3
5- Duration of diagnosis with diabetes	1-4 years	28	18.7
	4-6 years	36	24.0
	6-9 years	20	13.3
	More than 10 years	66	44.0
6- Type of treatment	Insulin	37	24.7
	Therapeutic pills	67	44.7
	Mixed	46	30.7

Table 1. Socio-Demographic Variables of the Patient (n=150)

Table [1]: Show that the total sample age group at a level (50-65 years) was (36.0%). The gender (63.3%) was male. Secondary school education was (35.3%) of the total sample. (50.7%) were from the Outskirts of the city. About (44%) of participants were diagnosed with diabetes for more than ten years. And (44.7%) were used therapeutic pills. The next figure shows these results.

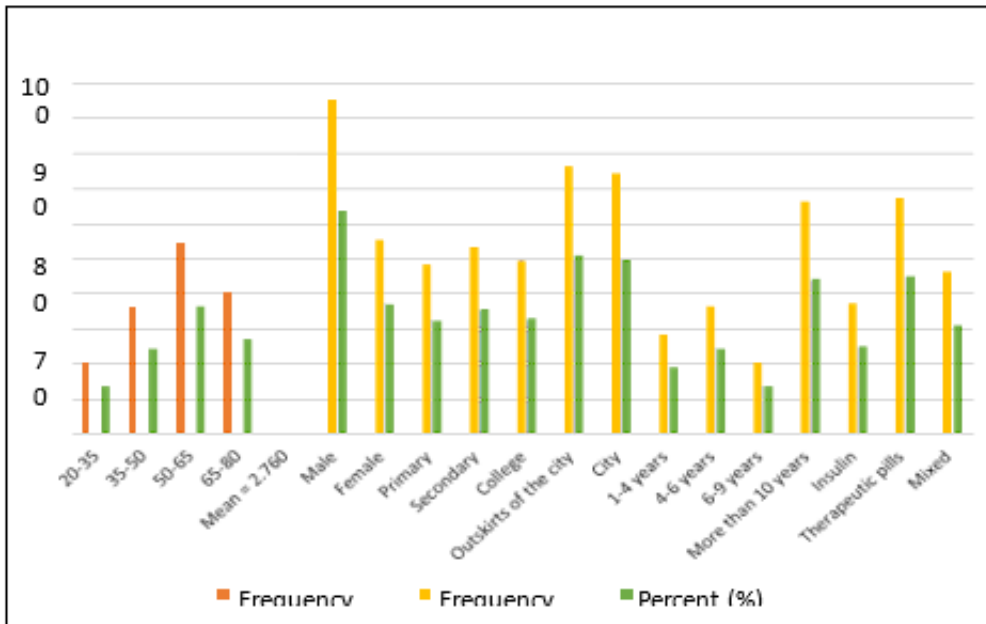


Figure 1. Show Participant's Socio-Demographic Characteristics

Table 2.

Questions	Not a Problem	A Slight Problem	Moderate Problem	Somewhat Serious Problem	Serious Problem	A Very Serious Problem
1. I believe my doctor is lacking in knowledge regarding diabetes and its management.	41	34	13	19	19	24
2. I feel that having diabetes consumes too much of my daily physical and mental energy.	10	19	23	50	27	21
3. I don't feel like I can control my diabetes daily.	24	17	30	24	29	26
4. I have feelings of anger, fear, and/or depression when I consider having diabetes.	19	14	22	31	17	47
5. Feeling that I don't get enough guidance from my doctor on how to take care of my diabetes.	30	45	15	12	16	32
6. I have the impression that I'm not checking my blood sugar levels often enough.	20	16	34	36	20	24
7. feeling that, regardless of what I do, I will experience severe long-term consequences.	5	18	21	33	36	37
8. feeling like my diabetic regimen is something I frequently fail at.	19	28	24	32	16	31
9. Having the impression that friends or family are not doing enough to support my attempts at self-care (e.g., by scheduling events that clash with my schedule or pushing me to consume the "wrong" foods).	29	33	22	24	22	20
10. I feel like my life is dictated by my diabetes.	16	29	22	28	33	32
11. I have the impression that my doctor is not giving my worries enough weight.	25	54	20	26	11	14
12. The impression that I am not following a healthy diet plan to the letter.	32	33	21	33	8	23
13. having the impression that loved ones don't understand how challenging having diabetes may be.	25	25	27	23	20	30
14. feeling overburdened by the responsibilities of having diabetes.	15	17	23	32	24	39
15. I get the impression that I don't have a doctor I can visit frequently enough to discuss my diabetes.	15	42	27	32	9	25
16. I lack the motivation to continue managing my diabetes on my own.	23	28	19	19	22	29
17. feeling that I'm not getting the emotional support I'd desire from friends or family.	35	24	25	11	19	36
Weighted mean= 3.7773, St. deviation= 0.867440						

Figure 2. Show Descriptive statistics of Participants Responses

Table [2]: Presenting descriptive statistics of the participants' answers, question 7 (Feeling that I will end up with serious long-term complications no matter what I do) received the highest average, with a mean of 4.00 and St. deviation of 1.651. Questions 4 (Feeling angry, scared, and/or depressed when I think about living with diabetes) and 14 (Feeling overwhelmed by the demands of living with diabetes) followed closely behind.

Subscale	Mean	Std. Error
Emotional distress	3.81	0.09
Physician-related distress	3.32	0.10

Regimen-related distress	3.48	0.08
Diabetes-related interpersonal distress	3.39	0.11
Average score of diabetes distress	3.39	0.11

Table 3. Score of Diabetes Distress of Patients with Type 2 Diabetes Mellitus (n=150)

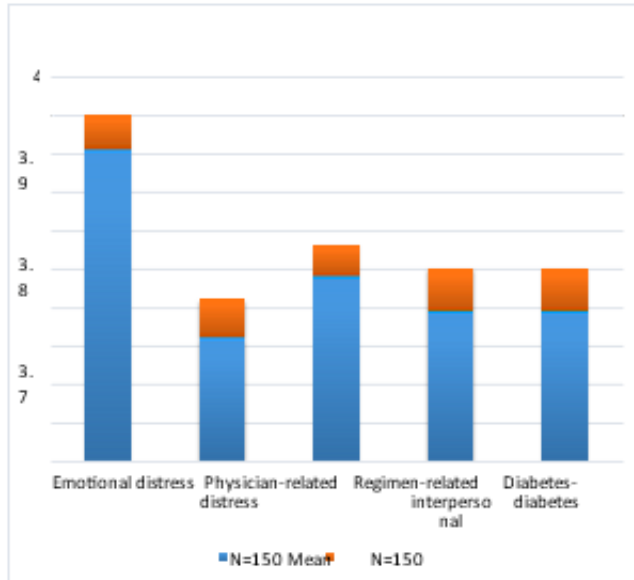


Figure 3. Score of diabetes distress of patients with type 2 Diabetes mellitus

Socio-demographic Data		Diabetes distress subscale			
		Emotional distress	Physician-distress	Regimen-distress	interpersonal distress
1- Age	Pearson Correlation	-.165**	.128**	-.166**	-.014-
	Sig. (2-tailed)	.000	.002	.000	.734
2- Sex	Pearson Correlation	.241**	.183**	.207**	.281**
	Sig. (2-tailed)	.000	.000	.000	.000
3- Level of education	Pearson Correlation	.071	.005	.079	-.051-
	Sig. (2tailed)	.091	.913	.058	.222
4- Address	Pearson Correlation	.188**	.099*	.048	.288**
	Sig. (2-tailed)	.000	.018	.249	.000
5- Duration of diagnosis with diabetes	Pearson Correlation	.111**	.054	.064	.168**
	Sig. (2-tailed)	.008	.195	.123	.000
6- Type of treatment	Pearson Correlation	-.122**	-.073-	.015	-.244**
	Sig. (2-tailed)	.003	.079	.713	.000

Table 4. Association of diabetes correlated emotional distress subscale and patient's Socio-demographic Data (n=150)

•Correlation is significant at the 0.05 level (2-tailed), **Correlation is significant at the 0.01 level (2-tailed)

Table (4) demonstrates a statistically significant relationship (p-value 0.000) between the age of the participants and three diabetes distress subscales: emotional, physician, and regimen-related. All diabetes distress subscales showed a strong association between sex and diabetes (p-value 0.000). There was only a significant link (p-value

0.000) between the address and duration of the disease and Diabetes-related interpersonal distress; however, there was a significant correlation (p-value 0.000) between the kind of therapy and both emotional and Diabetes-related interpersonal misery.

Discussion

The data in Tables 1 to 4 offer a detailed examination of the emotional distress encountered by patients with Type 2 diabetes in Al-Basrah City, revealing important findings that both support and diverge from earlier research.

Discussion of Demographic Characteristics

The study participants exhibited demographic characteristics indicating that 61.9% were female, with a mean age of 54.06 years. The demographic distribution aligns with prior research indicating a greater prevalence of diabetes in females and older adults. A study by Hanan El Sherbini and Rasha Abdou (2014) reported similar demographic trends, indicating that gender and age are critical factors in understanding diabetes distress levels [1].

Discussion of Emotional Distress Scores

Table 2 displays the emotional distress scores, indicating that the highest average score is associated with concerns regarding long-term complications (mean 4.25). This finding aligns with prior research that identifies fear of complications as a significant source of distress in diabetic patients. The mean score of 4.00 for feelings of anger, fear, and depression associated with living with diabetes indicates a marginally greater emotional burden than previous studies, which documented lower averages in comparable populations [3, 4].

Discussion of Correlation with Socio-Demographic Data

There are notable correlations between emotional distress and socio-demographic factors, including age and gender, with p-values reflecting strong associations ($p < 0.000$). This is consistent with the findings of Bijan Kumar Panda et al. (2022), which indicated that demographic factors have a significant impact on distress levels. This study identifies nine predictors of high diabetes distress, such as education level and disease duration, which have been less emphasized in prior research [5].

Comparison of Distress Subscales

Emotional and regimen-related distress is particularly pronounced among participants. The study indicates that emotional distress is significantly correlated with treatment type, which contrasts with earlier studies that did not explore this relationship in detail. This suggests that treatment modalities may play a more critical role in emotional well-being than previously recognized [6].

Conclusion

1. **Prevalence of Emotional Distress:** The study reveals that emotional distress is prevalent among diabetic patients, with high average scores indicating feelings of fear regarding long-term complications and emotional burdens associated with managing diabetes. This aligns with previous research that emphasizes the psychological impact of diabetes on patients' lives [1, 3].

2. **Impact of Socio-Demographic Factors:** The research identifies critical socio-demographic factors, such as age and gender, that correlate with levels of emotional distress. These findings are consistent with earlier studies, which suggest that demographic characteristics significantly influence the emotional well-being of diabetic patients [1, 4].

3. **Need for Healthcare Interventions:** The study underscores the necessity for healthcare professionals and policymakers to recognize and address diabetes-related emotional distress. By understanding the nature of this distress, they can implement targeted interventions to improve patients' health outcomes and overall quality of life [3, 5].

4. **Recommendations for Future Research:** The findings suggest a need for further research to explore the underlying causes of diabetes distress and its effects on self-management behaviors. This could lead to the development of more effective support systems for patients, ultimately enhancing their ability to manage their condition [6, 7].

In conclusion, this study contributes valuable knowledge to the field of diabetes care, emphasizing the importance of addressing emotional distress as a critical component of managing Type 2 diabetes. By focusing on both the psychological and physical aspects of diabetes, healthcare providers can better support patients in their journey toward improved health and well-being.

Limitations of the Study

The study on diabetes correlated emotional distress has several limitations that should be acknowledged:

Exclusion Criteria: The study excluded individuals with Type 1 diabetes, which may overlook the emotional distress experienced by this group. This limitation restricts the applicability of the findings to only Type 2 diabetes patients.

Self-Reported Data: Because participants may overreport or underreport their emotions owing to social desirability or a lack of self-awareness, using self-reported measures to quantify emotional discomfort may introduce bias.

Implications of the Study

The implications of this study are significant for both healthcare practice and policy:

Enhanced Patient Care: The findings highlight the need for healthcare professionals to incorporate psychological assessments into routine diabetes care. Understanding emotional distress can lead to better support and management strategies for patients.

Policy Development: Policymakers should consider the psychological aspects of diabetes management when designing health programs. Addressing diabetes distress can improve self-care behaviors and health outcomes, ultimately benefiting healthcare systems.

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