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RESEARCH ARTICLE

RATE AND CORRELATES OF DEPRESSION IN DIABETIC PATIENTS IN BAGHDAD

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ABSTRACT

Background: Depression is a 'quiet crisis' facing diabetics, their families and their health care providers. Financially and emotionally this crisis is exacting a terrible cost. (1) The possibility of depression catising diabetes was first advanced in 1684 by Thomas

Objectives:

- To study frequency of depression among people with diabetes.
- To study socio-demographic data associated with depression, diabetes, and their co-morbidity.

Methodology: This case control study was conducted during the period from 1st June, 2005 to 30th march 2006. Two samples were chosen for this study, 100 diabetic patients; 50 IDDM and 50 NIDDM, and 100 non-diabetics as a control. The two samples were matched for age and sex. All the diabetic patients included was between the ages 20-60 years. Fifty of them were females and fifty were males. **Results:** The prevalence of depression in diabetics in the study is higher than that in other studies. This study has shown that depression is prevalent among patient with both type-I and type-II diabetes and there is no difference in its distribution between IDDM and NIDDM as both of them required complex life changes. Our study was consistent with other studies: #Study done by Anderson -RJ; 2001(13) #Study done by Lust man-PJ; 2002 (2) the higher. **Conclusions:** The rate of depression in diabetic patients was more than two fold higher than that non-diabetic people. Depression interferes, with all aspects of functioning prevalence of (Depression in diabetic females compared to diabetic males but did not approach statistical significance, but it did in the non-diabetic group (p>0.05).

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INTRODUCTION

Objectives

- To study frequency of depression among people with diabetes.
- To study socio-demographic data associated with depression, diabetes, and their co-morbidity.

MATERIALS AND METHODS

This case control study was conducted during the period from 1st June, 2005 to 30th march 2006. Two samples were chosen for this study, 100 diabetic patients; 50 IDDM and 50 NIDDM, and 100 non-diabetics as a control. The two samples were matched for age and sex. All the diabetic patients included was between the ages 20-60 years. Fifty of them were females and fifty were males.

Consecutive patients attending to endocrinology out-patient clinic of Al- yarmouk hospital were screened on 2 days per week (Monday and Thursday) from 8AM to 2PM. The patients were seen in a quiet room for 15-20 minutes. The instrument used' for screening was the international diagnostic checklist for ICD-IO (ICDL) for depression. Comatose, unwilling patients and those with organic brain disease will be excluded. The control groups were selected from attenders to official office

RESULTS

Characteristic of study sample: The results of this study were based on the analysis of 200 individuals, 100 were diabetic and other 100 were non-diabetic people.

As presented in table 1: Among 100 diabetic patients 35% met the criteria for depression, while in non-diabetic compare group was 16%. Among 50 IDDM patients 18cases (36%) were depressed while it was 17 cases (34%) in 50 NIDDM patients.

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Table 1.

Group	NO.	Depression	
		no.	%
Diabetic Patients	100	35	35
Non- diabetic	100	16	16

Chi=0.02 p<0.05

Among 50 IDDM patients 18cases (36%) were depressed while it was 17 cases (34%) in 50 NIDDM patients.

Table 2. Type of diabetes

Type of diabetes	NO.	Depression	
		No.	%
IDDM	50	18	36
NIDDM	50	17	34
Total	100	35	35

Chi=0.04, p>0.05

Among female patient with diabetes mellitus screened 22 cases (62.8%) were depressed while it was 13 cases (37.2%) in male. On other hand it was 12 cases (75%) among non-diabetic female and 4 cases (25%) for male.

Table 3. Sex variation

Sex	NO.	Depression in diabetic patient		Depression in non- diabetic	
		no.	%	no.	%
Male	50	13	37.2	4	25
Female	50	22	62.8	12	75
Total	100	35	35	16	16

Chi=10.2 p>0.05

The diabetic patients and non-diabetic people were divided into 6-age groups. The distributions of depression among these groups are shown in table 4.

Table 4. Age group

Age group	NO.	Depression in Diabetic patient		NO.	Depression in non-diabetic	
		No.	%		NO.	%
20-29	6	3	50 i,	20	2	10
30-39	10	5	50	36	4	11
40-49	20	6	30	15	3	20
50-59	52	17	32.6	22	2	9
60 or more	12	4	33.3	7	5	71
Total	100	35	35	100	16	16

Chi=5.66 p>0.05

Diabetic patient and non-diabetic people were divided into 4-groups according to marital status. The distribution of depression among these groups shown in

Table 5. Marital status

Marital status	NO.	Depression in diabetic patient		NO.	Depression in non- diabetic people	
		No.	%		No.	%
Single	11	5	45	15	3	20
Married	79	24	30	71	8	11
Widowed	8	4	50	11	4	36
Divorced	2	2	100	3	1	33
Total	100	35	35	100	16	16

Chi=10.9 p>0.05

Diabetic patient and non-diabetic people were divided into 4-groups the distribution of depression among these groups is shown in table. 6.

Table 6. Employment

Employment	NO.	Depression in diabetic patient		4NO.	Depression in non- diabetic people	
		No.	%		No.	%
Employed	27	5	18.5	34	2	5.8
Student	3	2	66.6	4	1	25
Retired	17	4	23.5	12	4	33
Unemployed include house wife	53	24	45	50	9	18
Total	100	35	35	100	16	16

Chi=9.6 p<0.05

Diabetic patient and non- diabetic people were divided into 3- groups according to income. The distribution of depression among these groups is shown in table 7.

Table 7. Income

Income	NO.	Depression in • diabetic patient		NO.	Depression in non-diabetic people	
		No.	%		No.	%
More than enough	7	2	28.5	5	1	20
Enough	35	9	25.7	34	4	11.7
Not enough	58	24	41.3	61	11	18
Total	100	' 35	35	100	16	16

Chi=3.1. p<0.05

Diabetic patients were divided into 5-groups. The distribution of depression according to these groups is shown in table 8.

Table 8. Duration of illness

Duration of illness	NO.	Depression	
		No.	%
1-5 years	22	8	36
6-10	19	6	31.5
11-15	29	13	44.9
16-20	19	6	31.5
>21	11	2	18
Total	100	35	35

Chi=2.66 p>0.05

Depressive diabetic patients were divided into 2-groups according to having history of depression before physical illness. As shown in table 9.

Table 9. History of depression

History of depression	NO.	%
Before physical illness	3	8.5
After physical illness	32	91.5
Total	35	100

Chi=51.8 p<0.05

Depressive diabetic and non- diabetic people were divided into 3-groups according to severity as shown in table 10.

Table l0. Severity

Severity	Depression in diabetic patient		Depression in non- diabetic	
	No.	%	NO.	%
Mild	9	25.7	8	50
Moderate	18	51.4	5	31
Sever	8	22.9	3	19
Total	35	100	16	100

Chi=3»02 p>0.05

DISCUSSION

This study showed that the rate of depression is higher in diabetics (35%) than in control group (16%). Chi-square test and p-value revealed a significant difference in the distribution of depression among diabetics and non-diabetics (chi=0.02) (p<0.05). The prevalence of depression in diabetics in the study is higher than that in other studies.

A Study in Australia found the prevalence of depression in diabetics was 24% and 17% in non-diabetics. The Australian study used mood module of the primary care evaluation of mental disorder questionnaire to evaluate depression. (GoldneyM 2004) This discrepancy between the two studies may be due to:

- Theinstability and violence in this country because of the war, and to the difficulty to access medical care facilities.
- Low level of health education, including diabetes, among our patients compared to a developed country.
- Differences in methodology.

This study has shown that depression is prevalent among patient with both type-I and type-II diabetes and there is no difference in its distribution between IDDM and NIDDM as both of them required complex life changes. Our study was consistent with other studies: #Study done by Anderson -RJ; 2001(Anderson, 2017) #Study done by Lust man-PJ; 2002 (Williams, 2004). The higher prevalence of (Repression in diabetic females compared to diabetic males but did not approach statistical significance, but it did in the non-diabetic group (p>0.05). However, it is not consistent concerning sex with some studies Egede, 2003). (Kessler et al., 1994). Higher prevalence in diabetic females was found in seven studies in a met analysis of 39 studies done by Anderson 2001.

Depression was more prevalent among younger diabetic age group but it did not approach statistical significance.

This high prevalence of depression among younger age group may be due to:

- Younger age patients do not follow approper self care regimen.
- The endocrine physiology of developing diabetes in later life may also differ from younger onset patients. (Panzam et al., 1981)

There was no significant association with marital status, and this results were consistent with the finding of Egede, (2003), 2003, but it inconsistent with the finding of another study done by Egede, 2002 This difference may be due to:

- Stronger social relationship in Islamic and developing country than developed one.
- Different methodology.

This study showed significant negative association between depression and employment in the diabetic and control groups. This may be due to effect of employment on self-esteem, confidence and self- respect. This is consistent with Roy, 2001. As for the income, our study showed significant association between depression and low level of income in diabetic group, and insignificant association in the control group. This may be due to impact of diabetes on physical health and fitness for work and early age of retirement and bias in hiring which will lead to limited source of income and low living standard which hold another burden to the patient. Our study was consistent with Rnv, 2001 with that of Talbot, 1999). Also there was no significant association between depression and complications of diabetes, which is consistent with Egede 2003. It seems that depression play a primary role in development and exacerbation of diabetic complication, so temporal relationships between depressive symptoms and complication warrant clarification, and this can not be done by cross sectional study but by prospective and follow up study Croot, 2001. Our study also has shown a higher prevalence of depression among diabetes and it approach significance. Depression was of moderate severity among diabetes while it was of mild severity in control group.

Conclusion

The rate of depression in diabetic patients was more than two fold higher than that non-diabetic people. Depression interferes, with all aspects of functioning, aggravates symptoms of the medical illness, interferes with diabetes self-management, and imposes additional risk for diabetes complication. The co occurrence of depression and diabetes complicates management of both conditions, because depression leads to poor control of diabetes and this exacerbates depression. Contemporary treatment strategy demands a holistic approach dealing with both diseases to achieve a good long-term outcome. Within this strategy:

- Education the public about diabetes and depression.
- Physical activity.
- Good diabetic control and early treatment of depression to prevent a vicious circle from developing where poor management of either of them leads to poor management of the other.

This is the first study done on depression in diabetic patient in Iraq and the results support several earlier studies carried out elsewhere on the relationship between depression and diabetes. Also our study was consistent with and contradictory to other studies concerning several variables and this might be due to:

- Differences in definition of depression.
- Differences in sample selection.
- Differences in the number of variables that were controlled in different studies.

Recommendation

- Better recognition and treatment of depression are important.
- Raise physicians awareness about mental illness
- Sufficient physician-patient interaction.
- Education of both physician and patient about the impact of psychological problems on physical disease and vice versa.
- Additional studies are required.

Limitations

There are limitations to interpret the result of this study, because:

- This analysis is based on cross- sectional data and causality can not be determined, so prospective studies are needed to establish the causal link between depression and diabetes.
- A large study sample is needed.

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