Assessment of Depressive Symptoms in Adolescents with Diabetes Mellitus Type I

تقييم أعراض الأكتئاب لدى المراهقين المصابين بداء السكري النوع الاول

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الخلاصة

الهدف: تقييم أعراض الأكتئاب لدى المراهقين المصابين بداء السكري النوع الاول

المنهجيّة: دراسة وصفية أجريت في مركزين للغدد الصماء والسكري في مدينة بغداد، تم أختيار (50) من المراهقين المصابين بداء السكري نوع الاول في مراكزامراض الغدد الصماء والسكري (مركز امراض الغدد الصماء والسكري في الرصافة ،ومركز امراض الغدد الصماء والسكري في الكرخ) للمُدّة من 18 من كانون الثاني 2012 ولغاية 1 من ايار 2012 ، استعملت استبانة مصممة من جزئين؛ الجزء الأول يتضمن المعلومات الديموغرافية للعيّنة والجزء الثاني يتضمن فقرات تتعلق بمعارف المراهقين نحو الأعراض البدنية والعقلية والعاطفية والسلوكية للاكتئاب والذي يتكوّن من (4) أجزاء موزعة على(28) فقرة. تمّ تحديد ثبات الاستمارة من خلال عرض الاستبانة على مجموعة من الخبراء. تمّ تحليل بيانات الدراسة بإستعمال الإحصاء الوصفي الذي تضمّن (التكرارات، النسب المئوية، والإنحراف المعياري)؛ فضلاً عن إستعمال الإحصاء الإستنتاجي الذي شمل معامل الارتباط مربع كاي.

النتائج: فيما يخص الأعراض البدنية والعقلية والعاطفية والسلوكية التي يعاني منها المراهقين اظهرت النتائج انه اكثر مستوى متوسط للاكتئاب عند المراهقين كان (47.7)،بينما (45.5) من المراهقين كان لديهم الاكتفاء النسبي منخفض و(6.8) كان خارج مقارنة الاكتفاء النسبي.

الاستنتاج: : اظهرت النتائج انه لا يوجد أي ارتباط مهم بين الجنس والعمر والحالة الاقتصادية والمضاعفات و سنوات من التشخيص، ولكن هناك ارتباط مهم بين مستويات التعليم للمراهقين المصابين بداء السكري مع ممارساتهم عن الاكتئاب.

التوصيات: بناءاً على نتائج البحث، أوصت الدراسة بإجراء دورات تدريبية في مجال الاكتئاب عند المراهقين المصابين بداء السكري من النوع الاول للممرضين العاملين في مراكز السكري .

Abstract

Objective: Assess depressive symptoms in adolescents with diabetes type I.

Methodology: A descriptive study was conducted in two centers for endocrinology and diabetes in Baghdad city (50) of adolescents were selected; with diabetes mellitus type1 in center for endocrinology and diabetes centers for endocrinology and diabetes in rusafa and center for endocrinology and diabetes in karkh) in Baghdad city from 18th of January 2012 to 1st of May 2012. A questionnaire format was used which consist of (2) parts, the first part includes demographic information of the sample and the second part consists of structured Items concerning adolescents' knowledge toward physical, mental, emotional and behavioral symptoms of depression that suffering from which includes (4) main sections and comprised of (28) Items. Validity of questionnaire was estimated through a pilot study and a panel of expert. The data were analyzed by using descriptive statistical measures which included frequencies, percentages, and standard deviation, as well as the use of inferential statistical measures which include the chi- square test**.**

Results: The results revealed that most of the adolescent level of depression (47.7%),has moderate scores while (45.5%) was low relative sufficiency and (6.8%) was out of comparison relative sufficiency toward physical, mental, emotional and behavioral symptoms that suffering from.

Conclusions: The results revealed there is no significant association between age, gender, Economic Status and complications years of diagnosis, but there is significant association between levels of education with diabetic adolescent's practices about depression**.**

Recommendations: Based on the results of research, the study recommends initiating training courses in the field of depression in adolescents with diabetes type I for nurses working in diabetes center

Keywords: depressive symptoms; adolescents, diabetes mellitus type1

Introduction

Diabetes is one of the most common chronic diseases in children and adolescents; about 151,000 people below the age of 20 years have diabetes. When diabetes strikes during childhood, it is routinely assumed to be type 1, or juven -onset diabetes [1], Pediatric diabetes clinicians are in a unique position to identify behavior changes over time and provide early identification and preventive intervention for children and adolescents at risk for depression [2] , Less known is the increased risk for depression: individuals with diabetes have a two-fold increased risk for depression; affecting approximately 1 every 5 diabetic pa children with diabetes have a two-fold greater prevalence of depression, and adolescent up to threefold greater than youth without diabetes. Children with DM are at risk for psychological disorders, especially depression, with rates as high as 33%. In a study that followed youth with DM for 9 years, 42.4% of youth developed at least one episode of psychiatric disorder during the follow-up, with depressive disorders being the most common (27.5%) followed by anxiety disorders (19.6%) . In addition, children and adolescents v diabetes experience longer episodes of depression than medically well-depressed youth [3].

Diabetes doubles the likelihood of depression, which is present in approximately 30% of patients with type I or type II diabetes. A recent meta-analysis of 27 studies found a statisti significant association between depression and hyperglycemia in both type 1 and typ II diabetes In a randomized, controlled trial of antidepressant treatment in 68 patients with I and type II diabetes, improvements in depressive symptoms predicted improved glycemic control, Adolescents who have recurrent diabetic ketoacidosis may be more likely to have psychiatric disorders, especially anxiety and depression [4]. Depression is common among adolescents with chronic medical illness. We explored the impact of depressive symptoms in primary care patients with diabetes on diabetes self-care, adherence to medication regimens, functioning, and health care costs, Recent meta-analyses link depression in diabetes with hyperglycemia and with an increased risk for complications of the metabolic disorder , the nurse is an important advocate in helping the child and family to understand the complexities of treatment decisions and manage the depression, side effect and toxicities of the medication[5]. Insufficient knowledge about managing depression in diabetic adolescent has been suggested as one reason nurses do not manage depression effectively however; pediatric nurses' practices continue to fall short of the ideal with adolescent often experiencing moderate to severe unrelieved depression, nurse must be knowledgeable about the basic path physiology of diabetes and depression relationship and treatment related side effects. The nurse often serves as the coordinator of care, playing a key role in depression management [6]. The objective of the study is to assess depressive symptoms in adolescents with diabetes type I

Methodology:

A purposive "non-probability" sample of (50) of adolescents were selected in (2) centers for endocrinology and diabetes in Baghdad city (centers for endocrinology and diabetes in rusafa and center for endocrinology and diabetes in karkh) from 18th of January 2012 to 1st of May 2012.Data were collected by self administrative method was used to fill out the constructed questionnaire for adolescent knowledge and their demographic characteristics, the questionnaires format was used which consist of (2) parts, the first part includes demographic information of the sample and the second part consists of structured Items concerning nurses' knowledge toward pain management for leukemic child which includes (4) main sections and comprised of (28) Items. The questionnaires was rated on a three likert scale (know, uncertain, and do not know) and was scored as 3 for know, 2 for uncertain, and 1 for don't know. The validity and reliability for the constructed questionnaire were determined by using pilot study and the experts panel for validity, and the application of alpha correlation coefficient (r= 0 4) which was statistically acceptable. The data were analyzed by using descriptive statistical measures which included frequencies, percentages, and standard deviation, as well as the use of inferential statistical measures which include the (chi- square test)[7].

Results:

Table 1. Distribution of Adolescent by their Demographic- Characteristics

#.	Variables	No.	%
1.	Age (years)		
1.1.	12 – 13	12	24
1.2.	14 – 16	14	28
1.3.	17 - 18	24	48
	Total	50	100
2.	Gender		
2.1.	Male	24	48
2.2.	Female	26	52
	Total	50	100
3.	Level of education		
3.1.	Know write and read	3	6
3.2.	Primary School graduate	14	28
3.3.	Intermediate School graduate	20	40
3.4.	High School graduate	13	26
	Total	50	100
4.	Period of the disease		
4.1.	Under one year	12	24
4.2.	1 -5 years	30	60
4.3.	5 years and above	8	16
	Total	50	100
5.	Complications of the disease		
5.1.	Yes	0	0
5.2.	No	50	100
	Total	50	100
6.	Regularity to visit diabetes center		
6.1.	Yeas	37	74
6.2.	No	13	26
	Total	50	100
7.	Monthly income		
7.1.	Enough	32	64
7.2.	Enough to some extent	17	34
	Not enough	1	2
	Total		
8.	Is there a family member who is infected		
8.1.	Yes	24	48
8.2.	No	26	52
	Total	50	100

f= frequency; %= Percentage

+ Mean of age = 15.77 year

Table1 shows that most of adolescents , ages were (17-18) years accounted for (48 %), (26 %) were female, (40%) were graduate from intermediate school, (60%) of the sample have 1- 5 years as period of disease and all of them don't have any complication related to the diabetes,(74% of the sample have regularity visited to the diabetes center,(64%) have enough monthly income and (52%)there family member doesn't infected with diabetes mellitus.

Table 2. Mean of Scores and Relative Sufficiency of Adolescents Practices toward Physical Symptoms that suffering from Depression.

#	Bothered during the past two weeks from one of the following problems:	Never		Sometime		Always		MS	RS	E.
		No.	%	No.	%	No.	%			
1.	Suffer from the problem of the lack of sleep	21	42	29	58	0	0	1.33	71.50	M
2.	Have difficulty in sleeping	21	42	27	54	2	4	2.10	70.00	M
3.	Suffer from fatigue when doing things	2	4	29	58	19	38	1.80	60.00	M
4.	Suffer from the problem of slowness in speech	33	66	17	34	0	0	2.17	72.50	L
5.	Suffer from the problem of the slow movement	29	58	21	42	0	0	1.17	72.89	L
6.	Frequent complaints of headaches and pains in the stomach	9	18	37	74	4	8	1.85	61.67	M
7.	Suffer from a feeling of lack of appetite	9	18	34	68	7	14	1.73	57.50	M

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage; E=evaluation levels; Ms=Mean of score; Rs=Relative sufficiency

Table 2 indicated that the evaluation of relative sufficiency was moderate on item (1, 2, 3, 6 and 7), while items (4 and 5) was low

Table 3. Mean of Scores and Relative Sufficiency of Adolescents Practices toward Mental Symptoms that suffering from

No.	Items	Never		Sometime		Always		MS	RS	E. levels
		No.	%	No.	%	No.	%			
1.	Suffer from the problem in focus when doing things such as reading newspapers and watching TV	8	16	42	84	0	0	2.13	62.50	M
2.	Consider to be dead	36	72	10	20	4	8	2.17	72.50	L
3.	Thinking of hurting yourself	34	68	12	24	4	8	2.20	73.33	L

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage; E=evaluation levels; Ms=Mean of score; Rs=Relative sufficiency

Table3 indicated that the evaluation of relative sufficiency was moderate on item (1), while iten (2 and 3) was low

Table 4. Mean of Scores and Relative Sufficiency of Adolescents Practices toward Emotional Symptoms that suffering from

No.	Items	Never		Sometime		Always		MS	RS	E.
		No.	%	No.	%	No.	%			
1.	You just get the feeling of hopelessness	29	58	17	34	4	8	2.25	75.00	L
2.	Feeling angry and aggressive	13	26	36	72	1	2	2.17	72.50	M
3.	You just get the feeling life of a failed Bank	23	46	24	48	3	6	1.85	61.67	M
4.	Non-enjoyment of the work was a favorite you have previously.	39	78	7	14	4	8	1.48	49.17	L

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage; E=evaluation levels; Ms=Mean of score; Rs=Relative sufficiency

Table 4 indicated that the evaluation of relative sufficiency was moderate on item (2 and 3), while items (1 and 4) was low

Table 5. Mean of Scores and Relative Sufficiency of Adolescents Practices toward Behavioral Symptoms that suffering from

No.	Items	Never		Sometime		Always		MS	RS	E.
		No.	%	No.	%	No.	%			
1.	Social isolation and lack of communication with others	27	54	20	40	3	6	2.03	67.50	M
2.	Absenteeism at school	12	36	36	72	0	0	1.75	58.33	M
3.	Poor performance in school	14	28	25	50	11	22	1.55	51.67	M
4.	The desire to escape from the house	23	46	16	32	11	22	1.18	39.17	L

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage; E=evaluation levels; Ms=Mean of score; Rs=Relative sufficiency

Table 5 indicated that the evaluation of relative sufficiency was moderate on item (1, 2 and while items (4) was low

Table 6. Association between Adolescents Age and their Depression Symptoms

Scores / Age	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	No.	%	No.	%	No.	%	No.	%		
12 - 13 years	10	20	0	0	2	4	12	24	9.541	N.S
14 – 16 years	9	18	1	2	1	2	11	22		
17 - 18 years	15	30	4	8	1	2	20	40		
Total	34	68	5	10	4	8	50	100		
P≤0.05	df = 8		χ^2 crit. 15.51							

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table indicates that there is no significant association between adolescent depression and their age range from (17 -18) years has poor scores

Table 7. Association between Adolescents Gender and their Depression Symptoms

Scores / Gender	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	No.	%	No.	%	No.	%	No.	%		
Female	17	34	6	12	3	6	26	65	4.322	N.S
Male	13	26	5	10	6	12	24	35		
Total	30	60	11	22	9	18	50	100		
P≤0.05		df = 2			χ^2 crit. = 5.99					

df= degree of freedom; f= frequency; NS= Non-significant; P= Level of probability; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is no significant association between adolescent depression and their gender

Table 8. Association between Adolescents Level of Education and their Depression Symptoms

Scores / Level of Education	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	No.	%	No.	%	No.	%	No.	%		
Know write and read	1	2	1	2	1	2	3	6	14.564	S
Primary School graduate	14	28	10	20	0	0	14	28		
Intermediate School graduate	12	24	5	10	3	6	20	40		
High School graduate	5	10	1	2	7	14	13	26		
Total	37	64	17	34	11	22	50	100		
P≤0.05		df = 6			χ^2 crit. = 12.59					

df= degree of freedom; f= frequency; P= Level of probability; S= Significant; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is significant association between adolescent level of education and their depression at P≤0.05.

Table 9. Association between years of diagnosis and Adolescents depression Symptoms

Scores / years of diagnosis	Poor		Accepted		Good		Total		χ^2 obs.	Sig.
	No.	%	No.	%	No.	%	No.	%		
Under one year	5	10	3	6	4	8	12	24	10.786	N.S
1 -5 years	3	6	21	42	3	6	30	60		
5 years and above	5	10	3	6	0	0	8	16		
Total	13	26	27	54	7	14	50	100		
P≤0.05		df = 6			χ^2 crit. = 12.59					

df= degree of freedom; f= frequency; P= Level of probability; S= Significant; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table shows that there is no significant association between complications years of diagnosis and adolescents depression symptoms.

Table 10. Association between Economic Status and Adolescents depression Symptoms

Economic Status	Poor		Fair		Good		Total		χ^2 obs.	Sig.
	No.	%	No.	%	No.	%	No.	%		
Enough	9	18	14	28	7	14	32	64		
Enough to some extent	11	22	1	2	5	10	17	34	11.713	N.S
Not enough	1	2	0	0	0	0	1	2		
Total	21	42	15	30	12	24	50	100		
P≤0.05	df = 8		χ^2 crit. = 15.51							

df= degree of freedom; f= frequency; P= Level of probability; S= Significant; Sig.= significance; χ^2 crit. = Chi-square critical; χ^2 obs. = Chi-square observed; %= Percentage

This table indicates that there is no significant association between economic status and adolescents depression symptoms.

Discussion:

The study founded that most of adolescents , ages were (17-18) years accounted for (48 %), (26 %) were female, (40%) were graduate from intermediate school, (60%) have 1- 5 years as period of disease and all of them don't have any complication related to the diabetes,(74%) have regular visited to the diabetes center,(64%) have enough monthly income and (52%)there family member doesn't infected with diabetes mellitus (table 1), the finding of this study indicated that most of the adolescent level of depression has moderate level (47.7%), (45.5%) was low relative sufficiency ar (6.8%) was out of comparison relative sufficiency toward physical, mental, emotic and behavioral symptoms that suffering from(table 2,3,4 and 5). The findings of this study show there was no significant association between age, gender, Economic Status and complications years of diagnosis, but there is significant association between levels of education with diabetic adolescent's practices about depression (table 8).

These results are in consistence with (Mayou and et al 2001) in USA, reported that there was not any relation between gender and depression in diabetic patients. In addition, our result showed a significant difference between depression and diabetes types I. On the other hand Grey and et al reported significantly more depression in males over time. In the current study the level of depressive symptoms was correlated with age, education levels, and number of hospitalization in the previous 6 months and was not correlated with sex, duration of disease, level of parental educa and number of hypoglycemic episodes in the previous 6 months. [(8)].

Moreover, we found that the prevalence of depression was higher in diabetic adolescence. Some studies have suggested that adolescence with diabetes may be more likely to suffer from depression compared with their diabetic patient counterparts [(9)]. However, not all studies reported this gender differential. One study reported greater depression in men, but increased levels of anxiety in women [(10)]. Hood and et al 2004 reported that there was not any relation between gender and depression in diabetic patients. In addition, our result showed a significant difference between depression and diabetes types II and I, Clinical depression in individuals with diabetes may recur more frequently, episodes may last longer, and the long-term recovery rate may also be much lower. This increased risk for depression is thought to be similar in individuals with types I diabetes and types II [(11)].

This study founded that adolescents with IDDM and depressive symptoms reported a significantly depression levels than children, since adolescents are significantly more prone to depression than children at earlier ages.

Factors associated with elevated levels of depressive symptoms included demographic, diabetes-

specific, and family-functioning variables. Female subjects were more likely to have elevated levels of depression, more diabetes-specific burden reported by the parent, and both youth and parent report of significant diabetes-specific family conflict were associated with problematic emotional functioning for the youth, Parents or caregivers who are more stressed by diabetes management may provide less support, further promoting difficult emotional functioning [(12)].these agree with this study.

The findings reported that indicate a need to pay close attention to the emotional functioning of youth with type 1diabetes and the family's functioning across a number of areas and these agree with study done by Grey and et al 2002 in USA that reported Poorer diabetes-specific family functioning is a red flag for problematic emotional functioning in youth. Likewise, when parents and youth disagree about the youth's emotional functioning, they also tend to disagree about other areas, suggesting larger problems within the family system worthy of evaluation and intervention [(13)].

Recommendations:

The study recommended that:

1. Developing depression assessment tools for assessing adolescents' mental status and evaluating the level of depression.
2. Establishing new standard checklist suitable for nurses' practices concerning mental illness in Iraq depending on international standard checklist and upon the result of this study.
3. Special training programs should be designed and constructed for diabetic adolescent in this area to reinforce their skill in treatment of diabetic mellitus and decrease the level of depression.

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